VANCOUVER 2020 CALL FOR ABSTRACTS & SPONSORS

NEW TRAVEL BURSARY FOR WOMEN

TAC TIDBITS FROM HALIFAX

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Canada's Community of Transportation Professionals

transportation TALK

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

Community Solutions for Rural Mobility

Trevor Hanson explores how volunteer driver programs in New Brunswick are providing lessons in rural transportation planning for older adults and non-drivers

Stories from the Trail

Kate Whitfield and ***Ezra Lipton*** share the story of the Frontenac K&P Trail and offer resources for active transportation planning in small and rural communities

We have the worst roads in *<insert location>*

Coady Cameron takes us inside how low cost pavement data collection can support better decision making in small and rural communities

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CITE news & business

regular columns

Did you know? CITE has a new mailing address

100 Metcalfe Street, Suite 200 • Ottawa, ON • K1P 5M1

president's ponderings

JULIA SALVINI, P.Eng.
Canadian District President
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There is something special about fall. With the start of the school year and the change in the weather, it feels to me like a new beginning. For CITE, we have a fantastic year ahead!

In October, the Executive Committee met with the CITE/QUAD Joint 2020 Annual Conference Local Arrangements Committee along with our Technical Liaison Committee in Vancouver. This was my first time visiting Vancouver in the fall and I now understand about the rain—wow, did we get wet! Despite the rain, Vancouver is a beautiful city with so many interesting things to see and do. Conference planning is well underway and I hope many of you will join us next May to explore the area and hear about what is happening in our profession across Canada with some welcome insight from the US. Remember the Call for Abstracts closes on Thursday, October 31.

During our meetings in Vancouver, we started a process to update our CITE Strategic Plan. The Executive Committee, along with a few guests invited to fill out our discussions, spent time exploring areas we should focus on and reflecting on those things that are important to CITE. Take a look at a few snaps from the weekend below. A special thanks to Abby Scaletta, Russell Brownlee, and Tanya Davis for their time and their insight. I was reminded of how passionate our members are about their role in building communities and how generous they are with their time and their expertise. In February, we will continue those discussions with the CITE Board and look forward to the perspective and light that they will bring to our new Strategic Plan.

This summer, I had the opportunity to join Jen Malzer in representing the Canadian District at the ITE International Annual Meeting in Austin, Texas. Austin is a vibrant, growing city with many, many e-scooters! Here are a few takeaways…

- Our Traffic Bowl team from the University of Alberta represented us well with Canadian swag and confidence
- Mayor Steve Adler encouraged attendees to "be the expert in your community"
- With MaaS coming to your community, understand the problem you are trying to solve and what your role is as a transportation professional
- Health professionals encouraged us to include the cost of first responders in our collision costs
- Partnerships, partnerships, partnerships

This issue of *Transportation Talk* has a focus on rural and smaller communities. You will find inspiration from colleagues across the country who are looking at transportation challenges with a small town lens. My own work in rural communities has taught me that we need to listen very carefully to more fully understand the problems we are presented with before seeking solutions.

CITE has recently committed funding to a Road Safety Webinar Series project that has been identified and scoped by TAC's Road Safety Standing Committee (RSSC). Pedram Izadpanah, our CITE Appointee to RSSC, and several other CITE members had significant input into the project development and we now look forward to seeing the series developed and rolled out with our TAC partners. We will continue to share updates as the series goes through its development.

Finally, I want to share with you a new initiative from CITE to support women in transportation engineering. Starting next year, a travel bursary will be available in memory of Jenn Voss, wife and life partner of former CITE President Jan Voss. I did not have the privilege of meeting Jenn, but the stories I've heard about her tell me that we would have been fast friends. Jenn and Jan Voss met in engineering school and, throughout her career as an engineer, Jenn encountered many barriers to her professional development. Jenn passed away in 2016 and, in her honour, Jan has created a bursary to support five women to travel to the CITE Annual Conference each year. If you are a woman in the early stages of your engineering career and would like to present at the conference but are concerned about the cost of travel, please reconsider and submit an abstract. There are additional details below and more information to follow, but also feel free to reach out to me with any questions about this new opportunity.

I hope you are able to enjoy all that autumn in this great country offers. Keep in touch!

Julia Salvini, P.Eng.
Canadian District President

THE JENN AND JAN VOSS TRAVEL BURSARY FOR WOMEN IN TRANSPORTATION ENGINEERING

New travel support for women in transportation

CITE is pleased to announce a new annual travel bursary starting in 2020 for five candidates at $1000 per person to provide additional funding support for women in transportation engineering. This bursary is intended to encourage women who are in the early stages of their career and no longer in school to actively participate at CITE conferences. The annual $5000 travel bursary is being funded by the estate of Jenn and Jan Voss in memory of Jenn Voss, P.Eng., who lost her battle with cancer at the age of 52. Jenn worked in Ontario and BC for both the public and private sectors and, over her 28 year career, encountered various barriers and inequities which, in her view, made career advancement for female engineers more challenging than for men. The goal of this new annual travel bursary is to help bridge the gender gap at future CITE conferences. Eligible candidates for this annual travel bursary will include but not be limited to CITE conference speakers whose abstracts have been accepted, those who have never had the opportunity to attend a CITE conference before, transportation engineers who may be on maternity leave or unemployed, and elected officials at the Section level in Canada. Stay tuned for more details on how to apply!

Jenn & Jan Voss in April 2015 at the Consulting Engineers of BC (CEBC) banquet

from the district director

JEN MALZER, M.Sc., P.Eng.
Canadian District Director
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Dear members,

I would imagine at this time of year that you'll start hearing the words "winter is coming," though in my case here in Calgary, it's already visited a couple of times! The start of snow feels a bit like a test: at the household level and definitely at the city level, it's a chance to see how our designs perform and how our staff have prepared. Fortunately, Calgary's crews were up to the task of greeting 25+ cm in their first go! The snow did expose that some sidewalk types like those directly abutting curbs make it easy for windrows to form and limit sidewalk accessibility. It's a good reminder that maintenance starts in the planning stage.

Not so long ago, I was enjoying my first trip to Austin, Texas to attend the sweltering Joint ITE International and Texas District Annual Meeting and Exhibition. By all accounts, it was fabulous and even managed to surpass registration from CITE's Joint ITE conference in Toronto—ITE's largest conference in 15 years. I took note of many welcoming aspects of the conference to help attendees network and find ways to be involved with ITE. A couple of these sessions included a first timers' welcome reception just ahead of the start of the conference as well as a family welcome room full of games and STEM activities.

This is the first year in my term as your representative at the ITE Annual Meeting and I really enjoyed the opportunity to meet the voices at the end of monthly conference calls. The Women of ITE Sub-Committee organized a first programmed forum on Sunday afternoon which featured an escape room activity that required solving inclusion puzzles and a panel focused on being an ally to oneself, to colleagues in the workforce, and to the cities we serve. The materials were successful and are now available to be borrowed by other groups. If you are interested in the escape room puzzles, please let me know; they're digital and very shareable.

I am proud to share that the contributions of many Canadians were acknowledged at the awards ceremonies in Austin: Rebecca Peterniak as our District Rising star, Alf Guebert as TPCB Organizational Director for Canada, and Ryan Martinson as Chair of the Sustainability Standing Committee. At the LeadershipITE graduation, we also saw three CITE members cross the stage! Congratulations to Meera Kopp, Mars Otten-Andrew, and Madhuri Seera. Thank you to all our Canadians for connecting and supporting one another. It's through this approach that we truly make our efforts count and influence positive change in the transportation profession.

With summer over, things are again starting to be busy for ITE. We have just finalized new operating CITE bylaws that I will share with IBOD for approval at our fall meetings in Washington, D.C. I am also pleased to be supporting the development of both CITE's and ITE's next strategic plans. It is a great opportunity that they are running in parallel and both aiming to be truly progressive and centred around strengthening a diverse membership supported by strong technical products and networking.

I look forward to hearing from you and your ideas for ITE and am also counting down the days until ITE's next conference in New Orleans in July 2020!

Best,

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

Canadians at ITE Austin 2019

Left: Ryan Martinson, shown here alongside ITE President Bruce Belmore and ITE Vice President Randy McCourt, was recognized for his outstanding service as Chair of the Sustainability Standing Committee.
Right: Alf Guebert was recognized for his work on the Transportation Professional Certification Board as Organizational Director for Canada.

Our District was proudly represented at the International Traffic Bowl by the University of Alberta team—Bryan Tran, Cai Lin Yang, and Connor Bayne—and enthusiastically supported by Canadian members in Austin.

Right: Women of ITE forum participants
Bottom right: Congratulations to all LeadershipITE graduates, including Meera Kopp and Madhuri Seera of the City of Calgary and Mars Otten-Andrew of WSP.
Below: ITE President and Canadian Bruce Belmore addresses the audience

VANCOUVER 2020

May 24–27

ite

RESILIENT CITIES

Planning for an Uncertain Future

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CITE/QUAD Joint 2020 Annual Conference

The Greater Vancouver Section welcomes you to attend the CITE/QUAD Joint 2020 Annual Conference in beautiful Vancouver, British Columbia. The QUAD Conference is an annual transportation conference held in the Pacific Northwest for transportation professionals from British Columbia, Washington, Oregon and beyond. Bringing together CITE and QUAD offers our members a chance to connect with the broader Pacific Northwest transportation community.

Our venue and official conference hotel is the **Sheraton Wall Centre**, located in the heart of downtown Vancouver. This will serve as the perfect hub to explore the evolving transportation networks of one of Canada's urban hubs and offers great sights for social event and technical tours.

Notably, the conference banquet will be a quintessential Vancouver experience: a three-hour sunset dinner cruise around the inner harbour, English Bay, and False Creek. This will be a great event to bring a partner along to!

CALL FOR ABSTRACTS DUE OCTOBER 31

CITE invites all interested transportation professionals and students to help shape CITE/QUAD 2020! The conference theme – *Resilient Cities: Planning for an Uncertain Future* – will showcase unique responses to the challenges of urban growth, climate change, technological development, and access to mobility by all groups. In facing these challenges, the collective knowledge and experience of the ITE community will enable us to build on successes, learn from experiences, and tailor the analysis, design, and implementation of transportation systems to the specific communities and users impacted. A variety of topics and presentation formats are encouraged. See the complete Call for Abstracts here.

Submit your ideas at conference.cite7.org

INVITING SPONSORS & EXHIBITORS

Conference sponsorship and exhibition offers you a unique platform to connect with leading decision-makers in the industry and practicing transportation professionals. With options ranging from high visibility Platinum to Bronze sponsorship, you're sure to find an opportunity that connects your business goals to CITE/QUAD 2020.

Become a sponsor or exhibitor

COMMUNITY SOLUTIONS FOR RURAL MOBILITY

How volunteer driver programs in New Brunswick are providing lessons in rural transportation planning for older adults and non-drivers

BY TREVOR HANSON
UNIVERSITY OF NEW BRUNSWICK

While Canada's urban population is growing, there are millions of Canadians who live in rural communities throughout the country, most who rely on the personal automobile for their mobility. For some, the mobility offered by the personal automobile is tenuous; the health effects of aging can make driving difficult or impossible over time and the cost of automobile ownership can form one of the largest household expenses. Selling one's home to move to larger urban areas with other mobility solutions is an option for some but, for others, the higher cost of urban living may not be feasible. Family and friends tend to be the first choice for mobility by non-driving older adults before any formalized alternative. However, as the impacts of a rapidly aging population, outmigration of youth, smaller family sizes, and centralization of health and commercial facilities in urban areas begin to be felt in rural areas, it is unclear whether informal approaches will satisfy mobility needs. It is also unclear how more formalized approaches (such as rural transit) will be assessed, initiated, and maintained in areas that fall outside of a jurisdictional framework for planning and service funding.

lessons in rural mobility

CREDIT: RURAL RIDES

Volunteer programs in New Brunswick have put a lot of thought into branding that reflects the community they serve and their operational goals. Some provide signs that volunteers can affix to their vehicles such as this one from Rural Rides.

There is a type of transportation initiative underway in several rural New Brunswick regions that offers a creative, community-based solution to rural mobility needs for rural older adults (and non-drivers), while offering a more "formalized" approach to ensuring service provision: Volunteer Driver Programs (VDP). While VDPs are not a new concept, the consistent and coordinated approach among independent groups in New Brunswick represents a novel approach to address the rural mobility issue. VDPs in New Brunswick are member-based programs that rely on a volunteer driver using their own vehicle (paid mileage) deployed through a central dispatcher. These programs, typically organized as a charity, support the transportation of hundreds of New Brunswickers in areas that typically have no transit and fall outside of any transportation planning service area. The fact that these programs employ volunteers and are community-based enables a level of personalization to operations that make these programs replicate the family and friends transportation experience, who tend to be the first choice for people who do not drive themselves. They also offer service at a lower cost than what would be expected through a paid driver service or rural transit, and their non-for-profit incorporation means they are not limited to jurisdictional service areas. All these attributes make VDPs an attractive option for the rural transportation toolkit. The challenge is that there is very little technical guidance to support VDP development or replication or for a transportation planner to evaluate VDPs as an effective rural transportation solution compared to other options. I believe there are many lessons that the transportation engineering profession can learn from the development of VDPs in New Brunswick; lessons that may help inform the provision of services for non-drivers—and older adults, in particular—in rural areas.

BACKGROUND

Several years ago, I was introduced to a VDP called the Charlotte Dial-a-Ride which had been operating on a regional and rural basis in Charlotte County, New Brunswick using volunteer vehicles, paid mileage, and a central dispatch. In my opinion, it represented the type of model that could be effective in other areas of New Brunswick to replicate the transportation provided to older adults by family and friends and help facilitate the transition of "driver to passenger" (words of Katherine Freund, founder of ITN America, a national VDP for older adults in the U.S.). While a promising model, initial efforts to replicate the program elsewhere were unsuccessful. In fact, one program following the Charlotte Dial-a-Ride's exact business plan was developed, yet ultimately failed after only a few months of operation. In my study of the failed operation, there were several lessons learned that would not be self-evident from a study of successful operations. Most importantly, slow and steady growth was key (in particular for mustering volunteers), rather than trying to serve a broad geographic area right away. In a feasibility study I completed later for a prospective new rural program, I found that there were only case studies and best practices to support development; there was no guidance for estimating demand for service or supply of volunteers. The type of transportation planning information that would be available to assist with estimating transit use or planning for new roads did not exist for VDPs.

RESEARCH QUESTIONS

Since that time, and with support that includes funding from New Brunswick's Economic and Social Inclusion Corporation, several new VDPs have developed

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throughout the province. These groups are independently organized, though operate cooperatively, and each have their own niche for addressing mobility needs in their community, whether it is for health care, life maintenance, work/education, or for quality of life. While these programs are success stories, not all areas of New Brunswick are served by a VDP. This leads to the questions of what attributes makes a "successful" VDP and whether it is possible to quantify the lessons of what successful VDPs do in a way that could permit them to be evaluated as a transportation option in a community. During my involvement with the ABE60 Accessible Transportation and Mobility Committee at the Transportation Research Board (TRB), I learned that "understanding success factors" of VDP was a more broadly recognized research need and I have since contributed to the redevelopment of this research needs statement for ABE60.

RESULTS OF OUR RESEARCH

Enabled by a Discovery Grant from the Natural Sciences and Engineering Research Council of Canada (NSERC), my team and I have spent the last four years working with VDP in New Brunswick to gain a better understanding of various aspects of their operations. Our goal is that the research be relevant and useful in the day-to-day and long-term operations of VDPs while also using the lessons from our studies to answer bigger questions about rural mobility. We worked with VDPs to learn about their data reporting, then helped them develop methods for common data reporting of trips provided, trip purposes, distance travelled, and number of passengers, among other attributes. We conducted an analysis of one year of travel data from seven VDP (a majority of operators we were aware of) to identify engineering and planning metrics which could be used to help quantify demand and the scale of their operations, including time of day travel, seasonality, trip/stop purposes and frequency, and volunteer contributions. We were able to determine some operational metrics, including how to organize groups by size (small = 50 or fewer riders, medium = 51 to 100 riders, large = 101 to 300 riders), total number of riders in the sample of seven groups (760), number of paid staff (9), and total volunteers (129). I estimate that if all VDPs in New Brunswick were accounted for, overall membership would be in the order of magnitude of around 1000 for a province with a population of 750,000, though most VDPs are headquartered and serve in rural areas which account for about 50% of the population.

We conducted surveys of seven VDP managers to pilot a method for measuring "success" called a "Maturity Model" which, for the first time, allowed us to identify not only what practices VDPs consider key, but the level at which they are practiced and whether these levels are connected with VDP attributes, such as ridership. Given that volunteer drivers are instrumental to the delivery of this transportation service, we shifted our attention to better understanding their contribution. We recently completed a survey of 37 volunteer drivers who reported the tasks they provided for their clients beyond driving based upon trip purpose (such as health). We found in that sample that drivers provided assistance in 68% of stops. Any service that is looking to meet the needs of the population who rely on VDP will need to account for the key role the driver plays; this has particular implications for planning for autonomous vehicles, which are often touted as a solution for non-driving older adults. Following our analysis, we prepare briefs of the results which we send to the operators so they can incorporate the results into their work.

CREDIT: CHARLOTTE DIAL-A-RIDE

Volunteer driver programs such as the Charlotte Dial-A-Ride help in many rural communities in New Brunswick.

LESSONS FOR TRANSPORTATION PLANNERS

Transportation planners who look to the *ITE Transportation Planning Handbook (4th edition)* will find some guidance in Chapter 20 (Rural Community and Tribal Nation Planning) with respect to gaining a better understanding of rural transportation needs and delivering rural transportation services. The Handbook suggests gaining additional information on existing transportation assets (e.g., vans) and identifying community service agencies that "may already be in place" for delivering services that could be called upon to oversee dispatch of delivery of transit programs (p. 956). The challenge in some rural communities is that they may fall outside transportation service planning areas, meaning there is no routine monitoring of transportation service needs and community service agencies may not have a transportation function. VDPs in our research have often been independent entities rather than extensions of other charities; therefore, in addition to the advice in the Handbook, transportation planners (and community leaders) may want to consider the additional lessons we have learned through the course of our research.

Lesson #1: Solutions for rural older adult mobility do not always have to be about the "bus"

In my discussions with community officials in New Brunswick about rural transportation issues, I often hear people equating older adult mobility needs with needing a "bus", though a bus may only serve a subset of needs. The suggestion to collect information on existing transportation assets (e.g., vans or small busses) and community organizations within the area is good practice. At times I have seen communities and community organizations begin with the vehicle solution (e.g., "We have a bus") and then try to figure out how to make the mobility issues in the community fit the solution rather than the other way around. Existing personal automobiles and motivated citizenry may be overlooked as an "asset" if only considering existing organized transportation solutions. A VDP could be an idea that a transportation planner proposes in a situation where there is a demonstrated interest to replicate the mobility people have with their own automobile, yet there is no critical mass for taxi service or to sustain a transit service. We have examples of VDPs with a budget of only a few thousand dollars and only a few members initially. This may be a preferable option to building ridership over time than establishing a fixed route service. Liability issues tend to be the most commonly expressed concern, but it seems most questions can be resolved through discussions with insurance companies. VDPs typically require drivers to have some supplemental amount of liability coverage and often cover any additional premium cost. They have also developed operational best practices (e.g., requiring criminal record checks).

Lesson #2: Ridership, population, and travel pattern data are often not readily available or useful in many rural communities. Our VDPs research may be able to help.

In my New Brunswick experience, community leaders will often be aware of a "need" for transportation for older adults who no longer drive but have little guidance on the scale or scope with respect to the need. Public data sources such as the Census have some origin/destination data through the Journey to Work data, but these data have little to no value for planning for a retired or unemployed population, for example. The Canadian Community Health Survey (CCHS) tends to formulate transportation questions in terms of Likert scales (e.g., Do you have someone to take you to the Doctor "All of the time"?) which provide no concrete trip rates that can be used as a basis for travel demand estimates for rural older adults. Communities may conduct their own data collection exercises, but they may not have the capacity or resourcing to conduct surveys at the scope and rigor to ensure the results are reliable. The data issue may steer small towns and rural communities into pilot projects based upon observed success stories in other jurisdictions with limited understanding of whether that solution is addressing the actual travel needs or satisfying a perceived deficiency in options. A VDP may appear to be a more complicated effort to arrange than contracting a bus service for a once per week run, for example, but there is a scalability factor with VDPs given that they are member-based and can therefore expand as membership and volunteer supply expand. Our research is beginning to develop some figures that can be useful for sketch planning purposes, courtesy of the data shared by our VDP partners. Even in our sample of seven groups, there appear to be some identifiable patterns which suggest that demand forecasting may be possible.

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Lesson #3: Successful VDPs are providing more than travel. Understanding this can also inform service provision in other modes.

VDPs in New Brunswick are providing transportation to health care, life maintenance activities, work and education, and quality of life activities—but they provide more than the "drive." Drivers accompany users to medical appointments, open doors, and assist with carrying things such as groceries. These are not required tasks. Rather, they're a function of the altruism that enables these programs. VDPs in New Brunswick are key members of their broader community and the member-based format provides a personal connection between users and the program. These nuances can distinguish VDPs from other modes where transportation is defined by a supply of trips. We have not quantified all of these nuances, including benefits for those that maintain mobility while being a non-driver in a rural area, yet being aware of their existence may help make other rural modes more successful.

Lesson #4: While VDPs are a promising solution for rural older adult mobility, they should be considered as part of a continuum of mobility solutions aligned with demand or need.

There is a risk that because successful VDP are effective in their niche, they will be called upon to satisfy societal transportation needs at a level beyond their ability to deliver. For example, if health and commercial services continue to centralize in urban areas, VDPs may face increasing pressure to develop beyond their local roots and increasingly serve an intercity purpose. This can tax volunteers, impact group sustainability, and also make the program less effective in serving local needs. Within a continuum of options available for rural older adult mobility, there may be opportunities to combine elements of other options to support VDPs when reaching the threshold of their service abilities. Options such as integrating with public transit when travelling to urban areas or taxi services could provide opportunities to make better use of all modes depending on the trip type. This is why the study of VDP through a transportation engineering lens is important as the boundaries on what defines a "feasible" combination of demographic and geographic variables for VDP remains undefined.

NEXT STEPS

In the future, we hope to gain a better understanding of how volunteer drivers incorporate the provision of transportation into their own trip-making and, at some point, learn more about how users incorporate VDP transportation into their own trip-making. This will be key to being able to predict future demand of users and supply of volunteers. I would also like to seek additional research partnerships with groups across Canada and the United States to help validate the trends we are observing in our New Brunswick data. VDPs and their operators are on the front lines of demographic changes in rural areas and are providing transportation for health, quality of life, life maintenance and other needs that may not be otherwise provided or as effectively provided by another mode. As the population ages, in concert with smaller family sizes and rural outmigration, demand for these programs will likely grow over time both in terms of riders and the amount they travel. Therefore, the study of these types of programs will be essential to ensure the mechanisms are in place so that people are able to meet their mobility needs with a solution designed to address their unique challenges.

Trevor Hanson, PhD, P.Eng., MITE is an Associate Professor of Civil Engineering at UNB and the new coordinator of the UNB Transportation Group, where he maintains an active teaching, research and service portfolio in transportation engineering and planning focused on age-friendly rural and community transportation. Learn more and contact him here.

ACKNOWLEDGEMENTS & FURTHER READING

The team that has contributed to this research includes two MScE students to date (Matthieu Goudreau and David Copp) and one BScE student (Denis Caissie). The team has prepared a number of publications and presentations related to this topic which formed the basis of this article. For more, please visit the UNB Transportation Group website at unb.ca/research/transportation-group/

For more technical details, please see:

Hanson, T.R., M. Goudreau, 2019. *Developing Transportation Engineering and Planning Metrics for Rural Volunteer Driver Programs*. Transportation Research Record: Journal of the Transportation Research Board https://doi.org/10.1177/0361198118821377

WE HAVE THE WORST ROADS IN <INSERT LOCATION>

Low cost pavement data collection for better decision making in small and rural communities

BY COADY CAMERON
TOTALPAVE

Roads are a hot button issue. Whenever I explain my line of work to technical or non-technical folks I get the same response. Usually something along the lines of, "We have the absolute worst roads!" followed by a list of streets they think need attention right now, usually the street they live on or on their route to/from work. From Fredericton to Saint John, Ontario to British Columbia, or the United States to India -- no matter the size of the jurisdiction and no matter who you speak with we all apparently have the worst roads on the brink of crumbling into the abyss if loaded with just one more vehicle.

But we can't all have the worst roads and sometimes the worst roads may not necessarily be those that the road authority should even be focused on. Herein lies one of the many challenges with modern infrastructure asset management. Municipal road managers must walk a veritable high wire every time they attempt to build out their annual paving and maintenance schedule; keeping a fine balance between competing interests of the public, council, and administration, all while maintaining an adequate level of service. This is only compounded by shrinking budgets in many cases and a limited construction season here in the Great White North.

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The little cherry on top of this situation is a new regulatory framework associated with Federal Gas Tax funding. The current Gas Tax agreement runs from 2014 – 2024 and annually provides communities across the country with a stable drip of funding they can use to invest in a variety of local infrastructure projects of their choosing. Since the scheme's inception, municipalities have grown to rely on these Gas Tax disbursements as a crucial part of their annual infrastructure planning.

These new regulations mandate that municipalities must start integrating modern asset management practices into their annual planning in order to access this critical pool of federal funding. The rules vary province to province but, at a high level, require communities to show incremental improvements in their asset management planning by establishing an accurate asset inventory database, objectively assessing the condition of the assets in the database, then using that condition assessment to develop 5 year, 10 year, 15 year, etc. capital asset management strategies.

In order for your asset management plan to be accurate and useful, you need to start with a solid foundation. It is absolutely vital that the inventory and condition assessment that form the basis of your planning activities are accurate, and the biggest stumbling block we see in this regard is the condition assessment.

Gone are the days when road managers could use the Tim Horton's method to assess the condition of their roads. For those uninitiated, this standardized "scientific" approach first involves going to Timmy's and ordering a double-double (or whatever you take in your coffee; contents are not important as long as it's hot). You then use your legs as a cupholder and drive around sections of roads in your network. Roads are classified based on a three-tiered rating system:

- **Great**: You drive a road and no coffee leaks are detected.
- **Not Too Bad**: A few drops leak out here and there over the rim of the lid.
- **Bad**: You refuse to keep the cup between your legs for fear of having a torrent of scalding hot coffee flying all over the place, coating your lap along with the two front seats of your truck.

This method along with other favorites, such as the tried and true "Windshield Survey", are no longer cutting it. We need to take a more objective approach when assessing the condition of the roads in our network.

For a more methodical approach, there are various industry-standard objective performance measures that are used to quantify road condition. A few common performance measures are:

- **Pavement Condition Index (PCI)**: a score between 0 – 100 that quantifies a road's surface condition based on an ASTM standard survey methodology, and
- **International Roughness Index (IRI)**: a standard measure of road roughness.

There's a catch: the biggest hurdle to getting this data is cost.

Currently, one of the most popular methods involves using a van outfitted with a host of sensors that measures everything from surface distresses to road roughness. These vans are able to report objective road condition data using the sensor data they collect while driving. The kicker is that the vans themselves can cost north of $1 million and even one-time scans can cost upwards of $50,000–$100,000 even for small road networks. This option works well for large jurisdictions with huge road networks/budgets, but small to medium size municipalities are hard pressed to find that kind of funding in their budget to devote towards these services.

CASE STUDY: EDMUNSTON, NEW BRUNSWICK

A great example of one of these small to medium size municipalities is Edmundston, New Brunswick, located in the northwest corner of the province just east of Maine and south of Quebec. The population of around 16,000 people is spread widely across four communities which were amalgamated in 1998 to form the City.

The first step in their journey down the path of asset management involved getting a solid handle on exactly what they had in their road asset inventory. They began to set up their Geographic Information System (GIS) using the provincially maintained National

Road Network (NRN) as a base. NRN is a great seed for any GIS because it includes many attributes like street names, civic addresses, road classes etc. and will get you about 90% of the way to a full inventory. Validation is required for that last 10%; this step involves making sure you've filtered out roads you don't manage (provincial, private, etc.), segmenting the roads properly (usually intersection to intersection), and cleaning up geometry. All told, figuring out what you've got and setting up your GIS is certainly not a job to be left for a Friday before the long weekend but, with a little time and elbow grease, it can be done fairly painlessly in-house.

With a solid asset inventory, next came time to figure out what condition those roads were in. When considering options, Edmundston found themselves in the same position as many other small/medium municipalities. They could either choose to do a wildly subjective but cheap windshield survey or sink a huge portion of their budget into an objective survey done by a consultant using one of those automated data collection vans mentioned above. Edmundston chose a third option: TotalPave, a system that allows you to collect the same objective data you get from those expensive vans, but at a fraction of the cost using nothing more than the smartphone you probably have in your pocket or on your desk.

They started their data collection activities in 2017 by picking up IRI data in-house using the smartphone-based platform. This process involves mounting a phone to the windshield of one of their municipal vehicles, then driving around sections of road in their network. The system is able to calculate IRI values for sections you fully cover while driving with the app running using sensors embedded in the smartphone. In the initial stages, this IRI data was coupled with road age using a weighting factor to give each road a score out of 10. This base rating was then used to develop condition categories for their road network and helped drive the creation of maintenance windows / levels of service targets.

To increase the complexity of their model in 2018, they began to integrate PCI collected using the TotalPave platform in place of road age. Representatives from TotalPave assessed half the network in the fall of 2018, then returned in the spring of 2019 to cover the other half giving them a full network assessment. Going forward, their transportation department will pick up IRI on an annual basis and look to do a full PCI assessment approximately every three years. In the interim, they will continue to monitor conditions and adjust their model as needed and plan to add asset risk as a factor when prioritizing different management strategies.

By taking ownership of the process, the folks in Edmundston now have a repeatable approach to managing the roads in their network that is based on objective data and isn't going to break the bank. Roads may always be a hot button issue, but at least managers will now be able to tell you objectively which sections in the network are actually the worst and give you a plan backed by scientific rigor outlining how they intend to deal with those roads.

The transportation department in Edmundston, NB is using a low cost pavement data collection approach for improved road management.

Coady Cameron, MScE, P.Eng. graduated from the University of New Brunswick's Transportation Group with his Master's of Science in Civil Engineering in 2014 where his research focus was using smartphone technology to collect road roughness. Upon graduating he commercialized the research, founding a startup called TotalPave. Since that time, TotalPave has expanded across the globe working with clients at all levels of government as well as the private sector.

Stories from the Trail

The Frontenac K&P Trail and Active Transportation Plan as Tools for Economic Development

BY KATE WHITFIELD & EZRA LIPTON
ALTA PLANNING + DESIGN

The Frontenac K&P Trail is a recreational trail that is part of a multijurisdictional, multi use rail-to-trail corridor travelling approximately 150 km from Confederation Park in downtown Kingston through Frontenac and Lanark Counties to the shores of the Ottawa River in the Village of Renfrew. This corridor originates from close to the Wolfe Island Ferry Dock in Kingston and serves as an important link between the Frontenac Islands and the rest of Frontenac County. The K&P Trail corridor from the City of Kingston to Renfrew County has also been identified as a key off-road cycling route in the provincial cycling network.

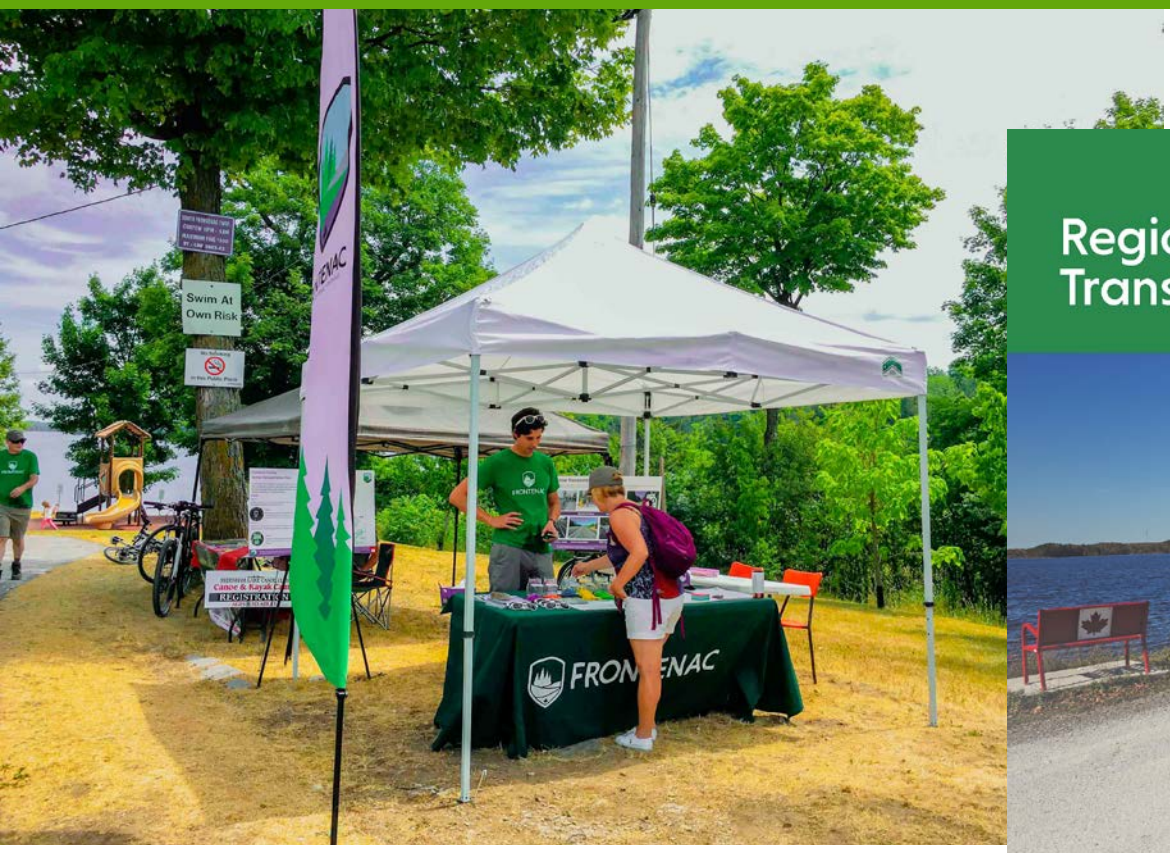
The Frontenac K&P Trail forms a key north-south active transportation corridor through Frontenac County which intersects The Great Trail route as it passes through the region. The existing portion of this trail corridor in Frontenac County consists of roughly 55 kilometres continuing from the Kingston K&P Trail at Orser Road in South Frontenac to the Village of Sharbot Lake in Central Frontenac.

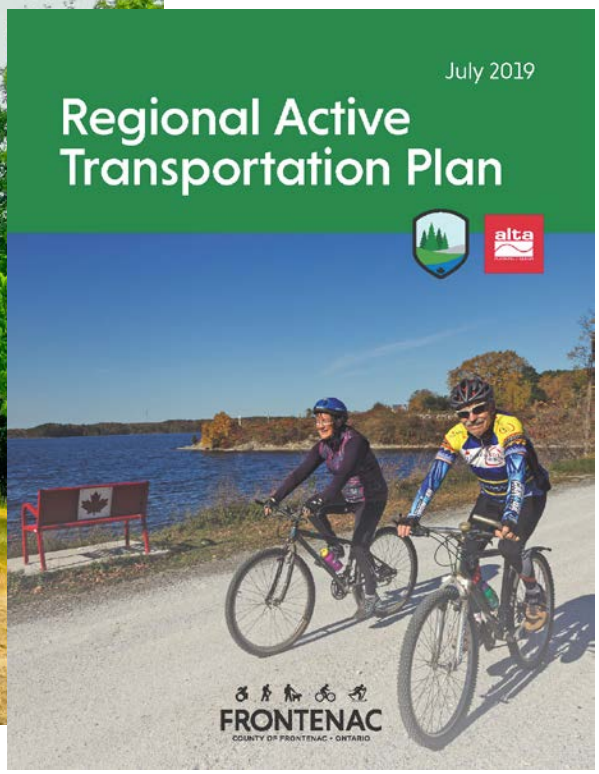
Frontenac County began development of the K&P Trail in 2009 with the goal of attracting residents seeking recreational facilities and to develop trail-based tourism to support the local economy.

The entire Frontenac K&P Trail is open to a variety of user groups year-round including hiking, biking, skiing, and horseback riding. Snowmobiles may make use of the K&P Trail corridor when conditions allow between December 1 and April 1 each year. While motorized use is permitted in the winter for snowmobiles only, off-road recreational vehicles may only access the K&P Trail north of Verona from April 1 to December 1. The trail is reserved for active uses only south of Craig Road in the village of Verona.

The K&P Trail is a great asset within Frontenac County. What Frontenac County also has is Richard Allen.

As the Manager of Economic Development, no one told Richard when he was hired that he would be leading trail building initiatives. He wears many hats—from destination marketing to business support services and grant writing. But with the development of a strategic plan for the County and





Richard Allen listens to stories from community members about their trail experiences to inform the Regional Active Transportation Plan.

the existence of the K&P trail as the backbone connecting communities by trail, Richard found himself discussing trail alignments, crossing treatments, and maintenance policy. It was a great effort to address all of the technical challenges of rail to trail conversion and fill in the missing links.

The infrastructure itself, a 3.0 m gravel trail in the 'developed' sections, varies throughout the County. Offering both recreational and active transportation opportunities, the trail supports a variety of users. As popularity grows alongside improved infrastructure, the K&P Trail has the potential to become an increasingly viable option for more people interested in accessing jobs or services in Kingston via the trail. The efforts to implement accessible wayfinding in Kingston was built upon by Frontenac County offering consistent messaging and a more user-friendly trail system.

As the County shifts from building infrastructure to connecting communities to creating incredible experiences on the K&P trail, other initiatives have emerged. The County has created a platform for a virtual tour of the trail. Successful trail promotion doesn't come from photos of a gravel track though; it comes from connecting experiences to trail locations to help users create their own story. Drone imaging and targeted social media posts promoting Open Farm events, festivals, and ferry-by-foot bring destination marketing together with trail planning.

Frontenac County is a rural upper tier municipality including the townships of North Frontenac, Central Frontenac, South Frontenac, and Frontenac Islands. The total population of the County is approximately 26,655 with an area of 3,300 km^2. All roads within the County are owned by the Townships. In 2018, a Regional Active Transportation Plan was initiated by the County with the aim of working with the four Townships to set priorities for infrastructure improvements, seen as an opportunity for a coordinated approach with economies of scale. With a relatively small tax base (with over 95% residential assessment), Frontenac County had to be strategic as it considered spending on active transportation in a small/rural community environment.

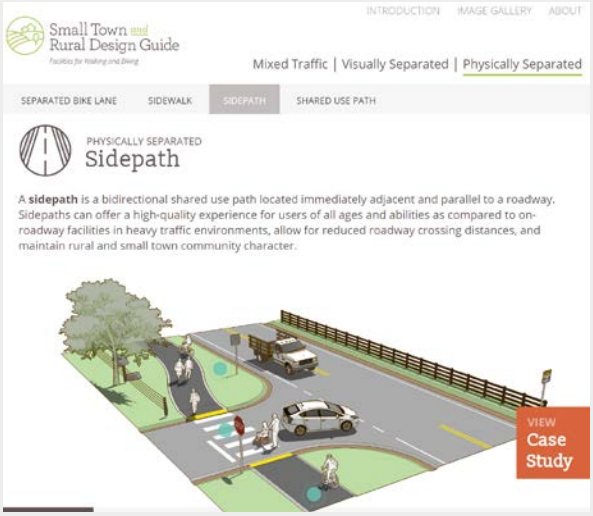
Continued on page 17...

RESOURCES FOR ACTIVE TRANSPORTATION PLANNING IN SMALL & RURAL COMMUNITIES

Small Town and Rural Design Guide

http://ruraldesignguide.com

"An online design resource and idea book, intended to help small towns and rural communities support safe, comfortable, and active travel for people of all ages and abilities."



The more detailed *Small Town and Rural Multimodal Networks Guide* is also freely available from **FHWA**.

Rural Multimodal Planning: Why and How to Improve Travel Options in Small Towns and Rural Communities

https://www.vtpi.org/rmp.pdf

This report from the **Victoria Transport Policy Institute** explores why and how to implement more multimodal planning in rural areas and small towns. With detailed discussion of rural community needs, planning resources, performance indicators and targets, plus examples from across North America and Europe, this document offers many resources for transportation professionals.

Active Transportation Planning Beyond the Greenbelt: The Outer Ring of the Greater Golden Horseshoe Region

https://www.tcat.ca/wp-content/uploads/2017/03/ATPBtG.2017.03.16.forweb-1.pdf

This publication by **The Centre for Active Transportation (TCAT)** highlights challenges and solutions in active transportation practice for small and rural communities. Case studies of 13 municipalities in Ontario are featured, including three rural projects.

When initiating an Active Transportation Plan in the County, it was framed within the context of existing assets (the K&P Trail) and around small town/rural community planning. Imagery and concepts from the *FHWA Small Town and Rural Multimodal Networks Guide* (see sidebar) helped generate discussion and frame ideas. Small and rural towns have great potential for creating viable networks that serve residents and visitors. Common attributes of a small-town network include connections between communities that are located along highways and access to retail businesses and schools in a relatively small area within the community core.

The large geographic area of the County creates its own unique challenges for public engagement. Pop-up events covering the coffee shop on a Saturday morning in Sharbot Lake to the Wolfe Island ferry dock during the morning commute combined with a strong online presence helped shape community engagement. An online mapping tool was used to collect feedback about destinations in Frontenac County where people like to walk and bike. The online engagement tool also allowed residents to note concerns and leave comments and suggestions for active transportation facilities, all cross-referenced into GIS relating to the technical analysis.

Understanding the County's existing conditions was part of the process for strengthening the County's active transportation networks. Existing types of infrastructure in Frontenac County included sidewalks, on-road cycling facilities such as bike lanes, paved shoulders, and raised cycle tracks, in addition to the different trail typologies. A challenge facing many small towns and rural communities is the trail crossing treatments available in a low volume and higher speed environment. By identifying existing conditions in the hamlets, gaps within the existing network were identified including inconsistent trail crossings, disconnected sidewalks to schools and libraries, and cycling facilities that end abruptly.

The Plan will help guide capital investment decisions into the future in terms of filling these gaps, whether it's a missing sidewalk link between a retirement home and services within a hamlet or a section of paved shoulder. Other initiatives relate back to the K&P Trail. The mapping process associated with the Active Transportation Plan project considered the

question: so we built this awesome trail in its own dedicated right-of-way but how do people get to it?

With limited resources County-wide, prioritization criteria were an important element of the Active Transportation Plan. When considering the network and associated policy recommendations, the following criteria were applied: the gaps/missing links identified by citizens; the gaps/missing links from the technical analysis; how the project relates to the K&P trail; projects with potential for economic development; opportunities for regional linkages (think tourism); and, leveraging capital works projects.

The Active Transportation Plan at a regional level will enable the four Townships to integrate active transportation projects into long-term capital plans and to apply for additional funding dedicated towards active transportation infrastructure.

Richard is busy and will continue to be. The next steps for Frontenac County include 'going north' with the K&P Trail to Lanark County and developing a trail management plan. Initiatives are also underway related to trail amenities and measurement through counters and surveys. This work comes with continued collaboration with other rail trails as well as the implementation of the other Active Transportation Action items. With the K&P Trail starting in Kingston adjacent to the Wolfe Island Ferry Terminal, there are future plans for a Wolfe Island "spur line" to transform a community connection into a truly regional network. Overall, an economic development theme around 'telling the stories of the trail' will help continue to build on the success of the K&P Trail initiative.

CREDIT: MICHAEL MCGOLDRICK

Above: Dog walking on the Cataraqui Trail, another key part of the Frontenac County active transportation network that intersects the K&P Trail.
Below: Cyclists and pedestrians wait to board the ferry to Wolfe Island by bike and foot.

Write your story: Visit Frontenac County or explore the K&P Trail virtually

Kate Whitfield, P.Eng., MCIP, RPP is a Principal with Alta Planning + Design. She is a Professional Engineer and Professional Planner and leads the Canadian operation from Alta's Ottawa office. Kate is from Kingston, Ontario with her own outdoor adventure stories covering different corners of Frontenac County.

Ezra Lipton is a Planner with Alta Planning + Design in Ottawa, Ontario. He led the GIS & Analytics elements of the County of Frontenac Active Transportation Plan. Ezra was on the Alta team for the active transportation plans for Rocky View County in Alberta and Chase, BC and is currently working on plans for Westbank First Nation in BC, the City of Brockville, ON and a rural plan for Burlington, ON.

Congratulations to Urban Systems for the TAC 2019 Educational Achievement Award!

In 2018 and 2019, the CITE Training Committee partnered with Urban Systems to deliver *Shifting Gears: Planning and Designing Bicycle Facilities for People of All Ages and Abilities* training workshops across Canada. CITE is proud to congratulate Urban Systems for their receipt of the TAC 2019 Educational Achievement Award for this program. In collaboration with our local sections, this workshop was delivered by Brian Patterson and Sarah Freigang in:

- Kitchener-Waterloo (September 2018),
- Regina (November 2018), and
- Ottawa (June 2019).

The training workshops were intended for professionals involved in the design of the public realm—such as engineers, designers, planners, and landscape architects—in both the public and private sectors.

The goal of this training was to equip transportation professionals to:

- Promote cycling and the role of cycling in the broader transportation system;
- Consider the unique needs and issues of various types of cyclists when designing transportation infrastructure; and
- Effectively plan, design, implement and manage bicycle facilities.

The CITE Training Committee is working hard to offer new training opportunities for the CITE members in 2019 and 2020. Stay tuned for more info and plan to attend award winning training programs coming to your area.

Traffic Calming Training

Winnipeg, MB

Winnipeg Public Works
November 27, 2019
8:30–12:30

The purpose of the workshop is to introduce the components of the new TAC/CITE Canadian Guide to Traffic Calming–Second Edition (2018). Click here for more info and to register.

Register at cite7.org/events

Connecting CITE & TAC

BY RYAN MARTINSON
TLC MEMBER

Over the last couple of months, CITE's Technical Liaison Committee (TLC) has been gearing up for the Fall Technical Meetings of the Transportation Association of Canada (TAC) in Halifax to see how collaboration between our two organizations can happen and share insights on what our members want.

This fall, we had great representation and participation from CITE's TAC Appointees at various technical meetings that were going on. I attended the Transportation Planning & Research Committee, Sustainable Transportation Standing Committee, and Urban Transportation Council on behalf of the TLC and CITE.

Admittedly, I was a newbie to the TAC meetings, but for those familiar with how the ITE or TRB meetings operate, they are very similar… coffee is flowing freely, everyone has a laptop out taking notes, and the biggest trick is to optimize your location between a power outlet and the doors to the washrooms (because of the aforementioned coffee). All of this occurs while members talk about emerging trends, evolving best practices, and gnarly problems that should be tackled.

A common theme in the meetings I attended was the upcoming changes to the Council and Committees structure. It isn't a big change for most of the Committees and Councils that CITE is involved with, perhaps a change in title or a minor change in the reporting structure. We are looking forward to keeping involved with the organization while these changes happen and our CITE Appointees are well situated to respond to the adjustments.

In a couple of the meetings I attended, there was a presentation on Halifax's Integrated Mobility Plan, which was approved in December 2017 and is currently being implemented. This plan's key principles of Complete Communities, Move People, Manage Congestion (which is different than eliminating it), and Integrate Solutions has resulted in work around the region that participants of the conference were able to take in.

There are a number of projects proposed or underway that CITE members might be interested in. Three in particular are the Road Safety Webinar Series, development of standard indicators for evaluating the integration of transportation and land use in an urban environment, and Public and Stakeholder Engagement in Sustainable Transportation. These projects are in the earlier stages of development, so let CITE know if that would be of interest to you and the work that you do. Also, if there is a project that you think would be good for TAC and CITE to tackle jointly, please feel free to let us know. As you will read in the TAC Tidbits from our Appointees, there are a number of projects that they are involved in on your behalf, but we are always looking for more linkages between our two groups to develop material that will better serve the communities that we work in. You can contact the TLC at tlc@cite7.org.

On other TLC items, we would like to remind members of the revamped Stan Teply Outstanding Technical Project Award. Please consider nominating a project that you think fits the criteria of this award. Award nominations will open early 2020.

Stan Teply Outstanding Technical Project Award

recognizes an outstanding transportation project that has shown significant and proven technical achievement

CITE has a strong partnership with the Transportation Association of Canada (TAC). One of our key contributions to TAC's technical projects is participation on a number of TAC councils and committees through CITE appointees. In this edition of TAC Tidbits, our appointees share updates about their committees from the Fall 2019 TAC Technical Meetings in Halifax.

Urban Transportation Council

KATE WHITFIELD
Senior Associate Engineer/Planner, Alta Planning + Design - Canada, Inc.

The UTC meetings include an informative update from each Council member in a roundtable format, providing a summary of new initiatives and challenges in cities across Canada. Other agenda topics typically include a TAC Secretariat Report and updates from standing committees. The new TAC structure was a common theme throughout the day and how it affects project involvement moving forward. The presentation before the UTC this session was made by Pam Cooley of the Carsharing Association. Pam is based in Halifax and spoke of tools for creating the ideal policy environment for car share. Seeing collaborative marketing as one such tool to reduce reliance on private auto use; a proven combination where a car share membership comes with a reduced bus fare/pass. Pam asked the room to think of car share as proven, cost effective and low hanging fruit as turn-key operations, asking what can be done to recruit providers to our cities? How can car share be more than a statement in our TMPs? and how can it be seen more as a viable part of our plans for truly impacting modal split?

Education and Human Resources Development Council

MAUREEN VAN RAVENS
Manager of Transportation, Town of Halton Hills, Ontario

The EHRDC 2019 fall meeting focussed on a variety of discussions and presentations relating to Mentoring, Safety in the workplace and Experiential learning in Transportation. The Council discussed the challenges of both Mentors and Mentees and how to overcome those challenges. An excellent presentation was provided on how students are developing their Transportation knowledge and experience learning through real-life applications in the industry and co-op opportunities with employers. The Council also received a presentation on safety in the workplace and lessons learned from recent incident that occurred on the job site.

The EHRDC hosted 3 panels sessions and one workshop in the 2019 TAC-ITS Canada Joint Conference. They were as follows:

- Young Professionals – Workplace Expectations (Panel Discussion)
- Women in Engineering (Panel Discussion)
- Impact of Technology in the workplace, The Good and The Bad (Panel Discussion)
- Communicating Effectively: A Soft Skills Development (Workshop)

All the sessions were well attended, generated lots of discussion and considered very successful.

For the 2020 annual TAC Conference, the Council is still developing the sessions. More information will be available in the spring.

Geometric Design Standing Committee

MARCIA ENG
Senior Transportation Engineer, Urban Systems Ltd.

The Geometric Design Standing Committee (GDSC) 2019 fall meeting included roundtable discussions on activities happening in each jurisdiction over the last period. Topics of interest included:

- Climate change and the impact on road design, and additional considerations
- Succession planning and leadership training
- Impact of micro mobility
- Recent opening of LRT projects in Ontario
- New bicycle facility designs
- Successful implementation of the advanced geometric design course

The meeting also included a featured presentation on the findings from the TAC funded project on Safety Impact of Bicycle Infrastructure in Canada.

The GDSC also hosted four, well attended, technical sessions for the 2019 TAC-ITS Canada Joint Conference on the following topics:

- Design Considerations for Transforming Existing Infrastructure to Complete Streets
- Designing Interchanges and Major Facilities in Constrained Conditions
- Roundabout Planning, Design and Operations
- Bicycle Design Considerations with Complete Streets

The committee is currently exploring topics for the 2020 annual TAC Conference in Vancouver, where focus will be Journey to Safer Roads.

Connected and Automated Vehicles (CAV) Task Force

STEVEN KEMP
Manager of Traffic Engineering and Operations, Regional Municipality of Durham

The Fall meeting of the CAV Task Force featured two informative presentations, CAV project updates from across the country and discussions on Task Force initiatives for the future.

Geoff Knapp from WSP Canada presented on the recently completed GTHA & Kitchener/Waterloo Corridor CAV Readiness Plan project undertaken on behalf of Transport Canada, the Ontario Ministry of Transportation, Metrolinx, City of Toronto and Peel Region. The project brought many stakeholders together to assess public sector readiness for CAV deployment. The final project report is expected to be published soon.

Hughues Bessette from the City of Montreal presented on Montreal's AV shuttle project and the cities participation in the US based Signal Phase and Timing (SPaT) challenge. Additional information on the Montreal AV shuttle project is available here.

In addition, the Project Development Sub-Committee (Chaired by Ken Moshi from Transport Canada) proposed the following four initial projects for the Task Force:

1. MUTCDC CAV Gap Analysis (Recommended TOMSC Project)
2. Impact of CAVs on Traffic Management Centres (Recommended TOMSC Project)
3. Development of a CAV Primer for Municipal Governments
4. Development of a Resource Document demystifying communications technologies for CAVs

Additional CAV resources available from TAC are available here. ITE CAV resources are available here.

Road Safety Standing Committee

PEDRAM IZADPANAH
Partner & Vice President, TES

The TAC Road Safety Standing Committee (RSSC) meeting focused on three major components:

- Administrative matters of RSSC
- Updates about ongoing TAC projects
- Technical presentations with a speed management theme

Administrative Matters of RSSC

The RSSC members in attendance elected their new executives. Pedram Izadpanah and Rebecca Peterniak assumed responsibility as the chair and vice chair for 2019-2021 term respectively. Also, the RSSC approved their strategic plan for the next five years. As such, the RSSC executives suggested a few changes in the structure of subcommittees to support delivering on the actions resulting from the strategic plan. As part of this new suggested structure a vision zero subcommittee formed.

Updates about Ongoing TAC Projects

The consultant working on the Bicycle Infrastructure in Canada; Safety Evaluation project presented the final report of the project. The project is going to the Chief Engineers' Council for approval and will be available for purchase through the TAC bookstore.

The other project on which the RSSC membership was brief on was the Canadian Road Safety Handbook (CRaSh) Scoping Study. The consultant presented their progress to date. The CRaSh books have been in development since 2001 on a voluntary basis and pool funded projects. The objective of this scoping study is to create a direction for the future of the CRaSh series. This project is at the early stages.

Technical Presentations

Three presentations related to different aspects of speed management took place. After the presentations, the TAC RSSC membership had an opportunity to interact with the presenters.

Joint Active Transportation Subcommittee

MARIAN MITHANI
Client Consultant, EcoCounter

At the JATSC Fall meeting, data gaps and reference tools for AT facilities were key topics discussed after a preview of the *Bicycle Infrastructure in Canada: Safety Evaluation Report*. Lack of available AT data remains a challenge among transportation jurisdictions at all levels, especially small municipalities. Monitoring programs with annual ped/bike counts in still undertaken by relatively few jurisdictions and even fewer collect data for non-vehicle collisions, and safety perceptions. Other topics discussed were e-bike use and classification as well as relevant projects in progress: *Estimating AT Latent Demand, Canadian Road Safety Engineering Handbook Scoping Study, and Regulatory Approaches to Enabling Bikeways*.

In 2020, JATSC will be transformed to the Active Transportation Integrated Committee and reporting solely to the new Mobility Council and I am proud to serve as the newly appointed Chair. While the current mandate of JATSC is information sharing, updates to the terms of reference could allow for leading projects and conference sessions in the future.

Traffic Operations and Management Standing Committee (TOMSC)

JAMES DONNELLY
Transportation Engineer / Principal, Urban Systems

LUIS ESCOBAR
Senior Associate & Discipline Lead, Stantec

JIM MALLETT
President & CEO, Paradigm Transportation Solutions Limited

JEANNETTE MONTUFAR
Founding Partner & CEO, MORR Transportation Consulting

GREG O'BRIEN
Atlantic Practice Manager, Traffic Engineering and Transportation Planning, WSP Canada Inc.

The Traffic Operations and Management Standing Committee (TOMSC) continues to see a lot of activity regarding various traffic engineering issues. Of particular importance is the status of the 6th edition of the Canadian Manual of Uniform Traffic Control Devices. It is expected that draft version of the Manual will be released by fall 2020. In addition, this project also developed special software to conduct comprehension testing of new devices. The software is now fully-functional and TAC is in the process of applying it carry out comprehension testing for the following devices: red arrow signal display, U Turn Signal Indication, and Transit Priority Signals.

Other highlights from the meeting include:

- A new report on the safety performance of bicycle infrastructure in Canada will be released in early 2020 by TAC. The report presents information about the safety performance of various types of bicycle infrastructure and includes a facility selection flow chart to help practitioners when selecting new bicycle infrastructure.
- The committee requested the initiation of a funded project on decorative crosswalks and pavement markings. The impetus for this project results from the increased number of requests received by agencies across the country on the installation of these devices and the lack of knowledge about their observed safety performance. It is expected that CITE will be a funding partner.
- Transport Canada has recently developed a Supplemental Design Guide for Vulnerable Road Users at At-Grade railway Crossings.

With TAC's new restructuring of councils and committees, TOMSC now falls under the "Safety, Operations, and Design" Council.

IAN ROTH P.Eng.

Current Employment
Project Manager / Transportation Engineer at Urban Systems Ltd.

Education
BASc in Civil Engineering, University of British Columbia (2012)

First job in transportation
Transportation Engineer at Opus International Consultants Ltd.

What positions have you taken on as a member of ITE?
- BC Interior Section: Secretary-Treasurer, Vice-President, President, Past President and District Liaison (2012–present)
- CITE Training Committee (2019–present)

When did you join CITE?
- 2010 during my undergraduate before there was a student chapter at UBC Okanagan

City of Residence: Kelowna, BC

Family
My husband, Loyal Wooldridge, plus two Mexican Hairless dogs and a cat

Personal hobbies
Teaching cycling / spin class at YMCA; Running and hiking; Piano; Travelling

CITE INVOLVEMENT

When did you first attend a CITE event?

I believe it was 2011 when I first attended the BC Interior Chapter's Mini-Conference event. My transportation professor at the time, Gordon Lovegrove, shared the event and my instincts told me this would be a great opportunity to get to know some of the engineers, planners, and professionals in the local region, and of course at the time, to find a job!

What is your CITE involvement (past and present)?

I really do owe CITE a great amount of gratitude as my involvement in the organization has opened many doors to new skills, experiences and relationships. While I have contributed in various ways through my involvement in the Section leadership and in planning professional learning events, a key highlight of mine was getting involved in the Local Arrangements Committee to plan and deliver the CITE 2016 Conference in Kelowna. My role on the LAC was Communications, which involved developing and compiling all the communication materials for delegate consumption, including the website, technical program, conference app, twitter live feeds, PowerPoint Presentations, session panels, and the list goes on! I saw firsthand how complex planning a conference is, and how much effort, coordination and patience is needed to make it a success. I learned a lot and I am ever grateful to the volunteers who have hosted conferences since then—that includes you, Vancouver 2020 LAC!

What do you value most about your CITE membership?

Simply put, it's the relationships and connections that I've had the opportunity to create and develop through CITE with transportation professionals across the country. Especially in the Canadian District, we're at a scale and size where each conference or event I attend is like getting to reconnect with extended family.

GETTING TO KNOW YOU

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

As I was growing up, I knew I had a knack for the design of space and systems. For a few of my teenage years, I thought architecture was the direction my

career was headed. However, my interest in building design waned as my purpose grew towards thinking about how I could really help people in enjoying their daily lives and transportation seemed to do that. Maybe it was also the fact that I remember being stuck in traffic congestion for hours in the car as a kid, and I wanted to do something about it!

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

I just finished reading *The Peaceful Warrior*, which is a beautiful and inspiring story about a young man who, in growing up, comes to realize that the complexity of life requires opening up the mind and finding deeper meaning and understanding in his own self. As my life and career have been evolving a lot over the past few years, I found that the story provided me with some of my own insights including learning more about my own life purpose and what meaning, both spiritual and worldly, that I'm seeking to ascend to.

What is your favourite mode of transportation?

It depends on the type of trip and season! For commuting, I love cycling whenever I can and when the weather is good. Recreationally, I love to run and hike outdoors or cycle the trails.

PROFESSIONAL ACHIEVEMENTS & PERSPECTIVES

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

I'm a transportation engineering consultant at Urban Systems and my team and I provide a range of multi-disciplinary engineering services through our transportation planning practice to a variety of clients. Our services vary from small- to large-scale transportation studies and planning to design and construction. Our guiding vision at Urban is Spirit in Service for Vibrant Communities, which we believe in whole heartedly as we recognize that the clients we serve are also the places where we live, work and play.

What do people say when you tell them you're a transportation professional?

People are always curious to know what that means in terms of my day-to-day job. Often, people assume that I deal only with traffic congestion or that I work for a local government. They're often surprised to learn that you can be a transportation engineer in a consulting capacity, and that the field of transportation is quite large and includes many levels of expertise and focus areas.

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

Creative Leadership. The problems and challenges we help our clients with are unique and diverse, and so it takes a high amount of creative problem solving and the application of our whole team's technical skills and experience to deliver great value for great clients.

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

One of my proudest and most challenging projects I worked on was the Highway 97 Quesnel Transportation Plan. Our client was the Ministry of Transportation and Infrastructure and the purpose of the study was to develop a comprehensive strategy of short-, medium- and long-term infrastructure projects for 14 km of highway that runs through the City of Quesnel. The study was challenging technically, with a large amount of data, information and options to analyze and evaluate; and it was challenging from the engagement perspective, where there were differences of opinion among stakeholders. Through our iterative planning process, we were able to bring these differences together by incorporating everyone's ideas and input into fulsome options. The project duration spanned 3 years from 2015 to 2018, and now, I'm most proud and excited to see some of the solutions identified in the study that are now fully funded and being designed and constructed on the ground!

Continued on page 27...

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

In this career I've chosen to pursue, I hope to make a lasting impact in improving the lives of all people and communities by making transportation more accessible, equitable, healthy, and fun. There are many large and medium-sized cities that are doing amazing things in the public right of way to support active transportation, improve mobility options and create places where people want to live, work, and play. However, there is a growing gap between the transportation privileges these communities can afford and the lack (or deterioration) of transportation infrastructure, services and amenities that are in high need among rural and Indigenous communities across BC. With significant population growth in the province and the bar for housing affordability becoming increasingly out of reach for many in our larger city centres, these small communities will become the vibrant places of tomorrow to grow up, start a career in and have a family. My hope is that I can help be a part of growing these communities by connecting them together through our regional transportation network and by improving their local transportation systems to support economic development, increased safety, and improve community health outcomes.

INTERESTS & PERSPECTIVES

Who has had the greatest influence on your life and career?

In many ways, it was my Father who had the greatest influence on my life and career, and it wasn't until only recently that I realized this truth. My Dad, family and I went on several trips, travels and journeys when I was a kid and I remember all the fun and fond memories we created travelling by car, bike, boat, plane, and train! I also had a fascination for all things that moved in systems and fell in love with the computer game SimCity. After my father died from cancer when I was 11, I continued to explore this fascination I had through academics (physics, math), and eventually decided to pursue a degree in civil engineering. It was only in the last few years that I've come to realize that my passion for transportation stemmed from times of joy through travel. Nowadays, I hold those childhood memories of my Dad and I closer to my heart than ever before as I live out my dream as a transportation engineer, hoping to encourage those same happy memories for kids and their parents travelling today.

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

I would like to see greater improvements in road safety outcomes through speed reduction measures in urban areas. There continues to be many fatal and serious injuries between high-speed traffic and vulnerable road users including people who walk and bike. There is a growing body of significant safety evidence that shows that collisions between vehicles travelling at 50 km/h and vulnerable road users results in less than 15% survival rates among people who walk and cycle. In locations where traffic is travelling at 30 km/h, the survival rate improves to more than 90%. As transportation professionals in both government and private sectors, we have an opportunity to reduce speeds in urban areas by implementing speed limits, re-allocating road space, and implementing traffic calming measures. We can also work with our partners in education and enforcement to change our high-speed culture.

BC INTERIOR SECTION

The CITE BC Interior Section and PIBC Okanagan Chapter held a joint conference on October 10, 2019. The theme covered: Health, Equity, and Innovation in the Built Environment. This event had the Section's largest attendance on record of 103 registrants. Dr. Megan Winters has been studying the *Impacts of Bicycle Infrastructure in Mid-Sized Cities* and provided a presentation titled: "*If we build it…who will come? Equity in Spatial Access to Bicycling Infrastructure in Mid-Sized Cities*".

Two tours were offered. One was an E-Scooter tour about extending use of multi-use trails to other micro-mobility options. The other was a walking tour on safe navigation for those with vision loss.

The afternoon continued with presentations on equity including transportation focused presentations on "*Using Bikeshare Data to Understand Bicycle Traffic in Kelowna*", "*Planning with a Winter Lens: Adapting Winter City Strategies from Large Urban Centres for Mid-Sized Communities*", and *Kelowna 2040: Our Kelowna as we Grow and Our Kelowna as we Move*.

The Section AGM saw the following changes in the Executive: Tom Baumgartner (President), Ellen Croy (Vice President), Vipul Garg (Treasurer), Mahmudur Fatmi (Secretary), and Ian Roth (Past President). There were several Members-at-Large who were also sworn in: Gary Vlieg, Gordon Lovegrove, Stephen Sargeant, Abdulrahman Masoud, Jasmine Smith, Amanda Watson, Chad Williams, and Elnaz Ansari.

NORTHERN ALBERTA SECTION

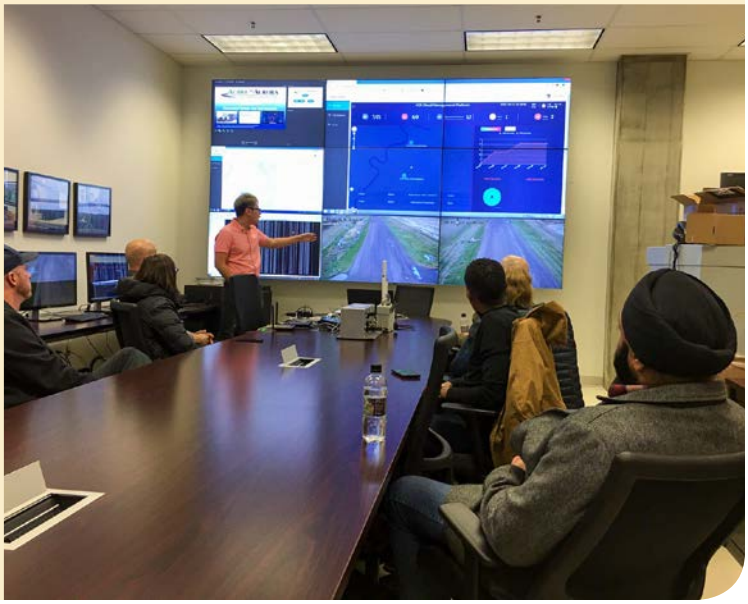
In August, the Northern Alberta Section of CITE hosted our second annual summer planning session to explore everyone's ideas and aspirations for engaging our members for the upcoming year. Similar to last year's session, this was a productive meeting that allowed the executive to present, discuss, debate and choose which events are worthy of our collective efforts for the upcoming year. From this session, we created our calendar of events for the year.

We kicked off our year on October 2 with the first of seven luncheons. Our first luncheon was hosted by Dr. Suliman Gargoum of Nektar3D Consulting who spoke on collecting data using vehicle mounted LiDAR for road design and planning studies. His presentation discussed the intricacies of collecting LiDAR data and processing the data to produce detailed roadway cross sections and assets. The presentation demonstrated the value of mobile LiDAR technology in improving the efficiency, accuracy, and cost-effectiveness of a variety of transportation projects.

Our first luncheon was followed by a Tour of the Connected Vehicles Lab at the University of Alberta's Centre for Smart Transportation (CST) on October 15. Dr. Tony Qiu provided an overview of current research at the CST and demonstrated the connected vehicle test bed.

Upcoming events include:

- **November 6** - Our second luncheon, "A Tale of Two Smart Cities", will be hosted by IBI Group. Matt Colwill will discuss the experiences and lessons learned from his participation in Infrastructure Canada's Smart Cities Challenge, where he worked with the teams from Edmonton and Vancouver/Surrey.
- **November 19** - Transportation practitioners social with wine tasting and presentation by Edmonton City Councillor Andrew Knack. We will also be inviting the University of Alberta Student Chapter and local members from Alberta Professional Planners Institution.



SOUTHERN ALBERTA SECTION

After a summer break, Southern Alberta Section Members enjoyed a lunch presentation by Jaime Graves of the Calgary Metropolitan Regional Board (CMRB). The Board was officially established in January 2018, and consists of representatives from 10 municipalities in the Calgary Region. The CMRB mandate is to develop a long term plan for managed, sustainable growth in region. Jaime provided an overview of the Board's organization, governance and infrastructure planning projects.

On October 15, Southern Alberta ITE hosted two events: a presentation on the Alex Fraser Bridge Capacity Improvement Project delivered by Edmund Lee and Brendan Stevenson of Binnie, and a Complete Streets Workshop facilitated by Peter Koonce of the City of Portland. Both events were well attended.

SASKATCHEWAN SECTION

The Saskatchewan Section took a tour of the Regina Bypass project in September 2019. The tour started with Phase 1 which extends from Highway 33 to Highway 46 (Balgonie) and ended at the Highway 11 and Bypass Interchange north of Regina. It was the first tour that spanned the full project limits. The Saskatchewan Ministry of Highways and Infrastructure staff provided facts, tidbits and insight into the construction of the largest transportation infrastructure project in the province's history. Tour attendees were provided the opportunity to see one of the borrow pits, the longest single span bridge in Saskatchewan, and to stand on the highest bridge, which is part of a three-level interchange. It was great to see members, students, and retired members participate in this outing.

In other news, the Section has an open posting for a Student Coordinator. If you are interested in the position, please email communications@saskatchewan.cite7.org.

Keep checking the Saskatchewan section Facebook page for the latest news and updates: Institute of Transportation Engineers – SK Section

MANITOBA SECTION

The ITE Manitoba Section took a break for the summer, with no formal events during July or August.

The Manitoba Section resumed events in September, with a bike tour around Downtown Winnipeg and several adjacent neighborhoods. The original tour date was rained out, but the tour proceeded on the backup date, with excellent weather. Twelve people participated in the tour, led by Chris Baker from the City of Winnipeg Public Works Department, who served as the tour guide. The tour included travel along recently constructed cycle tracks in Downtown, and also highlighted gaps in the cycling network, with some travel on-street during the afternoon peak period.

Preparations are underway for the Section's annual fundraiser, an Escape Room Tournament scheduled for October 24th. The Section has held successful Escape Room fundraisers in each of the last two years, and are planning for the success to continue in 2019. We will also be holding a special workshop event in November, with regular luncheons resuming in December.

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TORONTO SECTION

The Toronto ITE Section has had a very busy summer/fall and is looking forward to more exciting events towards the end of 2019. Toronto ITE Section strives to partner our events with complementary organizations and municipalities to expand our reach and presentation material diversity. In summer/fall 2019, ITE Toronto Section events included:

- **May 16 - 1-Day Course: Roundabout Design and Analysis**. Phil Weber, a nationally recognized authority on roundabout planning and design, taught this informative course on roundabout design and analysis.
- **May 27 - Pearson Airport Groundside Tour**. This tour provided members a unique, customized look at how the airport operates, and an opportunity to learn about some of the ongoing plans for Canada's busiest airport.
- **August 8 - Precise Parklink Tour**. Tour of Precise Parklink's parking equipment manufacturing, servicing and innovation facilities, including lunch.
- **September 13 - Econolite Tour**. Tour of Econolite's intelligent transportation systems (ITS) and signals equipment facilities, including lunch.
- **October 7 - York Region Bus Rapid Transit Corridor and Facility Tour**. Co-hosted with the York University Student Chapter.

Upcoming events include:

- **October 28 - 1-Day Course: Canadian Applications of the Highway Safety Manual (HSM)**
- **November 22 - 1-Day Course: Roundabout Design and Analysis (Thunder Bay)**. A repeat of the course held in spring, this time co-hosted with the Lakehead University (Thunder Bay) Student Chapter.
- **November 29 - ITE Toronto Section 2019 AGM and Christmas Luncheon**. Our most well-attended event, held at the Toronto Cricket Skating and Curling Club.

In addition to the above, in 2019, ITE Toronto has engaged in increased outreach and support for our student chapters including funding for student chapter activities and partnership with student chapters for events.

Thank you to all our attendees and sponsors. We look forward to seeing you in our future events.

UNIVERSITY OF CALGARY

To kick-off the new academic year, the University of Calgary's ITE Student Chapter held a panel discussion event jointly with The Urban Research Network, another student club with a focus on urban design, architecture, and geography. The panel brought together academics, Dr. Victoria Fast who specializes in barrier-free mobility mapping, and Francisco Uribe who studies public transit design, and municipal employees, Andrew Sedor who is Calgary's emerging technologies lead, and Eric McNaughton who is a senior transportation engineer. The general topic was "How will Mobility-as-a-Service (MaaS) impact Curbside and Urban Design of Space" with specific talking points of: physical, financial, and cognitive accessibility; when and how much to change infrastructure to accommodate MaaS; and goods movement and online shopping. It was a valuable and vibrant discussion with many audience questions, highlighting the importance of bringing together specialists from many different disciplines when their areas of interest overlap like it so often does with transportation topics.

UNIVERSITY OF MANITOBA

The University of Manitoba Student Chapter is looking forward to another year of chapter activities! Now that the school year has begun, we've participated in a number of events to recruit undergraduate students to the chapter. The recruitment was followed by an election to fill the social/fundraising, technical, and community chair positions. Furthermore, we held our first samosa sale fundraiser and gathered the team for friendly games of laser tag. We are looking to scheduling technical speakers for the term.

YORK UNIVERSITY

We started the new school year by participating in York University's Week Zero activities with the recruitment of 36 new members. Another major recruitment effort occurred at this year's YorkFest Clubs Fair, where our membership grew to 98 current students.

Webinars and Live Streaming

The ITE York University Student Chapter has taken the initiative this year to actively watch webinars available online from other organizations such as the How-to-Guide for Student Leadership Summit organized by ITE International.

In addition to viewing outside webinars, we have begun streaming our own events on our Facebook page to increase availability to a larger audience. The response to this idea has been great, and we have had several online attendees for our events in addition to the physical attendance. For our Public Transit Seminar, we had 25 people physically in attendance and an additional 28 people viewing the entire event via Facebook. Throughout the seminar we had 68 people partially viewing the live stream.

New Career Series

This year we introduced a Career Series to deliver several seminars and workshops geared towards helping students prepare for employment after graduation. Our first workshop in this series was an introduction to Toastmasters International and interview preparation. The workshop was conducted by a Toastmasters International District Leader, Katherine Weaver. Our second seminar in this series focused on Co-op and was lead by Bob Eichvald and Mayolyn Dagsi, who are coordinators of the Co-op & Internship Programs at York University.

Workshops and Field Trips

Our special events for the summer included a cycling tour of Lakeshore Boulevard where four of us cycled along the Martin Goodman Trail to appreciate the biking facilities and safety enhancements along Lake Ontario. We also had several members attend the Precise ParkLink Facility Tour organized by

Top to Bottom: Week Zero recruitment efforts; OTC Traffic Impact Study Workshop; Lakeshore Boulevard Biking Tour

ITE Toronto. This tour showcased local transportation equipment manufacturing facilities in the GTA.

Several students from the chapter attended an all-day workshop organized by the Ontario Traffic Council on conducting Traffic Impact Studies. As a follow up to this workshop, we invited a transportation planning expert to conduct the first of a two-part Synchro Training Session at York University's 407 ETR Learning Computer Laboratory with 20 students in attendance.

Our major field trip for the fall was a guided tour of the York Region Bus Rapid Transit Corridor and its operational facilities including the York Region Transit Office, the maintenance and administration facility, and some transit stations. The tour was co-hosted by our York University Student Chapter and the ITE Toronto Section.

Additional Highlighted Events

Five representatives from York University had an awesome time attending and presenting at the Joint TAC-ITS Canada Conference held in Halifax from September 22th to 25th.

We had a social dinner in September preceded by a special presentation by York University's newest faculty member, Professor Mehdi Nourinejad, who spoke on the business and social challenges related to autonomous vehicles.

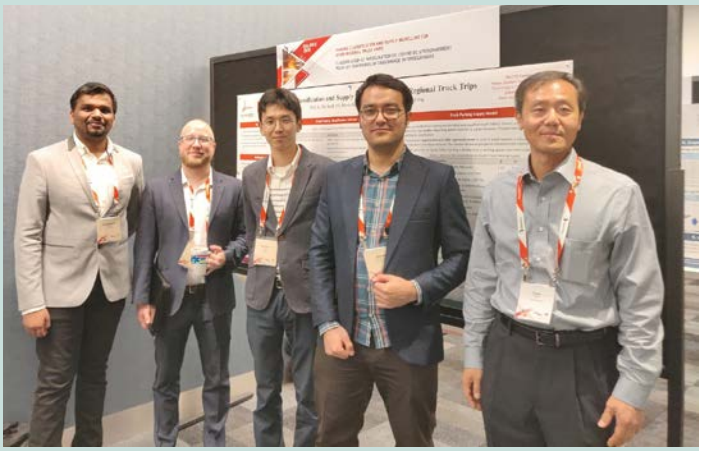
Our September and October presentation seminars have each included three external speakers on the topics of Public Transit and Long Term Transportation Planning.

Finally, our Social Director Crystal Wang presented her Master's thesis on "the Impact of operational speed characteristics of heavy vehicles on high-speed highways" at our first general meeting of the year before going on to successfully defend her thesis on September 30. Congratulations Crystal!

Club Information and Contact

For information about our student chapter or to view our first-year annual report, visit our website at www.ite.club.yorku.ca. Please let us know if you would be interested in speaking at one of our events next year or if you are interested a sponsorship package. You can email us at ite@yorku.ca or visit one of our social media pages. We also encourage you to watch our new informational video on YouTube.

Top to Bottom: Public Transit presentation seminar; TAC-ITS Conference, Synchro Training Session 1; New Year Social



MCMASTER UNIVERSITY

Call for Year Representatives

In September, the executive members welcomed incoming and returning students through the participation in recruitment events. Relevant transportation topics such as "why do buses bunch?", "why does Hamilton have many one-way streets", and "the consequences of congestion charging" were raised to inspire interest, expand our email list and increase ITE student membership. Additionally, these events introduced opportunities to meet other engineering/ interdisciplinary clubs; collaborative events are in ITE McMaster's horizon.

Student Chapter - Hamilton Section General Meeting

In October, the executive team hosted our annual Student Chapter - Hamilton Section meeting with the Mohawk College's executive members and associated faculty at the on-campus restaurant the Phoenix. Ideas for collaborative events such as site tours, lecture series, and software tutorials sessions were discussed and are now in the planning process.

Upcoming Events

The executive team is finalizing plans for the first guest lecture speaker event of the Fall on Wednesday October 30th. Stay tuned for the Winter edition to see details on this event and more!

QUEBEC STUDENT CHAPTER

Organizing orientation event for new engineering students

Due to the beginning of new academic year (September 2019) at Concordia University, ITE Quebec student chapter cooperated with Engineering and Computer Science Graduate Students Association (ECSGA) to hold a friendly networking event with new students. Two members of our chapter participated in the event and introduced main activities and potential membership benefits of joining to ITE community in form of a flyer. Also, during the event, a form was prepared for students who wanted to join chapter and more than 30 students filled the form. It was a good experience for the chapter to introduce themselves to newcomer students as well as encourage them to join the ITE as an active member.

Organizing the Microsimulation workshop in October

The chapter organized a supplementary workshop for all members of ITE Quebec chapter with a focus on microsimulation study. This two-day workshop strongly supported by our advisor – Dr. Alecsandru – to not only gave students a micro vision of transportation systems, but also build their skills before joining the job market. During the first day (16th October) fundamental concepts of microsimulation in transportation and some advantages of simulation models were taught. The second day (17th October) focused on the training of the generating micro model and develop it in VISSIM.

congratulations & welcome

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

Hassan T.A. Abdelhaleem, Imperial College London, Mississauga, ON

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Carl Colbourne, Lakehead University, Thunder Bay, ON

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