



ITE Canada/CARSP 2023 Joint Conference

Preview the program, speakers, events,
and tours coming to Winnipeg

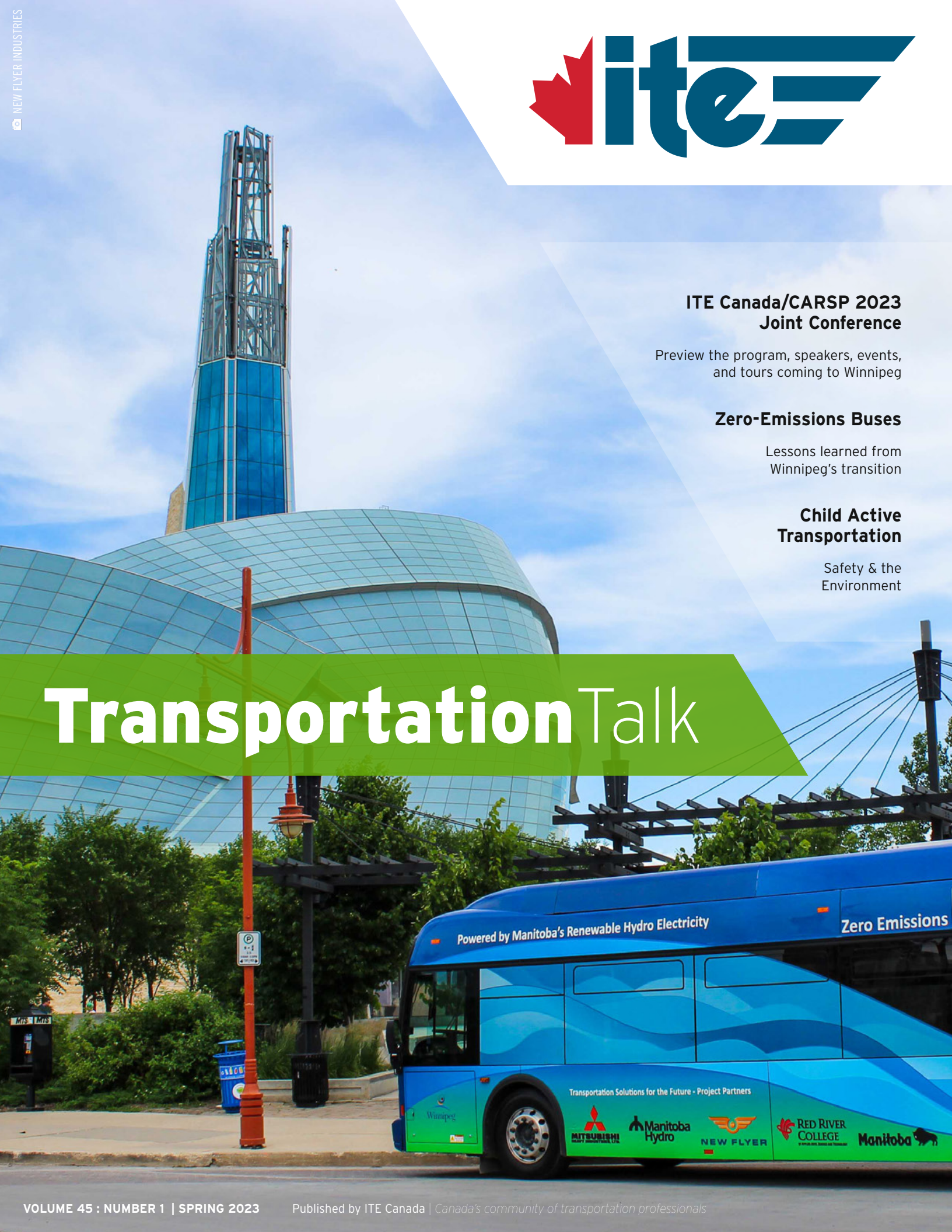
Zero-Emissions Buses

Lessons learned from
Winnipeg's transition

Child Active Transportation

Safety & the
Environment

TransportationTalk



NEW! Online Training

ROAD SAFETY for Canadian Practitioners

The *Road Safety For Canadian Practitioners* online training program, presented by TAC & ITE Canada, allows you to tailor your learning to your specific professional development needs. Five courses are offered:

- Foundations of Road Safety
- Measuring Safety
- Human Factors and Road Safety
- Solving Safety Problems
- Implementing Road Safety Programs

Comprehensive
& tailored
professional
development

FORMAT

Courses are delivered through TAC's Online Training Centre as self-paced, on-demand modules that include recorded lectures, case studies, exercises, supplemental reading lists & quizzes.

DURATION

Lectures in each course range from 3-6 hours. In total, the five courses offer 24 hours of learning. Modules are accessible for 6 months after payment.

PURCHASE

The five modules can be purchased individually or as discounted bundles. Find complete course details and prices at tac-atc.ca.



More Information:

www.tac-atc.ca/en/events-and-learning/online-training

FEATURES

7 Training: Big Data & Emerging Traffic Technologies

Recent training participants *Erik Nevland* and *Julia Salvini* share their highlights from past workshop offerings. Registration is open for the next virtual session happening May 18.

9 ITE Canada/CARSP 2023 Joint Conference in Winnipeg

Conference Co-Chair *Mark Hearson* offers a preview of the exciting conference program lined up for Winnipeg

15 The Transition to Zero-Emissions Buses: Lessons Learned from Winnipeg

Erin Cooke shares insights, challenges, and lessons learned in Winnipeg Transit's journey to shift to zero-emissions buses—plus preview related tours and presentations to come at ITE Canada/CARSP 2023

20 Research Highlight: Child Active-Transportation Safety and the Environment (CHASE)

The CHASE team share highlights from their extensive research program exploring links between the built environment and safe active travel amongst children

25 Member Highlight: Rebecca Peterniak

Meet *Rebecca Peterniak*, ITE Manitoba Section President, 2023 Conference Co-Chair, and past ITE Canada Rising Star Award recipient

ITE CANADA NEWS

5 ITE Canada Executive Committee
Call for Nominations6 RFP: Professional Training for
2023/2411 Training: Protected Intersection
Design12 Student Leadership Summit
Preview24 Staff Profile: James Johnstone,
Business Manager

27 TAC Tidbits

Our Appointees provide updates from the TAC Spring Technical Meetings

33 Section News

41 Student Chapter News

53 Welcome New Members

REGULAR COLUMNS

1 Ryan's Ramblings

A message from your President.
Ryan Vanderputten

3 From the District Director

Edward Soldo shares updates
from ITE International

58 Professional Services Directory

59 ITE Canada Contacts

ADVERTISERS

13 Innovative Traffic Solutions (ITS)

19 Associated Engineering

32 CTS

58 Bunt & Associates

58 CIMA+

58 Paradigm Transportation Solutions Ltd



**Ryan Vanderputten,
P.Eng., FITE**

President, ITE Canada
president@itecanada.org

With signs of spring all around, I am excited that we are just over a month away from our [Annual Conference in Winnipeg](#), Manitoba. Partnering with the Canadian Association of Road Safety Professionals (CARSP), we have an exciting joint program for all of our members to participate in. The theme "Road Safety: Creating Impact Through Diversity" will celebrate the various ways that transportation and road safety professionals make a meaningful difference in the lives of our communities. Also happening in conjunction with the conference is the [Student Leadership Summit \(SLS\)](#), hosted by the ITE University of Manitoba Student Chapter. I encourage all students who will be in Winnipeg on June 3-4 to participate in this event that is always packed with professional development, leadership, and community building opportunities for student members! Preview both of these events on [page 9](#).

One of my favourite parts of being part of the ITE Canada Executive is getting to meet many of our members through the various events and activities in our community. A few weeks ago while in Toronto for our Spring Executive Meeting, I took the opportunity to meet up with the ITE York University Student Chapter and hear about some of the great initiatives that they are involved in. Thanks to Professors Kevin Gingerich and Peter Park for taking the time to chat about ways that

ITE Canada can support the work of our students, and to student chapter president Adonai Garcia and the rest of the students for welcoming me to your campus!

Last week, I gave an update on ITE Canada activities to the Chief Engineers Panel of the Transportation Association of Canada (TAC). Our partnership with TAC is strong, with continued effort on a number of joint projects. The Road Safety For Canadian Practitioners online training program has now been rolled out, and ITE Canada recently approved a funding commitment for three new TAC projects. Our Appointees, who provide their updates on [page 27](#), continue to help bridge the two organizations on many TAC Technical Councils and Committees. Working in collaboration with our industry partners brings significant value to our members.

The next stop on my cross-country tour will be in Saskatchewan, where I will be representing ITE Canada at the Canadian Urban Transit Association Spring Summit in Saskatoon and then swinging down to Regina to participate in the ITE Saskatchewan Section Spring Session. I look forward to meeting more of our members during these events and sharing updates from ITE Canada.

ITE Canada has recently opened its call for nominations, for candidates to serve on the Executive Committee for a two-year term starting on January 1, 2024. If you are considering this opportunity, feel free to reach out to me and I can share my journey of ITE leadership and answer any questions you may have. More details on the call for nominations are on [page 5](#).



Ryan connecting with members of the
ITE York University Student Chapter in their office

I want to formally welcome our new Business Manager, James Johnstone, to our ITE Canada staff. James is responsible for the day-to-day operations of ITE Canada and is located in beautiful Victoria, BC. Learn more about James in his Staff Profile on [page 24](#). James is taking over from Steven Garner, ITE Canada's District Administrator, who will be retiring at the end of June.

I want to thank Steven for his contribution to ITE Canada over the last 8 years. He has helped us navigate through many administrative hurdles including incorporation, financial management, policy development, and most recently helping to establish the new charitable foundation. Your expertise and perspectives will be greatly missed, but I know you will enjoy spending more time with your grandkids, sailing around on your boat, and flying beyond the Island!

Hopefully, you have been noticing our new ITE Canada branding as we have been working with the Student Chapters and Sections to roll out the new logos. We will have some merchandise available at the conference celebrating our new logo as well. Wear it with pride!

I hope to see many of you next month in Winnipeg. Until then, feel free to drop me a line if you have any ideas about how we can make your ITE Canada experience better!

Ryan Vanderputten, P.Eng., FITE
President, ITE Canada



Edward Soldo, P.Eng., FITE

Canadian District Director, ITE
director@itecanada.org

Spring is in the air? Hopefully by the time you read this, winter will be long gone and everyone will have had the opportunity to get out and take in the outdoors. Winter in southern Ontario has alternated between ice storms to record-setting warm temperatures back to snow.

Speaking of change, Jeff Paniati, ITE Executive Director and Chief Executive Officer, has announced his intent to retire by the end of the year. His leadership has advanced and transformed ITE over the course of the last eight years. ITE has accomplished a lot under his leadership: it is a welcoming organization for all professionals in the transportation industry; we have reached an all-time high in membership; our services provide value to members; and the organization is financially strong and technically innovative. On behalf of ITE Canada, I would like to thank Jeff for all his contributions and for being a strong supporter of all things Canada over the years.

I would be remiss not to recognize another upcoming retirement. Steven Garner, our ITE Canada District Administrator, is also sailing/flying into the sunset this year. Early in my career on the District Executive, Jen Malzer and I had the opportunity to hire Steven and we knew he would be a great addition to the ITE Canada team. Steven has

been instrumental in helping modernize ITE Canada. He has been the guiding hand in everything we do, from our financial systems, conference organization, website, policies and procedures, to making sure the technology is working on training webinars. Best wishes, Steven, and enjoy the sunsets!

The [April edition of ITE Journal](#) has a number of great articles for you to review and highlights one of ITE's newest technical initiatives. The new [TrafficWiki](#) is an online tool that will serve as a one-stop shop for knowledge of all things traffic engineering. It is free online for members, offering an introduction to many traffic engineering topics and links to additional resources.

The ITE election results are also in: congratulations to John Davis, P.E., PTOE, RSP1 (F), who was elected as the 2024 International President of ITE, and Karen Aspelin, P.E., PTOE (F), who was elected as the 2024 International Vice President. I look forward to working with them on the International Board of Directors in their new roles.

I hope to see many of you at the upcoming joint ITE Canada/Canadian Association of Road Safety Professionals conference in [Winnipeg](#) or at the Joint ITE International and Western District Annual Meeting and Exhibition in [Portland](#).

Keep well, stay safe and if you have any questions regarding ITE, please contact me at esoldo@itecanada.org on Twitter [@EdwardSoldo](#).

A handwritten signature in black ink that reads "Edward Soldo". The script is fluid and cursive, with a prominent "E" and "S".

Edward Soldo, P.Eng. (F)
Canadian District Director



Above: Jeff Paniati connecting with the ITE Canada leadership at our Board Meeting in 2022.

Right: Jeff highlighting ITE's recent successes for members at a 2022 Annual Conference plenary session in Vancouver.



ITE TrafficWiki

This new resource from ITE offers introductory content and additional resources on many traffic engineering topics as highlighted above. ITE members can access it for free at wiki.ite.org.

ITE Canada Executive Committee Elections

CALL FOR NOMINATIONS

ITE Canada 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, 2024 to December 31, 2025.

Descriptions of the Executive Committee positions can be viewed and downloaded [here](#).

Nominations close Monday, May 29, 2023 at midnight Pacific Time.

Nomination Process

The Nominations Committee will undertake a general call for nominations that may also include a direct invite to potential candidates. Eligibility for the elected position will be determined by the Committee through an assessment of the nominee's suitability.

Please review the *ITE Canada Nomination & Election Policy* provided [here](#).

How to Apply

To apply, candidates must send a letter to the Nominations Committee Chair via email, including their interest in the position, why they are suitable, and two signatures from ITE members in good standing.

Nominations shall be submitted by email to:

Edward Soldo, P.Eng., FITE
Canadian District Director and
Nominating and Elections Committee Chair
Email: director@itecanada.org

Campaign Activities

ITE Canada will make space available on the corporation's website to highlight candidate profiles.

Candidate profiles must include the following information:

- name of candidate that will be used on the election ballot
- a photo of the candidate
- a 400-word or less candidate statement
- optionally, links to social media profiles or personal website

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 ITE Canada.
- 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 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.

REQUEST FOR PROPOSALS

Professional Training for 2023/2024



ITE Canada invites individuals or firms to express their interest in providing training opportunities to members of ITE. The purpose of training is to provide members with the latest trends and skills which are critical to members' professional development, career success, and effective performance of their job.

Training topics that ITE Canada would be interested in supporting may include but are not limited to:

- Speed Management
- Multimodal Level of Service
- Complete Streets
- Climate Change Considerations
- Health Impact Assessments
- New Ways of Transportation Demand Management Planning
- Accessibility Standards and Guidelines for Transportation Systems
- Roundabouts Operation and Analysis
- Equity Assessments for Transportation Projects (e.g. Gender Based Analysis Plus)
- Signal Timing Strategies for Pedestrians and Cyclists
- Emerging Technologies
- Curbside Management

See the full Request for Proposals [here](#).

To respond to this Request for Proposal, please submit the information requested to training@itecanada.org together with the curricula vitae of the trainer(s). This submission is intended to be a proposal in providing training on a topic along with demonstrable qualifications for being able to train others on the topic.

Deadline for proposals: May 23, 2023 at 5:00pm (Pacific).

Deadline for questions: May 9, 2023 11:59pm (Pacific).

TRAINING OPPORTUNITY

Big Data & Emerging Traffic Technologies

Lessons & Tools to Learn

VIRTUAL WORKSHOP

MAY 18, 2023



TRAINING FORMAT

This course will be delivered as a half-day virtual session



FACILITATORS

This workshop is offered by the ITE Canada Training Committee and will be facilitated by Pedram Izadpanah, Ph.D., P.Eng., Alexandre Nolet, M.Eng., RSP1 P.Eng., and Josée Dumont, M.A.Sc., RSP21, P.Eng. of True North Safety Group



DATE & TIME OFFERED

- Thursday, May 18, 2023
- 11 a.m. to 4 p.m. (Eastern Time) / 8 a.m. to 12 p.m. (Pacific Time)



REGISTRATION FEES

- ITE Member: \$180
- Non-Member: \$220
- Student: \$150

Register at
itecanada.org/training

TRAINING SUMMARY

With the advancements of telecommunications and image processing, new sources of data have emerged in the transportation field. These types of data can supplement or replace the traditional data sources which have been used for decades in the industry. The main purpose of this training is to introduce the emerging data sources/technologies to the audience, identify the challenges associated with these data sources, and provide guidance on how they can be used to support decision making.

In this training, three specific technologies will be covered, including: video conflict analysis, connected vehicle data, and cellular activity data.

LEARNING OUTCOMES

- Understand the potential applications of the emerging technologies in traffic engineering.
- Describe the capabilities and limitations of the technologies in transportation planning, traffic operations, and road safety projects.

Learn first-hand from past participants about what they gained and enjoyed from this workshop on page 8.

- **QUESTIONS ABOUT THE TRAINING PROGRAM?**
Contact the Training Committee at training@itecanada.org
- **QUESTIONS ABOUT REGISTRATION?**
Contact ITE Canada at info@itecanada.org

In early March, I had the opportunity to participate in ITE Canada's Big Data & Emerging Traffic Technologies Workshop. As a transportation planning engineer who oversees technical projects, this training was a great opportunity for me to refine my skills and learn more about the future of data analysis in the profession.

The level of detail in each of the three modules (video conflict analysis, connected vehicle data, and crowd-sourced data) was appropriate for both experienced professionals and those in the early stages of their careers. Participants were encouraged to ask questions and many relevant examples were discussed, including a detailed case study of applying video conflict analysis in the safety review of a real-world intersection.



Erik Nevland, MSc, P.Eng., PTP

*Senior Project Manager, Traffic Engineering | Region of Peel
President | ITE Toronto Section*

One of the most interesting components of the workshop was the discussion about the true extent of transportation data that is collected from connected vehicles. Conversations around this item were quite significant, as the vast majority of attendees did not fully comprehend the magnitude of connected vehicle data that is collected. The presenters did an excellent job at answering our questions and highlighted many of the relevant advantages and disadvantages of this and other big data sources.

I would highly recommend this workshop to any transportation engineers, planners, technicians, academics, or managers who are looking for an opportunity to learn more about this fascinating discipline while earning PDH credits for their professional licenses and accreditations.

In November 2022, I took the opportunity to participate in the virtual Big Data & Emerging Technology training put on by ITE Canada. The half day session provided a detailed overview of how video conflict data, connected vehicle data and crowd sourced data can be used in transportation projects. The training also provided insight into what data is collected and how it is evolving in Canada. The trainers were very knowledgeable and brought their experience to the group in a way that was appropriate both for those of use who have used some of this data and those that may be new to it and exploring ways to integrate it into our toolboxes.



Julia Salvini, MEng, P.Eng., FITE

*President | Salvini Consulting
Immediate Past President | ITE Canada*

Apart from the training itself, the most valuable part of the training for me was connecting with others across the country who are using the data and hearing some of the challenges and opportunities they are encountering. Many of our ITE Canada colleagues are having success using this data to support their various transportation projects in their hometowns and it was helpful to discuss them together and get the trainer's insights as well.

I recommend this training for anyone who is interested in learning about the options for using this data, which is continuing to evolve over time. The trainers provided a good balance of what can be done now and how we will be able to use the data in the future as well.



CARSP+ACPSER

WINNIPEG 2023 Joint Conference



ROAD SAFETY
Creating Impact Through Diversity



It is my pleasure to invite you to the joint ITE Canada and Canadian Association of Road Safety Professionals (CARSP) conference in Winnipeg, Manitoba from June 4th to 7th, 2023. This joint conference presents an opportunity for these two communities to exchange ideas and experiences in transportation and road safety, promoting safe transportation for all. This conference also offers a unique forum to share successes and learn how others in the transportation and road safety communities are creating impact.

To reflect the mandates of both organizations while also elevating essential and timely discussions, our technical program centers on the theme of **Road Safety: Creating Impact through Diversity**. We recognize the provision of safe, sustainable, and equitable transportation systems requires integrated actions and policies to meet the needs of different stakeholders including diverse users and decision makers. Much of the program will touch on ways to enhance safety, sustainability, and equity in transportation in the face of complex and competing priorities in a rapidly changing environment.

The theme flows through many of our **plenary and events** as well. On the Monday morning of the conference, Megan Wier of the Oakland Department of Transportation will kick-off the conference with a keynote address on **Partnerships to Prioritize Safety and Equity**. Tuesday's lunch will delve into similar challenges and opportunities through a panel of notable voices discussing equity, transportation, and road safety. This year's Banquet and Awards Gala will take place at the **Canadian Museum of Human Rights**, which is both a national landmark and unique architectural icon that inspires through the stories of human rights champions.

The joint conference is comprised of keynote speakers, panel sessions, workshops, and four concurrent streams of technical sessions with over 120 presentations. We invite you to further **explore our conference program** through the conference website, including descriptions of the many innovative session formats, technical tours, and social events.



The venue for this year's conference is none other than Winnipeg's leading conference facility, the RBC Convention Centre. Located in the heart of downtown, many of Winnipeg's great attractions are in walking distance, including the Forks, Manitoba Legislative Building, Canadian Museum of Human Rights, Winnipeg Art Gallery - Qaumajuq, True North Square, Exchange District, and Union Station. Many of the **technical tours**, including walking and cycling tours, will explore or pass by these attractions. Winnipeg, in its summertime glory, will serve as the wider backdrop for the conference. For those willing to venture outside of Winnipeg's downtown, Assiniboine Park, the Leaf, and Canada's Diversity Gardens are well worth the trip. [Explore a map of these attractions and venues on our website.](#)

For those unfamiliar with typical ITE Canada **social events**, the conference will feature the annual Collegiate Traffic Bowl and the Street Hockey Classic. The Traffic Bowl is a Jeopardy-style competition that pits teams from ITE Canada Student Chapters against each other for the title of Canadian champion. This year's Street Hockey game will take place on Memorial Boulevard in front of the beautiful Manitoba Legislative Building and is open to all. A student mixer will follow both the Traffic Bowl and Street Hockey game to cap off Monday afternoon activities.

With only one month until the conference, please consider registration if you have not already done so. Regular registration rates are available until May 19th and further discounted rates are available to existing members of ITE Canada or CARSP. Also, test your knowledge in the third and final round of the Trivia Challenge for your chance to win a prize at the conference.

We look forward to welcoming you to Winnipeg!

Mark Hearson

Co-Chair, ITE Canada/CARSP 2023 Conference

REGISTRATION

Be sure to **register by May 19, 2023** as late registration rates come into effect after this date! **CARSP & ITE members** receive additional discounts and special rates are offered for student & retired members. Find all the info you need to register at [conference.itecanada.org](#).

Register

TRIVIA CHALLENGE

Last chance to test your trivia skills: **Round 3 of the Trivia challenge is now open!** This round will prime you up for the conference as it centers around the program theme - *Road Safety: Creating Impact Through Diversity*.

**Take the
Trivia Challenge here**

Enter now for a chance to win one of three locally crafted prizes including wood and ceramic artwork and pottery!



Protected Intersection Design

JUNE 7-8, 2023 | WINNIPEG, MB



© Dylan Passmore



TRAINING FORMAT

This in-person session will be delivered over two half-day workshops held over two days immediately following the ITE Canada/CARSP 2023 Joint Conference in Winnipeg, Manitoba.



FACILITATORS

This workshop is offered by the ITE Canada Training Committee and will be facilitated by Kate Whitfield, P.Eng, MCIP, RPP, Nataliya Pekar, P.Eng., and Thaise Mota, P.Eng., M.Eng. of Alta Planning + Design Canada Inc.



DATE & LOCATION OFFERED

- Wednesday, June 7 - 1:45 to 5:15 p.m. and Thursday, June 8 - 8:30 a.m. to 12 p.m.
- RBC Convention Centre, Winnipeg, MB



REGISTRATION FEES

- ITE Member/Student: \$375
- Non-Member: \$450

TRAINING SUMMARY

Protected intersection design is an approach that intends to improve safety and comfort for all ages and abilities of people cycling and walking through intersections. The planning, design, and implementation of protected intersections has many aspects that require a thoughtful design approach, including addressing universal design and accessibility, complexity of traffic signals, and winter maintenance.

This training will expose transportation professionals to the principles of protected intersection design. The training will draw on forward-thinking design guidance and real-world case studies from around North America and internationally to help participants build an understanding of different approaches to key design issues and trade-offs. Participants will learn to think creatively and outside-the-box in how they tackle practical design issues that municipalities encounter every day.

Register at
itecanada.org/training

- **QUESTIONS ABOUT THE TRAINING PROGRAM?**
Contact the Training Committee at training@itecanada.org
- **QUESTIONS ABOUT REGISTRATION?**
Contact ITE Canada at info@itecanada.org



Saturday, June 3 - Sunday, June 4
University of Manitoba, Winnipeg



Photo by Salvador Maniquiz

The University of Manitoba ITE Student Chapter is excited to present the **2023 ITE Canada Student Leadership Summit!**

The Student Leadership Summit (SLS) is a great opportunity for you to gain insight from industry leaders and meet transportation students from across Canada. Hosted in Winnipeg immediately before the **ITE Canada/CARSP 2023 Joint Conference**, the SLS will feature a variety of professional development, leadership, and career building sessions. By participating in the SLS, you will have a great time, make valuable connections, and come home with a new understanding of how to succeed in your career.

Student Social Event

Saturday, June 3 | 6:00 - 10:00 PM

King's Head Pub, 120 King St, Winnipeg, MB

Connect with student leaders from across Canada. Appetizers will be provided.



Register Here

Professional Development Sessions

Sunday, June 4 | 9:15 AM - 4:45 PM

University of Manitoba, EITC E2-229

Gain insight from experienced professionals through a variety of leadership and career sessions. Breakfast & lunch will be provided.

Register Today!

Only **\$20** for ITE and CARSP student members. Register by **May 26th, 2023**.

Sunday Event Agenda

- 9:15 AM** Breakfast & Registration
- 9:45 AM** Opening Remarks
- 10:00 AM** Session 1: The Myths of Leadership by Linton Sellen
- 11:00 AM** Session 2: Effective Public Engagement by Sanjana Mada
- 12:00 PM** Lunch & Session 3 : Career Insights by Walter Burdz
- 1:15 PM** Session 4: Executive Q&A Networking
- 2:30 PM** Session 5: Transportation Equity by Orly Linovski
- 3:30 PM** Coffee Break
- 3:45 PM** Session 6: Insights on Leadership by John Davis
- 4:30 PM** Closing Remarks
- 4:45 PM** Take transit to the ITE Canada/CARSP Conference



Thank you to our sponsors!



Click here to register

If the registration fee creates a barrier for your participation at the SLS or if you have any questions about the event, please contact umanitoba@itecanada.org.

PRESS RELEASE

Ontario's Greater Sudbury Chooses SWARCO McCain ATC Cabinets



ATC Cabinets to enhance pedestrian and vehicle safety on the streets in Greater Sudbury, ON

Innovative Traffic Solutions Inc. and SWARCO McCain, partner for first Canadian, full-city McCain ATC Cabinet installation!

Innovative Traffic Solutions Inc. (ITS), a longtime SWARCO McCain, Inc. distributor, announced their partnership with the City of Greater Sudbury in the province of Ontario for the first Canadian full-city installation of the McCain ATC Cabinet.

The project includes upgrades to 122 intersections over a period of three years and is part of the City's plan to upgrade their traffic management infrastructure to a modern system that allows for future growth.

"This project aligns with City Council's commitment to asset management and service excellence," said Tony Cecutti, General Manager, Infrastructure Services for the City of Greater Sudbury. "This project relies on an organization that demonstrates a willingness to plan, implement, and innovate in accordance with short and long-term priorities. Initiatives that address this priority not only enable reliable service delivery; they also minimize costs for taxpayers in the long term."



The cabinets provided in this project include the McCain M ATC Cabinet, with the traditional M footprint of NEMA cabinets, and McCain 356i ATC Cabinet, boasting a compact size and robust functionality. Overall, the McCain ATC Cabinet Series offers a modern design with advanced safety features including benefits like increased safety for technicians and drivers, enhanced operations, and reduced costs.

"We are very excited to be partnering with the City of Greater Sudbury on such a significant project," said Frank Rao C.E.T., President of Innovative Traffic Solutions Inc. "The McCain ATC Cabinet has become the preferred cabinet choice throughout the traffic industry, and it's no wonder why. If an agency is looking for smart traffic solutions that incorporates the latest technology and provide a platform for flexibility and growth-the McCain ATC Cabinet is the best choice."

The project, to be completed in 2024, will not only provide the City with the infrastructure to support future growth and demand, but will also allow the City to leverage additional systems like transit signal priority and emergency vehicle preemption.



WORK SMARTER, NOT HARDER

Traffic cabinets house the components that transfer information to and from the controller and help manage traffic. ATC cabinets achieve all of that and more, with smarter and more efficient parts.

Traffic cabinets have remained pretty much unchanged for over 30 years. That is until the ATC cabinet hit the market and changed the game, combining the best of rack mount and serial-based designs. But new and different doesn't have to mean intimidating and scary.



The evolutionary ATC cabinet series which are built to comply with latest ATC Standard 5301 V02, the first standard released since 2009, making them one of the safest and most efficient cabinets on the market today. These innovative cabinets combine the best of rack mount and serial-based designs to meet the needs of today's LED intersections.



Using smarter, high-density components, ATC cabinets offer unparalleled control capabilities for intersections that would otherwise require unorthodox wiring or even a second cabinet. Users rave about the drastically reduced assembly size that allows for maximum functionality while providing room for auxiliary equipment. With the most sold in the industry, our proven ATC Cabinets meet the needs of today's smart cities and are ready for tomorrow's challenges, including the future of connected and autonomous vehicles.

The Transition to Zero-Emissions Buses

Lessons Learned from Winnipeg

By Erin Cooke, Winnipeg Transit



Winnipeg Transit was an early leader in the adoption of zero-emission buses, yet it has taken more than four years after its groundbreaking trial ended to see further investment in zero-emission buses. The technology operated reliably year round, and zero-emission transit has significant direct and indirect environmental and social economic benefits. So why didn't Winnipeg Transit start buying zero-emission buses immediately after the trial? And why has the transition to zero-emission in Canada been so slow despite significant federal investment in transit electrification?

Lessons learned from an early-adopter

The answer is complicated, but it comes down to the fact that a transit system is more than just a collection of buses, and transitioning to zero-emission buses is far more complicated than simply replacing a diesel bus with an electric one. The electric bus trial in Winnipeg resulted in the successful commercialization of battery-electric bus technology, but less was learned about the costs and the complexity associated with large-

scale integration of these new buses and infrastructure into existing transit operations.

Buses are one of the few commercially-ready fleet vehicles. If you want to purchase a standard, articulated, double decker, or even double articulated bus, there is something available on the market today. From a ridership perspective, an electric bus seems like a drop-in replacement for a diesel bus. However, from a transit service perspective, transitioning to new technology has a very significant capital and operational impact. Transit is not just buying a bus, it's building an entire ecosystem to support the bus. Significant study is needed to understand not just the capital cost of transitioning, but also the fundamental changes to route planning, scheduling, fuelling, parking, dispatching, service, and maintenance. Every department at a transit agency is impacted by the transition.

A transit system is not just a series of routes operating in isolation. A transit network is complex with routes overlapping and buses interlining—the practice of switching between routes throughout the day. The range and reliability of diesel buses allows buses to be deployed for more than 24 hours continuously and to easily interline between routes. Planning, scheduling, operating, and maintaining transit service is a complicated process, and transit agencies have spent the last 60 years optimizing systems based on the performance and reliability of diesel buses. All this is being upended by new technology with vastly different requirements.

Because of range limitations, early battery-electric buses needed to return to a charger every 2-3 hours, making interlining next to impossible. For simplicity, battery-electric buses were assigned to a single route where a charging session could be easily scheduled. This meant that any bus assigned to that route needed to stop every 2-3 hours, even diesel buses. Stopping to charge also resulted in a 20-minute service gap. To ensure consistent headways, additional

buses needed to be assigned to the route. For a four-bus trial, the cost of scheduling an extra bus in order to maintain service levels on a single route was barely noticeable, but if multiplied across the entire network, a city may need to expand its fleet size by as much as 10%, requiring significant increases to both capital and operating budgets.

Fortunately, technology advancements have greatly increased the range of today's battery-electric buses making deployments much more flexible, but they still have a third of the range of a diesel bus. Where diesel buses often go two or three days between fueling, battery-electric buses will need to charge every day, with some needing to charge two or even three times per day. While it may be possible to replace diesel buses with zero-emission buses on a 1:1 basis when it comes to fleet size, doing so will require creating shorter runs and swapping buses more frequently to accommodate buses heading back to the garage for charging. This will lead to more non-revenue mileage, more annual fleet mileage, and a need for more drivers—all of which have an operating impact.

A zero-emission alternative

Many transit agencies are trying to avoid this complication by initially placing zero-emission buses on shorter, less energy demanding routes. While this does make rollouts less complicated, this is not sustainable as the newest buses in a transit agency's fleet are typically expected to accumulate 30-40% more annual mileage than older buses. Restricting buses to shorter routes may have the unintended consequence of increasing the average travel of the diesel fleet, increasing maintenance costs and minimizing climate benefits. Winnipeg Transit is instead looking to a different technology to resolve this issue—hydrogen fuel cell buses. Fuel cell buses have up to 50% more range than battery-electric

buses, can be refueled in less than 15 minutes, and are fully zero-emission as they do not require diesel auxiliary heaters to manage range loss in Canada's harsh winters. Operationally, this makes them close to a direct drop-in replacement for diesel buses.

Regardless of which technology is purchased, the cost of purchasing a zero-emission bus is approximately twice as much as a diesel bus, not including the additional cost of charging or hydrogen fueling infrastructure. Early adopters of battery-electric buses were sold on a marketing pitch of operating savings paying for increased capital costs over their lifetime. While this is definitely possible with proper planning, this was not the reality experienced in Winnipeg and many other cities.

The importance of planning and analysis

Despite very low electricity pricing in Manitoba, the buses in our battery-electric bus demonstration were actually more expensive to operate than our diesel buses on a "fuel" cost per kilometer basis. Electricity pricing can be incredibly complicated; generally speaking, it can be simplified as a combination of power and energy rates. Energy is billed as the actually amount of electricity used each month and is directly related to the efficiency of the bus and how much the bus is driven. Power is billed based on the peak demand you place on the utility each month and is related to your charging strategy. The high powered charger used during Winnipeg Transit's four-bus demonstration project always pulled the same amount of power from the grid, and as such we learned that we would pay the same amount in demand charges every month whether our buses operated 2,000 km or 20,000 km. When first rolling out electric buses, there is a tendency to under-utilize and over-size

chargers. This could be either using an on-route charger designed for 14 buses to charge just 4 buses; or designing your charging network to charge your fleet in 3 hours, when you have an 8-hour charging window. Right-sizing the size of your pilot fleet to your charging strategy will greatly improve your cost outcomes. If Winnipeg Transit had operated a fleet of 14 buses instead of 4, the cost per kilometer of travel may have been more than 50% lower, and savings over diesel would have been achieved.

Charger availability was critical to early rollouts as any prolonged outage of an on-route charger meant parking the battery-electric fleet. To reduce the impact of demand costs and improve flexibility, most transit agencies are now purchasing long range battery-electric buses and slow-charging them overnight at centralized depots. On-route chargers are still in use, but they are now more frequently used for extending range rather than primary charging. With this change, the challenge with charging has shifted from scheduling to infrastructure planning. Instead of a single charger, transit agencies need to purchase multiple chargers. This gives added resiliency, but simultaneously operating multiple chargers can require a lot of power. It is important to forecast the future facility loads and to engage with your utility early to ensure your charging strategy is scalable.

To ensure that the scale up of its zero-emission fleet fully optimizes the potential for fuel savings, Winnipeg Transit has spent a lot of time studying the future energy needs of our zero-emission bus garages. We've worked to turn a service schedule into a charging schedule, and created an "energy twin" of a transit garage to help us refine our charging strategy. This allowed us to test out different charging rates and bus-to-charger ratios to see the impact on operating costs. From this analysis, we've opted to next test an aggressive four buses per 150kW plug-in charger. This has a

See it first-hand at ITE Canada/CARSP 2023 in Winnipeg

New Flyer Industries Bus Production Facility Tour

New Flyer is the largest transit bus manufacturer in North America. Come see raw materials and components come together on an assembly line that spans three city blocks. The tour will also visit New Flyer's New Product Development group where you will get a peek behind the scenes of the latest

innovations of electric and hydrogen fuel cell technology, charging systems, and autonomous buses and components. Get your ticket for this tour when you register at conference.itecanada.org.



Climate Impact of Implementing the Winnipeg Transit Master Plan

To meet the City of Winnipeg's green house gas (GHG) emissions targets, Winnipeg Transit has proposed a number of bold and innovative projects designed to shift people away from private vehicle travel toward more sustainable modes of transportation. Transition to Zero-Emission Buses and the Primary Network Design are two high profile projects that will reduce Winnipeg Transit's carbon footprint and transform transit service and infrastructure as the City moves towards a net-zero future. In this presentation, a team from Winnipeg Transit, including article author Erin Cooke, will share with you the benefits, challenges, and lessons learned while developing these projects.

See all of the presentations, panels, and workshops to come in June at the ITE Canada/CARSP 2023 Joint Conference [here](#) and register by May 19 before late registration rates kick in!

potential for significant fuel savings, but whether the logistics of operating a transit garage with so few chargers relative to the number of buses is possible will need to be determined. If not, gradually ramping up our zero-emission fleet gives us time to assess and adjust our strategy as we go.

Unfortunately, the cost and availability of low-carbon hydrogen makes it difficult for many transit agencies to consider fuel cell buses. Winnipeg was fortunate to have access to tri-level government funding and just enough power to consider producing hydrogen on-site at our transit garage. With low-cost Manitoba hydro-

electricity as a feed stock, we are hopeful that we can operate fuel cell buses at a price close to that of diesel. Our long-term goal is to eliminate the complexity of mid-day charging battery-electric buses by deploying fuel cell buses on the longest routes that are most difficult to electrify. This will hopefully allow for a balance between operating savings and operational change.

Looking to the future

Both battery-electric and hydrogen fuel cell buses are projected to have lower annual maintenance costs than their diesel counterparts, but there is

still a lot of uncertainty around life-cycle maintenance costs as very few zero-emission buses have been in continuous operation for more than five years. Buses in North America are designed to operate for at least 12 years but, due to a lack of stable funding in Canada, many transit operators maintain buses for 18 years or more. To keep buses on the road for that long, operators do a major overhaul at mid-life. While the structural frame of a zero-emission bus may also last 18 years, batteries are not projected to last beyond 12 years. Although battery prices are projected to fall, the cost of replacing batteries at mid-life will still likely negate most, if not all, of the cumulative maintenance savings. In addition, while electric propulsion systems have fewer moving parts, the cost of replacing any components that fail out of warranty could be expensive. Time will tell if lifetime maintenance costs are higher, lower, or similar to those of diesel buses.

Zero-emission buses have the potential to elevate the transit rider experience and provide broad environmental and socioeconomic benefits through reduction of greenhouse gas emissions, improved local air quality, and reduced vehicle noise. Even with these benefits in view, it is critical to remember that, at the end of the day, a transit agency's top priority is to deliver safe and reliable service. There are many advantages to transitioning to zero-emission buses but also financial and operating risks. The transition will likely not be smooth, but by developing a detailed roll-out plan and transitioning strategically, your organization can be prepared for and adapt to change. There is no short-cut to planning, as the risk of getting it wrong is too high. 🇨🇦



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Erin Cooke P. Eng., PMP leads Winnipeg Transit's Transition to Zero Emission Bus program, overseeing capital and operational projects related to the integration of battery-electric and fuel cell-electric buses, and engaging with transit agencies and industry professionals across North America to discuss emerging topics related to challenges of scaling zero-emission fleets.

Child Active-Transportation Safety and the Environment (CHASE)

By The CHASE Team

By giving priority to automotive over pedestrian transportation, we have allowed road traffic to become the leading cause of death among our children...

Modifying our built surroundings makes walking safer and encourages children to walk more...

We need direct research that will establish the extent of the association between our built environment and both positive and negative health-related outcomes.

-Andrew Howard, 2010¹

The Child Active-Transportation Safety and the Environment (CHASE) Research Program was funded by the Canadian Institutes of Health Research with the broad goal of understanding the factors related to safe active transportation among children and youth (Figure 1 on the following page).

Integral to our program of research was consultation with road safety professionals across a broad range of disciplines and sectors.² There were three specific objectives of the research.



ANHELINA OSAULENKO/UNSPLASH

1 Howard, A. W. (2010). [Keeping children safe: Rethinking how we design our surroundings](#). *Canadian Medical Association Journal*, 182(6), 573-578.

2 Hagel, B. E., Macpherson, A., Howard, A., Fuselli, P., Cloutier, M. S., Winters, M., Richmond, S. A., Rothman, L., Belton, K., Buliung, R., Emery, C. A., Faulkner, G., Kennedy, J., Ma, T., Macarthur, C., McCormack, G. R., Morrow, G., Nettel-Aguirre, A., Owens, L., ... Hubka, T. (2019). [The built environment and active transportation safety in children and youth: A study protocol](#). *BMC Public Health*, 19(1).

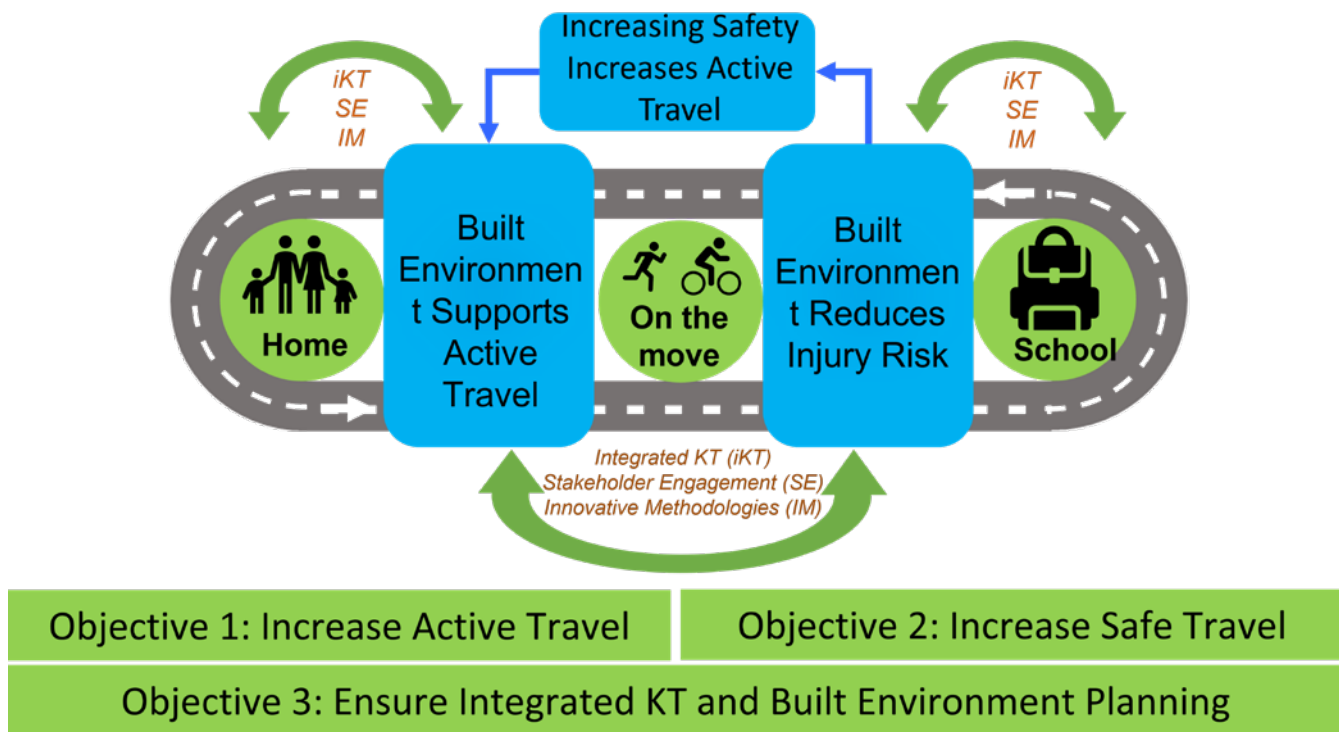


Figure 1. Conceptual Framework for the Child Active-Transportation Safety and the Environment (CHASE) Research Program ²

- To look at the relationship between the built environment and child active transportation to school within and across seven large Canadian centres: Vancouver and Surrey in British Columbia; Calgary in Alberta; Toronto and Peel Region in Ontario; and Montreal and Laval in Quebec;
- To look at the relationship between the built environment and child and youth active transportation injuries in these cities;
- To identify strategies to change the built environment, at the municipal level to encourage active transportation.

Given the paucity of consistently collected data on how children get to school, we made

observations during morning drop-off at over 500 elementary schools in the seven CHASE cities. We found that 54% of children used some form of active transportation; however, use ranged from approximately 40%-70% across cities, with considerable differences among schools within each city.³ We also noted that increased active school transportation was associated with more children living in the area, the number of traffic signals in the area, the city's Walkscore® (the walkability of the neighbourhood from [walkscore.com](https://www.walkscore.com)), the presence of adult crossing guards, number of local roadways, having cycling infrastructure (such as a cycle track) and lower numbers of residential units within the area.

3 Rothman, L., Hagel, B., Howard, A., Cloutier, M. S., Macpherson, A., Aguirre, A. N., McCormack, G. R., Fuselli, P., Buliung, R., HubkaRao, T., Ling, R., Zanutto, M., Rancourt, M., & Winters, M. (2021). *Active school transportation and the built environment across Canadian cities: Findings from the child active transportation safety and the environment (CHASE) study*. *Preventive Medicine*, 146.

We combined our data on the number of children using active school transportation with data from police traffic collision reports to identify factors related to child and adolescent pedestrian and bicyclist motor vehicle collisions. We found that the number of residential units in an area, the number of parks in an area, and areas with more local roads were associated with a reduced risk of collisions while the number of traffic signals and areas with the highest percentage of low income families were associated with an increased risk of collisions.⁴ We are also using this comprehensive CHASE dataset to relate neighbourhood built environment characteristics to child bicyclist and pedestrian injuries, and the prevalence of child active transportation with a novel machine learning statistical approach. A study of site-specific built environment features that may influence child bicyclist injury rates, using emergency department data from Vancouver, Calgary, and Toronto is also ongoing.

Alongside the research on safe child active transportation, we looked at facilitators and barriers to making changes to the built environment. We used interviews and focus groups to speak with municipal planners, policymakers, law enforcement, public health personnel, and other road safety partners.⁵ We used an established health research framework to guide our analysis of these data. The most important barrier to changes in the built environment supporting more safe child active transportation was, perhaps not surprisingly, the priority given to motor vehicles over active modes of transportation. Other barriers included

the lack of funding and resources, lack of political will, and lack of collaboration among those working in this area. The good news is that we identified cross-sectoral collaboration, data sharing, and the presence of champions and advocates as facilitators of the process.

Over the term of the research program, the CHASE team has produced scientific outputs, created a large database with multiple inputs, and engaged with our municipal and community partners to produce tools that provide important information on factors related to safe active transportation. This includes an environmental scan and scoping review on the effectiveness of built environment interventions in Canadian municipalities.⁶ The report was the foundation for a website on engineering, enforcement, and education strategies aimed at increasing safe child active transportation: projectchase.ca. Our database includes 500+ school environment site audits, active transportation counts, dangerous driver behaviours, census data, and police-reported traffic collisions for seven municipalities across Canada. We have produced a series of infographics outlining municipality-specific CHASE findings. Finally, Parachute–Canada’s national injury prevention charity—has a considerable array of road safety resources (parachute.ca) that have integrated the CHASE study outcomes.

Building on this momentum, we continue to work with municipal and active transportation safety partners to promote built environment change, including the advancement of a Vision Zero/safe

4 Rothman, L., Schwartz, N., Cloutier, M. S., Winters, M., Macarthur, C., Hagel, B. E., Macpherson, A. K., El Amiri, N., Fuselli, P., & Howard, A. W. (2022). [Child pedestrian and cyclist injuries, and the built and social environment across Canadian cities: The Child Active Transportation Safety and the Environment Study \(CHASE\)](#). *Injury Prevention* 2022;28:311-317.

5 McCulloch, E., Giles, A., Macpherson, A., Hagel, B., Buchan, C., Pike, I., Torres, J., Fuselli, P., Pitt, T., Tavakolfar, P., Desrochers, É., & Richmond, S. A. (2022). [Applying the Consolidated Framework for Implementation Research \(CFIR\) to examine barriers and facilitators to built environment change in five Canadian municipalities: Lessons from road safety and injury prevention professionals](#). *Journal of Transport and Health*, 27.

6 Richmond, S. A., Buchan, C., Pitt, T. M., Medeiros, A., Pike, I., Hagel, B. E., Rothman, L., Macarthur, C., & Macpherson, A. K. (2022). [The effectiveness of built environment interventions embedded in road safety policies in urban municipalities in Canada: An environmental scan and scoping review](#). *Journal of Transport and Health*, 27.

systems approach (visionzero.ca) and addressing gaps in knowledge through the pursuit of reliable data and rigorous evaluation of interventions.⁷ Our research has established the need to prioritize social equity in planning and implementing built environment and policy changes to improve road safety.^{8,9} Important road safety strategies include reduction of motor vehicle speed limits, traffic calming interventions, and physical separation of children from traffic (separated bike lanes, better walking infrastructure) when motor vehicle speed limits exceed 30 km per hour with priority given to historically more marginalized, lower socioeconomic areas.

We were fortunate to have a diverse group of partners engaged throughout this program of research. We gratefully acknowledge the important contributions of those from the fields

of injury prevention, environmental sustainability and advocacy, transportation, road safety, bicyclist and pedestrian count technology, active transportation advocacy, public health, and emergency medicine.

Please visit our website (projectchase.ca) for further details about the program and access to child active transport resources that are based on scientific evidence, such as the tool shown in Figure 2. CHASE has provided novel and important information on the relationships between active transportation, the built environment, pedestrian and bicyclist motor vehicle collision injuries, and road safety policies. Our work has highlighted that progress in creating environments for safe active travel is dependent on prioritizing vulnerable populations that include low-income communities. 🇨🇦



Figure 2. Screenshot of a tool at projectchase.ca that summarizes results from published studies examining the effectiveness of built environment interventions at increasing road safety.

CHASE (Child Active-Transportation Safety in the Environment) is a 5 year team grant funded by Canadian Institute for Health Research (CIHR). The team includes 26 applicants from academic institutions, hospitals, municipal/provincial/ national governments, and not-for-profit organizations representing many different disciplines across Canada. The study aimed to answer questions about how the built environment influences child and adolescent active transportation and the risk of active transportation injury.

7 Cloutier, M. S., Beaulieu, E., Fridman, L., Macpherson, A. K., Hagel, B. E., Howard, A. W., Churchill, T., Fuselli, P., MacArthur, C., & Rothman, L. (2020). *State-of-the-art review: Preventing child and youth pedestrian motor vehicle collisions: Critical issues and future directions*. *Injury Prevention*, 1-8.

8 Rothman, L., Cloutier, M. S., Manaugh, K., Howard, A. W., MacPherson, A. K., & MacArthur, C. (2020). *Spatial distribution of roadway environment features related to child pedestrian safety by census tract income in Toronto, Canada*. *Injury Prevention*, 26(3), 229-233.

9 Schwartz, N., Howard, A., Cloutier, M.-S., Mitra, R., Saunders, N., Macpherson, A., Fuselli, P., & Rothman, L. (2022). *Social inequalities in child pedestrian collisions: The role of the built environment*. *Transportation Research Part D: Transport and Environment*, 111, 1-15.

James Johnstone

Business Manager, ITE Canada

When did you start with ITE Canada?

I started in March 2023 and have been training with Steven Garner, Evonne Winchiu Donaher, and members of the board and executive. Feel free to introduce yourself (jkjohnstone@itecanada.org) if you have a minute. I'd love to get to know you!

What have you been working on?

I've been learning the various systems and day-to-day procedures for updating the website, responding to inquiries, paying bills, issuing refunds, setting up events, etc. ITE Canada is a very dynamic, exciting organization with many different moving parts. I look forward to continuing to learn more about the organization.

Tell us about your past employment

I have a background working in various roles at not-for-profit organizations. I was the assistant executive director for BC School Sports and the executive director at BC Archery - both are membership-based organizations that offer various programs for their members. I've also recently worked for both the University of Victoria and Royal Roads University in administrative supporting roles. I'm excited to join ITE Canada and look forward to supporting the board and executive committee, while keeping the business side of the organization running as smoothly as possible.

What are your priorities for your role in the future?

My short-term priority is to get as comfortable as possible with how things work at ITE Canada, including supporting the executive and board. Long-term, I hope to use my skill set to keep things as organized and efficient as possible, while making improvements to processes and



procedures. My ultimate goal is to do everything I can to keep ITE Canada a dynamic, productive and effectively managed organization.

Where do you live?

I live in Victoria, BC with my two teenage sons. We're lucky enough to be surrounded by beautiful parks, lakes and ocean views.

What are your hobbies?

I enjoy open water swimming in the warmer months, as well as hiking and kayaking. We try to spend as much time outside as possible. My sons play baseball, so I'm often found sitting in a lawn chair at various baseball diamonds throughout the city, trying not to get too sunburned.

What's your favourite mode of transportation?

My favourite mode is the good old-fashioned bicycle. It's fun, great exercise and environmentally friendly. Of course, I still appreciate the convenience of cars and planes and (where I live) ferries, but nothing beats the simple joy of a leisurely bike ride.

Rebecca Peterniak

M.Sc., P.Eng., RSP₁

Current Employment: Community Traffic Engineer, City of Winnipeg

City of Residence: Winnipeg, Manitoba

Education: University of Manitoba, B.Sc. Civil Engineering (2012) and M.Sc. Transportation Engineering (2015)

First job in transportation: Traffic Engineering Summer Student with the Ontario Ministry of Transportation in London

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

- Various executive roles with the University of Manitoba Student Chapter and Manitoba Section
- Former member of ITE Women in Transportation Subcommittee
- Co-Chair of ITE Canada/CARSP 2023 Joint Conference

Hobbies: Scratch cooking, herbalism, hiking, yoga, gardening

Family: Married to Jonathan Viel with a much-loved goldendoodle, Freddy



ITE INVOLVEMENT

What is your ITE involvement (past and present)?

I joined the UofM Student Chapter in 2009 and volunteered in several executive roles. Highlights from that time include technical trips to the United Kingdom and Panama, participating in the ITE Canada and ITE International Traffic Bowls, and running a bike safety workshop for youth. It has been fun co-chairing the 2023 conference with fellow UofM Student Chapter Past President, Mark Hearson. I look forward to welcoming everyone to Winnipeg this June!

What do you value most about your ITE membership?

Networking opportunities. I have made so many great professional connections and friends through ITE. I also value the leadership opportunities and ability to be creative in organizing different initiatives.

GETTING TO KNOW YOU

What attracted you to the transportation profession? Did you have another career in mind?

When I was in grade 12, I met Roberta Bondar who is the first female Canadian astronaut to go into space. She told me the one degree she didn't have but wanted was in engineering. So, I went into mechanical engineering with the thought of becoming an astronaut. I made the switch to civil engineering after learning on a long commute home from university that civil engineers are responsible for timing traffic signals, which was somehow more alluring to me than outer space.

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

The most daring thing I've done professionally is probably studying and working in foreign countries where the language and culture are different than my own. I lived in Costa Rica for

three months doing research. Following my studies, I returned to Costa Rica as a consultant and also did work trips to Morocco and India. It's a challenge to navigate the profession in another country, especially as a young person. I admire those who are new to Canada and do this every day.

What is the last book that you read or are reading?

My kitchen table is often stacked with various cooking and food preservation books. I'm currently flipping through all of my Baba's old Ukrainian cookbooks as I pick out recipes for Easter.

PROFESSIONAL ACHIEVEMENTS & PERSPECTIVES

Tell us about a project you're proud to have worked on

I am proud to have scoped, launched and managed the development of Winnipeg's first road safety strategy. It is an important milestone for the City that I hope will have a big impact on road safety.

Who has had the greatest influence on your career?

On a foundational level, my parents. My mom was a trailblazer in her field as the first female police officer to walk the beat in downtown Winnipeg. She fostered my confidence and makes me feel like I am capable of anything. To me, my dad embodies integrity. So, from them I learned how to lead with integrity, which is important considering the ethical obligations of engineering. But in my career specifically, it would have to be my advisor, Jeannette Montufar. She helped me find my passion for road safety and provided immeasurable inspiration, guidance, and support throughout my studies.

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

I want to know that I've had an impact. Not only when it comes to making roads safer and communities healthier, but I also want to have had a positive impact on the lives of my colleagues and peers, and to have helped and mentored those coming up behind me.

What is the greatest opportunity you see for the field?

In high school, my guidance counselor told me to go into engineering because I was good at math and science. It wasn't until university that I learned how much engineers impact quality of life, and it was this aspect that motivated me. I think we'd attract a much more diverse workforce if we marketed the profession differently—and there is great opportunity in having a workforce that reflects the communities that we serve. 🇨🇦





ITE Canada has a strong partnership with the Transportation Association of Canada (TAC). One of the cornerstones of this relationship is participation on a number of TAC technical councils and committees through Appointees. In this edition of TAC Tidbits, our Appointees share updates from the TAC 2023 Spring Technical Meetings.

CHIEF ENGINEERS PANEL

The TAC Chief Engineers Panel met virtually on April 28, 2023. The committee received updates from each of the TAC Councils, as well as four external organizations. The councils are all extremely active, with many pooled-fund projects as well as volunteer projects underway. Key themes during the roundtable discussions:

- Environment & Climate Change – climate mitigation, transit system electrification
- Infrastructure & Asset Management– snow/ice control priority & investment
- Mobility– big active transportation budgets, on-street patio programs, multimodal plans
- Safety, Design & Operation – Vision Zero, school zones, automated speed/red light cameras, traffic calming
- Workforce Development – staff shortages, aversion to overtime, lack people to spend budgets
- Other – contractor shortages, safety of internal operations (speeding, side guards)

The CEP also received the interim report from the Task Force on Developing Highly Qualified Personnel.

Ryan Vanderputten M.Eng., P.Eng., FITE

*Chief Engineer and Director, Business & Engineering Services | City of Calgary
President | ITE Canada*



TECHNOLOGY COUNCIL

TAC Technology Council committee met virtually on April 17, 2023 for the Spring Technical Meeting. Key highlights of the meeting are:

- The council recommended the project for the Technology Achievement award category and the recommendation moved forward.
- Currently TAC has a number of pool funded projects (six in development and six in progress) and about thirty volunteer projects.
- The two volunteer projects; Harmonization of Road Authority Data and Rural ITS Primer provided their updates in during the meeting.
- Three projects were presented in the meeting: i) Cyber Attack and Public Sector ii) EV Charging deployment iii) ZEV Infrastructure Program.

Bidoura Khondaker PhD., P.Eng., PTOE

Senior Transportation Engineer | Calgary Transit, City of Calgary



Road Safety Committee

TAC's Road Safety Committee met virtually on April 17, 2023 as part of TAC's Spring Technical meetings. Road Safety and Truth and Reconciliation is a newly formed working group in this council undertaking benchmarking and research of globally available information to allow members to hear directly from Indigenous voices and practitioners who have completed projects with these communities. The study is geared towards road safety challenges and experiences Indigenous People in Canada face from Indigenous People themselves, and from researchers and practitioners who have worked with Indigenous communities. Other initiatives from this council include Vision Zero and the Safe System Approach: A Primer for Canada and Synthesis of Canadian Practices in Vision Zero and the Safe System Approach..

Farhad Shahla M.Eng., P.Eng., PTOE, PMP

Manager, LRT Technical Services and Approvals Coordination | City of Hamilton



Geometric Design Committee

The Geometric Design (GD) Committee Spring Meeting was held virtually with approximately 65 attendees.

- Report of the executives meeting of all TAC committees: 8 technical projects are currently in progress, including Access Management. Cross Section Elements is seeking funding (~50% funded).
- Marcia Eng of Urban Systems presented the Bowness Road Complete Streets project, in Calgary. The project was completed in 2020 and 2021 and included Calgary's first protected intersection, green infrastructure, and 3 km of new protected bike facilities. Matthew Ivany from the City of Edmonton presented the city's newly developed design guide for raised crossings, including raised midblock crossings, raised crossings at intersections, and raised intersections.
- Updates of the following working groups were provided: Interchanges, Access Management, Cross Section, Overdimensional Vehicles, and Adaptation to Climate Change. The latter has recommended changes to TAC GDGCR cross-slope section 3.5 to R&A subcommittee to allow for cross-slopes of up to 3%.
- Geoff Noxon presented the results of the member survey on training on GD: TAC looking to increase online training focused on flagship publications, particularly for TAC GDGRC.
- Updates on the TAC Conference in Ottawa 2023: 4 sessions with 27 presentations, 2 panels, and 1 workshop about Accessibility in Design.

Thaise Mota P.Eng.

Transportation Engineer | Alta Planning + Design Canada, Inc.



Traffic Operations and Management Committee

The Traffic Operations and Management Committee (TOMC) met virtually on April 18, 2023.

A “Hot Topic”—the Corkelast embedded system—was presented by Christopher Sauvé of Edilon Sedron, and updates on the US MUTCD and US NCUTCD were presented by NCUTCD representatives.

For the Fall Conference, two sessions will be hosted by the TOMC:

- Innovative Traffic Control, including 6 submission by a variety of presenters and
- Next Generation Mobility, also including 6 submissions.

The editing and publication subcommittee reported that 3 projects are nearing completion:

- Transit Priority Signals
- Parking Prohibitions except when Charging
- Retro reflective sign placement

Several committee projects are underway, including consideration of innovative measures and emerging issues and updates were provided during the meeting.

Relevant reports from other TAC committees were also shared during the meeting.



Russell Brownlee M.A.Sc., FITE, RSP¹, P. Eng.

President and Transportation Safety Engineer | True North Safety

Luis Escobar P.Eng., PTOE,

Senior Associate & Discipline Lead | Stantec



Kari Fellows P.Eng., PTOE, RSP¹

Senior Transportation Engineer | WSP E&I

Greg O'Brien P.Eng.,

Atlantic Practice Manager, Traffic Engineering & Transportation Planning | WSP



MOBILITY COUNCIL

We had a great Mobility Council meeting this Spring and covered a lot of territory. After regular updates from the supporting committees, we discussed Pooled-Funded Project Proposals (Curbside Charging for Electric Vehicles & AFPs for Major Transportation Projects), then moved on to hear from two Volunteer Projects (Importance of Transportation Funding & Continuous Sidewalks). Continuing on the funding theme, we had a presentation on Mobility Pricing - Opportunities and Challenges, then wrapped with a presentation from CUTA on their current initiatives. Funding, pricing, and inflation were certainly topics that are being talked about a great deal, so if you would like to contribute to this conversation, please [reach out to the TLC](#) or your local ITE Canada Section.

Ryan Martinson M.Eng., P.Eng., RSP¹

Principal + Sustainable Transportation Specialist | Martinson Golly Ltd.



Mobility Management Committee

The Mobility Management Committee had a virtual meeting on April 25, 2023. The committee discussed the following sessions regarding its planning for the Fall TAC Conference:

- Effective Transportation Demand Management Approaches
- Electric Vehicle Charging
- Bike Sharing and Micromobility
- Standardization in Curbside and Mobility Management

Various updates were provided by working group members, including an award of contract for the Shared Mobility Services in Canadian Communities, expected to be completed by Summer 2024.

The committee approved recommending to the Mobility Council a Pooled-Fund Project Proposal on Curbside Charging for Electric Vehicles. There was a good discussion on how the project should consider curbside charging as part of the larger ecosystem of EV charging, including off-street opportunities, to manage the need most effectively.

Dale Bracewell P.Eng., MASc

Principal | Mobility Foresight



Active Transportation Integrated Committee

The Active Transportation Integrated Committee met on April 24 to review recent progress on committee projects, discuss coordination efforts with other committees, and review planning for September's TAC conference. Key topics included:

- Review of the volunteer paper - Synthesis of Emerging Practice: Continuous Sidewalks and Bike Lanes. This paper covers recent work across Canada for implementation of this treatment, including recommendations for suitability of implementation and key design details.
- Presentation by Lui Greco of CNIB on Accessibility at and around Construction Sites. This presentation reviewed significant concerns with the impact of construction sites on the ability of users with vision impairments to navigate the built environment.

Patrick Zerr P.Eng.

Project Engineer | McElhanney



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Associated Engineering provides customized, strategic transportation planning and traffic engineering services. Complementing our technical expertise, our specialist team brings strong project management, consultation, and facilitation 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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- Functional Corridor Planning
- Intelligent Transportation Systems
- Safety Reviews & Audits
- Intersection & Network Analysis
- Traffic Operations Analysis
- Traffic Impact Assessments
- Traffic Accommodation Plans
- Traffic Signal Design

The Greater Vancouver Section has had a busy start to the year with our monthly events. We kicked off 2023 with an in-person presentation by long time ITE Canada members Jan Voss and Gary Vlieg of CTS. Their presentation “An introduction to Expert Witness Work for Traffic Engineers in BC” was an interesting look at the role of an engineer when it comes to being an expert witness.

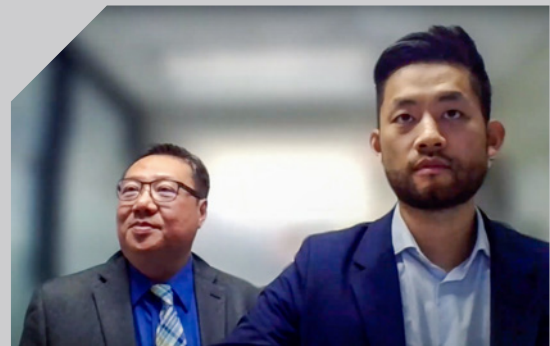
In March we held an online presentation on the City of Burnaby Road Safety Network Screening Study. The event was well attended, and presenters James Lao (City of Burnaby) and Borg Chan (ISL Engineering) provided interesting background and insight on the findings of the study. This presentation was recorded, and is available for viewing on [ITE Canada's YouTube page](#).

We hosted our first joint event with the Planning Institute of BC (PIBC) on April 20th in downtown Vancouver. With ITE Canada's goal of strengthening the participation of planners in our transportation community, this was a great opportunity for cross-discipline networking!

Finally, our LinkedIn page is up and running again. Follow us on LinkedIn to see what we've got going on this year: [linkedin.com/in/ite-canada-greater-vancouver](https://www.linkedin.com/in/ite-canada-greater-vancouver) 



Greater Vancouver Section President Khelen Upadhyay welcomes attendees to the March webinar



March webinar presenters Borg Chan of ISL Engineering (left) and James Lao of City of Burnaby (right)

For this quarter, the Southern Alberta Section (ITE SA) started off by welcoming our new executive members for 2023:

- President - Josh Workman (acclaimed)
- Vice President - Lou Mak (acclaimed)
- Secretary - Kayla Royce (acclaimed)
- Treasurer - Annie Wang (acclaimed)
- Publicity Coordinator - Kenneth Lin
- Past President - Madhuri Seera (acclaimed)

ITE SA started off our year with January Luncheon that included a presentation on Intermodal Strategies for Emerging Autonomous Delivery Technology by Jacob Lamb, University of Calgary, along with our open house. Jacob's presentation focused on Calgary as a case study on how GIS modelling can be used to identify the

required number and locations of micro-fulfillment centres in a city. The open house consisted of a dotmocracy exercise where feedback from our membership was received regarding what they would like to see out of ITE SA for the coming year and beyond.

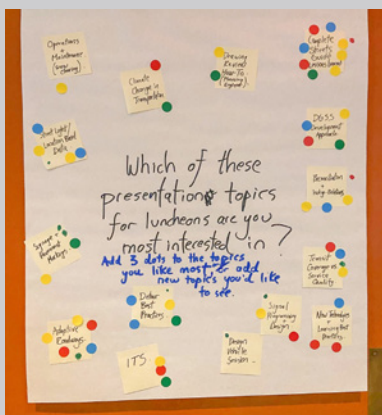
In February, Matt Worona, Stantec Consulting Ltd., presented on Managing Privacy Considerations for Mobility Data. In his presentation, Matt presented on data-sharing requirements that allow cities to use trip and route data to evaluate system performance and deliver day-to-day management.

Our March Luncheon included a presentation by Andrew Sedor, City of Calgary, on the City of Calgary Seasonal Patio Program where he discussed the history and evolution of the patio program and what to expect for the 2023 seasonal patio program.

Also in March, ITE SA organized a social night at Kensington Pub where members were invited to enjoy some beverages and snacks, catch up on winter highlights, and discuss plans for the year ahead. We had the pleasure of being joined by several University of Calgary Chapter ITE members and look forward to them joining us for future events.

The April event consisted of a webinar where Geni Bahar, NAVIGATS Inc., presented on Advancing Your Career Through Certification. In this presentation, Geni provided an overview about PTOE, PTP, RSP1 and RSP2 along with in-depth information about the RSP Certification.

For our upcoming May event, we have begun planning a social and technical tour at the City of Calgary's Mobility Operations Centre where attendees can see the ins and outs of traffic monitoring and management at this state-of-the-art facility. 



The Saskatchewan Section has been busy kicking off the year with several events. In February, the Saskatchewan Section hosted two Student Pizza and Pint nights; one at the University of Saskatchewan in Saskatoon and one at the University of Regina in Regina. Along with Engineering students and faculty, we also had some planning students and faculty attend the events. This was a great networking opportunity for all attendees!

In March, the Saskatchewan Section hosted its Student Presentation Competition. There were student entries from both the University of Saskatchewan and the University of Regina. Zaima Tasneem from the University of Regina received 1st prize for a presentation on the Economic Analysis of On-Demand Transit Services. The 2nd prize went to Saeed Jey from the University of Saskatchewan for a presentation on Assessing the Impact of Traffic Volume Changes in Observational Before-After Safety Studies: a “No Treatment” Evaluation during COVID-19 Pandemic in Canada. Ferdous Haque Shikder from the University of Regina received the 3rd prize for a presentation on Collision Prediction at Urban Intersections using Advanced Algorithms.

The Saskatchewan Section would like to thank the judges who volunteered their time for the Student Presentation Competition: Archie Gillies (Ministry of Highways), Marina Melchoirre (City of Regina), Patrick Lalach (CIMA+).

Finally, we are actively planning our Spring Session, a full day event filled with local presentations, which will be held in Regina at the University of Regina - College Avenue Campus on May 9, 2023.

Follow us on Facebook: [@ITEsaskatchewan](#) 

ITE Manitoba held its first luncheon of the year on March 9th, 2023. The luncheon featured a technical presentation on Winnipeg's Emergency Vehicle Pre-Emption (EVP) Feasibility Study by Morgan Glasgow of the City of Winnipeg and Steven Florko of MORR Transportation Consulting Ltd.

The study quantified potential benefits and costs of a wide application of EVP in Winnipeg, including improvements in emergency response time, reduction in the number of collisions involving fire & paramedic vehicles, costs for EVP equipment and software, and potential impacts on general traffic. The presentation showed how each factor was quantified, and how the study considered the many different traffic conditions and intersection configurations in Winnipeg in a meaningful but concise manner.

ITE Manitoba is also planning a mock Traffic Bowl competition in May 2023 in preparation for the Traffic Bowl at the upcoming 2023 ITE Canada/CARSP joint conference. This will be similar to the mock Traffic Bowl held in 2012. The mock Traffic Bowl will test the skills of Manitoba's transportation industry professionals in a fun setting for some great prizes!

The Local Arrangements Committee for the 2023 ITE Canada/CARSP joint conference in Winnipeg remains busy preparing to host the upcoming conference. We're looking forward to welcoming everyone to Winnipeg in June! Visit the conference website (conference.itecanada.org/) for all conference-related information and stay tuned for future emails with more details! 




Morgan Glasgow, City of Winnipeg presents at the March Manitoba Section luncheon



Section members enjoyed a mock Traffic Bowl event in 2012 prior to the previous Annual Conference in Winnipeg

The Southwestern Ontario section has been busy getting ready to host a number of events this year and is working on spreading out our event locations also. Our executive also experienced some turnover and we've been able to host and plan for a few events in 2023.

In late March, our Section held our first event in 2023, in which the City of London provided us with a tour of one of their winter maintenance facilities including showing us how much sand and salt is utilized during the winter season and also displaying some of their maintenance vehicles that clear roadways, sidewalks and bike lanes.

In early May, our Section will be hosting an event in Kitchener, Ontario where staff from the City of Kitchener and Region of Waterloo will lead a tour of downtown Kitchener showing the recently constructed active transportation and transit infrastructure. 



On March 1st, 2023, ITE McMaster Student Chapter and ITE Hamilton Section held their first collaborative event of the year: "Career Connect with Kate". The event, which took place at McMaster University, was a "live" version of the "Career Connect with Kate" initiative started in 2020. The goal of the event was to bring together students and job-seekers who are looking for professional experience in transportation engineering and planning in Canada with industry professionals who practice in this area.

All who attended had the opportunity to learn about the transportation engineering and planning industry in Canada, as well as network with industry professionals and other students (or job seekers!) who share their interests. For students, this event was an excellent opportunity to meet potential employers and gain insights into the industry they hope to work in. For industry professionals, it was a great way to reconnect with colleagues and meet people interested in joining the profession.

Many stories about typical jobs and career paths, as well as tips for networking and job searches, were shared throughout the evening among the 30+ attendees. The event was split into two sessions, the first being a conversation about networking in today's environment. The panel discussion format allowed for a lot of time for questions and interactive discussions.

The second session was an informal networking event at a local restaurant where participants used the lessons learned from the panel to catch up with now familiar faces and discuss all things transportation and ITE-related.



Overall, the event was a huge success, marking the first in-person Career Connect with Kate event and the first in-person collaboration between ITE Hamilton and McMaster University since the beginning of COVID-19. The event was well received by students and industry professionals. This is just the beginning of ITE Hamilton section collaborations with ITE Student Chapter: stay tuned for more exciting events to come!

In late May the Hamilton Section will be hosting a breakfast event on the Pier 8 waterfront where Bird Canada will discuss their recent e-scooter roll-out in Hamilton. If the weather cooperates, attendees may also have the opportunity to test ride a scooter around the area which includes Copps Pier Park and the Pier 8 future development area. 🍁



The Toronto Section continues to implement its significant restructuring of the Executive Board and Committee structure. This includes expanding the Activities, Awards, Communications, and Student Engagement Committees. If you are interested in a committee role with ITE Toronto, we encourage you to visit itetoronto.ca/committees or to reach out to an Executive member or Committee Chair. Thank you to all our non-executive members who have volunteered for a role on our committees, including Sean Nix, Mehemed Delibasic, Ariel Yerushalmi, Crystal Wang, Andrew Shan, Lisa Ma, Kathursan Logan, and many Student Chapter leaders.

After our first in-person Christmas Luncheon & AGM in November, the Toronto Section has been hosted several events. On February 22, **Trevor Jenkins** (City of Hamilton) and **James Schofield** (WSP) presented on the 'Hamilton Complete Streets Design Manual', the 2022 ITE Toronto Project of the Year. This event was hosted at WSP's Thornhill Office where many registrants braved the winter storm warning to attend.

ITE Toronto assisted the ITE Canada Training



Committee in delivering a Big Data & Emerging Traffic Technologies Workshop on March 2 at Sheridan College. True North Safety Group presenters **Pedram Izadpanah**, **Alexandre Nolet**, and **Josée Dumont** discussed a variety of topics, including video conflict analysis, connected vehicle data, and crowd-sourced data.

On April 20 we hosted our first Lunch n' Learn of the Year: a presentation on Toronto's New Zoning By-law Parking Requirements by **Michael Hain** (City of Toronto). Michael discussed Toronto's recent changes to the parking regulations which include the removal of most minimum parking requirements, the introduction of parking maximums for most uses, and the introduction of a payment-in-lieu of bicycle parking program.



ITE Toronto also participated in two student-led initiatives: the ITE University of Toronto Student Chapter's Student Industry Mixer and the Elevate ITE event cohosted by the ITE University of Waterloo, York University, and McMaster University Student Chapters. We enjoy being part of these student-led events and are thankful for the industry support for these student groups.

We look forward to seeing many of you at our upcoming events, including our Spring Luncheon.



The National Capital Section kicked off the year by hosting a virtual webinar with a presentation by Russ Watts of Red Deer, Alberta entitled Incorporating Safety in Transportation Impact Assessment (TIA) Guidelines.

On April 25th, we hosted an in-person luncheon on the big screen at the historic Mayfair Theater in Ottawa, attended by 30 people. At the luncheon, we presented the 2023 AM Khan Lifetime Achievement Award to Sharon Lewinson for her outstanding contributions to the transportation industry. Andrew Arseneault from the City of Ottawa and Shawn Smith from WSP Canada presented on lessons learned from recent improvements to the Bank Street Canal Bridge in Ottawa.

On May 13th, our Executive and any others who wish to join us will participate in Cleaning the Capital. We have chosen a local park as our clean-up project. 🇨🇦



John Kingsley, Immediate Past President, opening the event



Shawn Smith and Andrew Arseneault discussing the planning, design and construction of the Bank Street Canal Bridge improvement project



L-R: Shawn Smith (Current National Capital Section President), Sharon Lewinson (2023 Award Recipient), Sean Rathwell (2022 Award Recipient)



Attendees mingling at the historic theatre

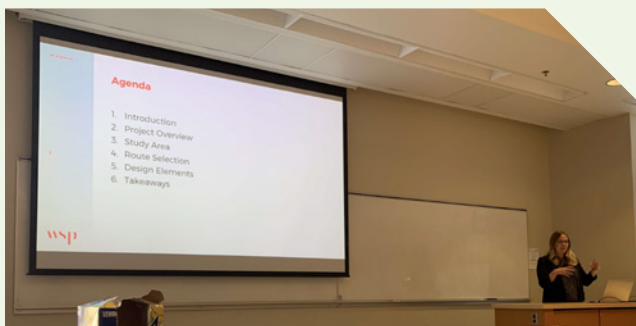
The University of Manitoba's ITE student chapter has conducted several activities since the last update on our Transportation talk. Our events not only include technical events, but also social events as well as community events. The wide variety of our events demonstrate our commitment to providing our members with the best transportation-related experience. A brief summary of events we have conducted since January 2023 is as follows.

Guest Speakers

Since the last update on our events on transportation talk, we invited three guest speakers to deliver presentations on different aspects of transportation engineering.

We invited David Linton, a Policy Analyst with the Manitoba Trucking Association, to give a presentation on "An Industry Perspective on Truck Transportation". This guest lecture was held as a part of a graduate course by Dr. Jonathan Regehr. The presentation took place on Thursday, March 30, 2023.

We invited Jaime Lacoste, a Project Manager in Transportation Planning at WSP to talk about the River/Stradbrook/Wellington Protected Bike Lanes Project including the design process and some of the cycling design elements and considerations. The presentation was on Monday, March 6, 2023, and was followed by a very interesting question and answers period.



On Thursday, March 16, 2023, Craig Rowbotham from KGS Group came to talk to our chapter about the City of Winnipeg's thin Bituminous overlays program including geometric design, asset management, and the construction process.



Community Event

Three U of M ITE Student chapter members gave a presentation about transportation engineering to grade 7 classes at École South Pointe School on February 22nd. We explained the purpose of our student chapter, taught students about the different types of transportation engineering, did a hands-on reaction time activity, explained how train wheels work, and discussed transportation engineering projects in Winnipeg. We made the presentation interactive by asking students simple questions and encouraging participation by handing over small gifts. Both students and our ITE student chapter members had a lot of fun during the event.

Networking Event

We held our winter networking event on February 9th, 2023, at Local Public Eatery with undergraduate students, graduate students, and practicing transportation professionals. This event was a great opportunity for students to connect with local transportation engineers, build an understanding of the transportation industry in Winnipeg, and receive career advice. Many students and transportation engineers attended the event to talk about transportation engineering and much more.



Election

Our annual election was held on Friday, March 31st. The newly elected executive members will assume their duties in September 2023. 🇨🇦



Above: Transportation professionals and students mingle at the networking event.

Right: ITE UManitoba Student Chapter members present about transportation to a grade 7 classroom.



The University of Windsor Student Chapter has been busy this spring with a range of activities. In addition to a field trip to learn about the Gordie Howe International Bridge project, we are also currently operating a Machine Learning workshop series targeting the entire student body in engineering. These initiatives reflect the chapter's commitment to providing its members with practical learning opportunities and promoting innovation in engineering.

1. Field Trip: Windsor-Detroit Bridge Authority (WDBA)

Our student chapter recently had the unique opportunity to visit the local Windsor-Detroit Bridge Authority's (WDBA) community office and learn about the Gordie Howe International Bridge project. The project, which aims to improve transportation infrastructure between Canada and the United States, is one of North America's largest and most complex infrastructure projects. It will include the construction of a six-lane cable-stayed bridge and the construction of new ports of entry and roadways on both sides of the border.

During the visit, our members learned about the innovative technologies implemented in the project, including advanced sensors, intelligent transportation systems, and a multi-lane pathway for pedestrians, cyclists, and e-scooters travelling between Canada and the United States. The

sensors and intelligent transportation systems will provide real-time data on traffic flow and help optimize the bridge's performance and safety. Additionally, the multi-lane pathway will improve the connectivity between the two countries and promote sustainable transportation options. The project also utilizes high-performance concrete and steel, further enhancing the bridge's durability and reducing maintenance costs over its lifespan.

One of the highlights of the visit was the opportunity to hear from Peibo Zhao, a UWindsor alumnus and transportation engineer at WDBA. Peibo shared valuable insights regarding his professional experience and his role in the Gordie Howe International Bridge project. He spoke about the challenges and rewards of working on such a complex project and offered advice for students interested in pursuing a career in transportation engineering.

As a gesture of appreciation and gratitude, the ITE Canada Windsor Chapter gave Starbucks gift cards to the presenters from WDBA. While the gift was small, the presenters were delighted and our student chapter members were pleased to show our appreciation for their time and knowledge. It was a heartwarming moment highlighting the importance of building strong relationships and fostering a culture of appreciation and respect in the engineering community.



The visit was a valuable learning experience for our student chapter, providing members with a unique opportunity better to understand the field and the project's significance. It also provided an opportunity to network with professionals in the industry and learn about potential career paths.


2. Machine Learning Workshop

The Windsor Student Chapter in Engineering recently started the 1st session of a 10-class machine learning workshop series led by Dr. Umair Durrani, an esteemed alumnus of the University of Windsor. The workshop series will cover various topics, including installing Anaconda and Python packages, KNN, Decision Trees, Random Forest, and handling missing data.

The workshop series was so popular that the ITE Canada Windsor chapter had to change the format from in-person training for 10 participants to an online workshop for 35 participants. Even with the increased capacity, all 35 tickets were sold out within just one hour of the announcement. The ITE Canada Windsor chapter reported the increased attendance to the Dean of Engineering and all three department heads: Civil and Environmental Engineering (CEE), Mechanical, Automotive & Materials Engineering (MAME), and Electrical and Computer Engineering (ECE). The Transportation Department, which led the workshop series, was proud to be able to offer machine-learning training to the entire engineering student body. The overwhelming response to the workshop series underscores the importance of providing students with practical learning opportunities in emerging fields such as machine learning.

Throughout the workshop series, students will gain practical experience with machine learning techniques and apply their skills to real-world problems. Dr. Durrani's expertise in the field and the practical, interactive nature of the training were well-received by attendees.

The success of the machine learning workshop series reflects the Windsor Student Chapter in Engineering's commitment to providing its members with valuable learning opportunities and promoting innovation in the field of engineering.

Stay tuned for more upcoming workshops and events! 



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Dr. Umair Durrani

4th-year graduate student at the Civil and Environmental Engineering Department at the University of Windsor. Umair studies driver behaviour and develops models of road users for traffic flow modeling at the Transportation Systems Innovation (TSI) Lab.

Umair is also an instructor of data analytics at Zehnerman School of IT, St. Clair College where he teaches statistics, data visualization, and machine learning using Python, R, Tableau, Excel, etc. Umair also supervises capstone projects of college students from diverse backgrounds.

CONTACT >>>

Hasnang Ali, chapter president
(hasnangali@uwo.ca)

Shouvik Bhattacharya, chapter vice president
(shouvikb@uwo.ca)

The UW ITE Student Chapter was restarted in early 2022 after a period of hiatus and has been quite busy in the previous year. Our events ranged from social events to technical tours and academic/industry seminars. Our events and activities demonstrate the executive team's dedication to providing students at the University of Waterloo with the best experience.

TRB Conference

Chapter Advisor Professor Fu Liping, Treasurer Lucas Sobreira, and Secretary Jeffrey Dai kicked off the year by attending the 2023 TRB conference in January 2023. TRB provided a great opportunity for networking with other members in academia as well as many industry partners at the exhibition.

Professor Fu gave a presentation and presented a poster titled "A Joint Confidence Region Approach to Ranking Hotspot Locations Considering Uncertainty in the Expected Risk Estimates" on behalf of President Reza Aminghafouri who was unable to attend. The work developed by Lucas explores the spatial transferability of Direct-Demand (DD) models to other jurisdictions. DD models are used for estimating pedestrian exposure at signalized intersections as a function of land use and socioeconomic attributes. The study shows that there is potential for the spatial transferability of DD models, which may help jurisdictions that lack pedestrian data for jurisdiction-wide volume estimations. The work is titled "Comparing Direct Demand Models for Estimating Pedestrian Volumes at Intersections and Their Spatial Transferability to Other Jurisdictions".

ArcGIS Tutorial

On the training side, the student chapter organized an ArcGIS tutorial on February 10, 2023. Master of Environment student Jason



Skidmore held a one-hour tutorial on ArcGIS. This event was attended by 32 students across many faculties and was comprised of an introduction to the software, its applications in transportation engineering and an exercise for students to develop a model with ArcGIS Pro. Numerous ITE Waterloo Chapter leadership team members were present to assist Jason in helping students learn ArcGIS and successfully complete the exercise. This event resulted in success with students asking for further information about ArcGIS and sparked further interest from students for future events. .

Industry Talk Series

The Women in Transportation Series aims at inviting Women in Transportation International to Waterloo to host a seminar on their work. The student chapter was able to host a seminar on November 25, 2022, with Maria Doyle from Metrolinx, who discussed the interdisciplinary relationships on complex projects, such as the Scarborough Subway extension and the Yonge North Subway Extension.

On March 10, Batool Husnain a Senior Associate for Infrastructure and capital projects at Deloitte presented to the student chapter about the role of consultants in the transportation industry. Batool has spent 5 years as a project manager and engineer working on large-scale infrastructure projects with cross-functional teams on multi-million and billion-dollar systems.

The third speaker for this series was Heather Aitken, P.Eng. who spoke on her experiences as a mechanical engineer working in transportation. She is currently a Senior Engineer with the Center for Net-Zero Transformation in Rail and Transit at Deutschebahn Engineering, Consulting, & Operations North America. Aitken gave advice on how to succeed in the workplace even if the field that you are working in is not the one you studied at school.

The UW Student Chapter was privileged to have Ben Allen, alumni of the University to come speak to students about his work as a Junior Transportation Planner at Parsons located in Ottawa. Allen introduced his projects to the students and described the daily tasks of a transportation planner. Being a former master's student at the University, he was also able to share his experiences in both academic and professional life and that questions regarding the benefits of a graduate degree.

Elevate ITE

Elevate ITE was hosted by the University of Waterloo ITE Student Chapter and a joint event with the York and McMaster Student Chapters. This highly successful event included members from ITE and ITE Canada. Speakers included: Rosana Correa, Edward Soldo, Pedram Izadpanah, Julia Salvini, Erik Nevland, and Jeff Jongsma. We were fortunate to have them share their wisdom and knowledge with the student transportation community. This event saw over 80 attendees from the three universities who participated in a day-long event consisting of games, icebreaker events, a campus tour, and plenty of networking opportunities. This successful collaboration between multiple student chapters demonstrates the potential for future collaborative events!

Upcoming Events

In the near future, we have a couple of exciting events to look forward to. The ITE Canada/CARSP 2023 Joint Conference is just around the corner, and it promises to be a fantastic opportunity for our members to showcase their skills in the Traffic Bowl competition, as well as present their latest research findings. Additionally, we are planning our first picnic and BBQ event this summer. Follow us on social media (linktr.ee/uwite) to keep updated about our future events! 🇨🇦



We're thrilled to recount this academic year featuring a plethora of events at McMaster University and reveal what lies ahead. Feel free to participate in our upcoming events, reach out and join our growing community at mcmasteru@itecanada.org. We can also be reached at the following socials at itemcmaster.ca.

Highlights from this Term include a variety of inclusive and diverse events, offered in-person and hybrid, such as seminars, social gatherings, design challenges, and collaborating with our ITE chapters! Among the notable events were:

McMasterU Civil Engineering (CES) Clubs Fest and November Fall Preview Open House

CES Clubs Fest (September 2022) and the McMaster Fall Preview (November 2022) consist of a full week of events to welcome students back after the summer break, as well as welcome new students to campus, respectively. Given the McMaster Engineering 1st year curriculum, we strive to create a strong community with the upcoming classes. We enjoyed engaging with current or potential members.



Metrolinx Seminar

Students had the opportunity to learn about new transit connections in the Greater Toronto & Hamilton Area, such as the Hurontario and Hamilton LRTs. We had four professionals from both projects who gave students the opportunity to understand the behind the scenes of being an transportation engineer as well as gain valuable career advice. Students had the opportunity to explore the intricacies of these significant projects and engage in insightful discussions with various professionals present at the event.

Winter Seminars: Crozier, Arup Consultants Webinar and HDR

Students had the opportunity to learn about the multiple streams and works of transportation in a Webinar featuring consultants from Crozier and Arup Consultants, as well as an in-person talk from Jamie Black from HDR/WTS. Students had the opportunity to explore the intricacies of the work of industry professionals and engage in insightful discussions with various professionals present at the event.



Hamilton Traffic Operations Center (TOC) Field Trip

We were also honored to be able to visit the Hamilton TOC to see all the intricacies behind traffic signal design, planning, as well as the many teams required to make traffic within the city flow smoothly. Our team was left in awe by the ginormous sign shop and digital control room and is looking forward to many more field trips!



Graduate Student Seminar Night

Students had the opportunity to learn about the many ongoing research projects at McMasterU by engaging with Masters and PhD students in the department of Civil Engineering and Geography. We had six professionals from both departments who gave students the opportunity to understand the behind the scenes of being a grad student as well as gain valuable career advice. Students had the opportunity to explore the intricacies of these significant projects and engage in insightful discussions.



NEM Transportation Challenge 2023

Thank you to National Engineering Month (NEM) Ontario, and Ontario Society of Professional Engineers (OSPEU) for helping ITE McMaster host such a fun event for those interested in arcGIS, OpenData Hamilton, and finding solutions to today's transportation problems. Congratulations to the winners of the Transportation Engineering Consulting Challenge: 1st - Zoe Meth, 2nd - Haifaa Chutoo and 3rd - Dominic Mothe. McMaster was also proud to finish in third place for our chapter's efforts in planning and event execution!

Career Connect with Kate

ITE McMaster ITE hosted a live Career Connect, featuring job seekers and industry professionals from ITE Hamilton and our own ITE McMaster Chapter.

We enjoyed productive conversations about networking in today's job landscape.



Elevate ITE

A collaboration with Waterloo and York student chapters that allowed members to network and interact with ITE Canada and ITE International executive members. A special thanks to our speakers and to ITE UWaterloo for being amazing hosts and ITE YorkU for their efforts in this successful event.

Upcoming events

Upcoming events include the ITE Canada/CARSP 2023 Joint Conference, where our members will present and compete in the Traffic Bowl. We're also excited for our end of year social mixer, elections, and recognition of efforts made by members, sponsors, professors, and partners. 🍁

We're thrilled to recount this Term events at York University and reveal what lies ahead. A special thank you goes out to our annual sponsors: Miovision (Platinum), Esri Canada (Gold), and AOLS, Pantheon Prototyping, and George Weston Ltd Centre for Sustainable Supply Chains (Silver). To sponsor us and participate in our upcoming events, reach out and join our growing community at yorku@itecanada.org.

Highlights from this Term include a variety of in-person events such as seminars, social gatherings, and the unforgettable Hack ITE 2023 hackathon. Among the notable events were:

Frost Week Clubs' Fair

Frost Week consists of a full week of events to welcome students back after the holidays, as well as welcome new students to campus. We enjoyed engaging with potential members and spreading awareness about transportation's significance in our lives.

YorkU vs TMU Basketball Game



We had a great time supporting our team and meeting the inspiring community activist, Winston LaRose, aka Mr. Jane and Finch, a community activist who has been an inspiration to the Toronto community. We were honored to see his recognition by York University during the game and capture the moment.

Painting and Games Night

Our members enjoyed a fun-filled evening of artistic expression and friendly competition.



Morning Star Middle School Visit

We were delighted to share our passion for transportation engineering with Mrs. Vrancart's class and discuss important issues like bus overcrowding in Toronto. We had a blast playing Kahoot and learning how to design bus routes with the kids. Their enthusiasm and creativity were truly inspiring! And of course, we couldn't leave without sharing some York University and ITE York U swag with them.



Metrolinx Seminar

Students had the opportunity to learn about new transit connections in the Greater Toronto & Hamilton Area, such as the Hurontario and Finch West LRTs. Students had the opportunity to explore the intricacies of this significant project and engage in insightful discussions with various professionals present at the event.

ITE Canada President at York University

We were also honored to host Ryan Vanderputten, ITE Canada President, and show off our thriving community and facilities. We recognized Ryan with a 3D-printed plaque, acknowledging his valuable contributions to our student chapter.



Lassonde Tabling Session

Our Lassonde Tabling session allowed us to connect with more students and showcase our merchandise.

Pub Night with LES

Our first-ever Pub Night, co-hosted with the Lassonde Engineering Society (LES), saw over 60 members come together for a fun-filled evening featuring darts, nachos, and beer - all while promoting road safety with our branded shot glasses.



Hack ITE 2023

It was a resounding success, centered on the theme of Smart Mobility. Participants from various universities such as York University, Seneca College, University of Alberta, University of Toronto and Toronto Metropolitan University from different programs such as Civil Engineering, Mechanical Engineering, Finance, Computer Science, Software Engineering, Electrical Engineering and Space Engineering, collaborated to address challenges facing Canadian cities. We were proud to recognize four exceptional teams for their outstanding work.



Elevate ITE

A collaboration with Waterloo and McMaster student chapters, allowed members to network and interact with ITE Canada and ITE International executive members. A special thanks to our speakers and fellow ITE student chapters for their support!



Upcoming events

Upcoming events include the ITE Canada/CARSP 2023 Joint Conference, where our members will present and compete in the Traffic Bowl. We're also excited for our first camping trip and the ITE Formal, a celebration of our achievements, elections, and recognition of efforts made by members, sponsors, professors, and partners.

Merchandise

Don't forget to check out our fabulous merchandise, including water bottles, mugs, t-shirts, pens, sweaters, bags, patches, and fanny packs, available on our website at ite.club.yorku.ca



As our tenure comes to an end, we're grateful for the opportunity to serve this amazing community. We look forward to the next Transportation Talk edition and the continued growth of ITE and our community. Thank you for your support during the 2022-2023 period! 🇨🇦

The ITE Toronto Metropolitan University (formerly Ryerson University) Student Chapter has been active in promoting and advancing transportation research and education at the university. They have been hosting various events and seminars, including an upcoming Transportation Talk event, where alumni, faculty members, and industry professionals will discuss their experiences and knowledge in the transportation industry. This event provides an excellent opportunity for students to learn from experts in the field and network with professionals.

In addition, Toronto Metropolitan University's (TMU) transportation researchers have been actively involved in several multidisciplinary transportation research projects. The Laboratory of Innovations in Transportation (LiTrans) is one of the leading labs working on emerging issues in transportation systems, including disruptive transportation technologies and services, complete streets, cyber-physical systems, pedestrian dynamics, resilience, and climate change. The TMU researchers are also involved in government and industry projects, such as the Smart Freight Centre (SFC), which brings together a network of academic, government, and private institutes in the GTHA.

The ITE chapter has also been involved in hosting various workshops, such as the Data Analysis and Visualization with Python workshop, which provided students with an opportunity to gain and develop their programming skills in the Python language.

For example, the Transportation Talk event organized by the ITE TMU Student Chapter in November 2022 brought together alumni, faculty members, and industry professionals working in the transportation industry. The panel members, including Dr. Bilal Farooq, an Associate Professor at TMU and Faculty Member, discussed their experiences and insights on various transportation topics, followed by a question and answer session.

The ITE TMU Student Chapter also hosts monthly seminars on transportation topics. These seminars are typically presented by experts from academia, industry, or government agencies, and cover a range of transportation topics, such as connected and autonomous vehicles, transportation planning, and active transportation.

Overall, the ITE Toronto Metropolitan University Student Chapter has been actively involved in promoting transportation research and education, providing networking opportunities for students and professionals, and fostering collaboration among various disciplines and stakeholders in the transportation industry. 

The ITE University of New Brunswick Student Chapter remained active since the last quarterly update. The team has continued their efforts in hosting and attending a variety of presentations and technical tours, allowing members continued growth and development in the transportation engineering industry.

On February 23rd, Katie Hazzard M.Sc.E., P.Eng., a Traffic Engineer at EXP Consulting and a past ITE UNB Student Chapter president (2014-2016), joined us to discuss the process of traffic analysis and simulation involved with a new roundabout installed at the intersection of Route 105 and Brookside Drive in Fredericton, NB. The presentation allowed students to gain an understanding of the process that goes into the design of a complex intersection and how multiple stakeholders must work together to complete a project. This presentation also gave students insight into roundabout design and how geometry of roundabouts can be influenced by in-field constraints.




Throughout the Winter 2023 academic semester, members of the ITE UNB Student Chapter participated in the ITS-STI Canada award-winning

UNB Transportation Seminar, a UNB Transportation Group program hosting a series of seminars addressing current transportation issues. Weekly seminars touched on a variety of transportation topics, including: traffic calming measures, roundabout designs, transportation equity, Miovision technology, and more. On March 23rd, the program offered a technical tour of the Port of Saint John, learning the processes of the port and a recent construction project. As part of the trip, ITE UNB members were joined by MBA students from the UNBSJ.



On April 4th, ITE UNB members participated in the ITE Atlantic Canada Early Spring Virtual Meeting. The event shined the spotlight on two universities in Atlantic Canada with significant transportation engineering and planning programs (UNB and Dalhousie University). The programs, faculty, student research, and more were highlighted by both presenters.

Upcoming events for the ITE University of New Brunswick Student Chapter includes participation in the ITE Canada Traffic Bowl coming up in June 2023. Lastly, congratulations to members Barry Riordon and Zahra Sedaghat for defending their master's research projects in April 2023, to all undergraduate members graduating in May 2023, and to graduate members, Riley Taweel and Kristen Burns, graduating in May 2023. 

ITE Canada extends a warm welcome to our newest members!

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 Mrs. Rulla Al-Haideri, Carleton University, Ottawa, ON
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