

Transportation



Talk

CANADIAN INSTITUTE OF TRANSPORTATION ENGINEERS MEMBER NEWSLETTER
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The Fort McMurray Wildfire

Reconstructing a Multimodal Evacuation Process

BY KATHY HUI AND AMY KIM
UNIVERSITY OF ALBERTA

During the Fort McMurray wildfire evacuation of May 2016, residents would pass through heavy smoke, burning trees, and a Super 8 motel in flames as they escaped to safety along Highway 63. First discovered on May 1, 2016, the wildfire quickly spread through northern Alberta and resulted in the evacuation of over 88,000 people from the urban service area of Fort McMurray. This evacuation, which included mandatory evacuation by personal vehicles, aircraft, and RCMP-escorted vehicle convoys, was carried out over five days and resulted in the largest and costliest fire evacuation in Canada to date. The transportation systems research group at the University of Alberta assembled and assessed data and other information in order to piece together the events of the evacuation and illuminate some of its major characteristics.

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president's ponderings



JEN MALZER, P.ENG.
Canadian District President
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Hi everyone,

I hope everyone was fortunate to have a great Thanksgiving. It's such a beautiful time of year despite having to say goodbye to summer. For me, it helps having a warm-blooded and very excited three-year-old make the transition into the mitt-wearing season(s). And though I think about slippery running, or whether it's time to transition to studded tires on my bike, I know it's a much more significant transition for members of our public with mobility challenges. The City of Calgary just passed two items on accessibility and I was really struck by a statement by one of our Councillors that we will all be disabled at some point. I find our industry talks about designing for others but when it comes to accessibility, we are working to an enhanced standard for our current and definitely future selves and family members. It is another good reminder to think about boulevards for snow storage, contiguous sidewalk design, and pedestrian desire lines. In this edition, we are introducing a new feature in our newsletter called My Favourite and the theme for this first edition is transit priority measures. Please keep an eye out for pictures of good winter design for accessibility; we may just call on you in January for *your favourite!*

This fall is definitely a busy time for the CITE executive. In addition to our regular meetings, we met via teleconference with our Board (made up of all CITE Section presidents) in September and then together as a group in Toronto. For the first time this year, Garrett Donaher, one of our *excite* co-chairs, was able to participate in our executive meetings. If you aren't aware, they currently have an events sweepstakes to support our student chapters. If you participate in a student chapter event, your name will be entered into a draw for a free conference registration to Toronto (three student and one full conference registrations will be awarded). See their website at cite7.org/excite/ for more details on how to enter.

Joint ITE/CITE 2017 Annual Meeting and Exhibition: In Toronto, we were able to meet with ITE International on the upcoming ITE 2017 Annual Meeting and Exhibit in conjunction with the CITE Annual Conference. There is definitely a lot of activity starting to build our next conference, both by our local Toronto team and the ITE team in Washington. The timing (July 30 – August 2) will be a little later than our usual CITE conference, though all of our regular events will be the same. We are very much looking forward to showing off Toronto and how we do conferences Canuck style. We certainly have them talking about our annual street hockey challenge and how that unfolds!

Safety: In September, our Board approved a \$3,000 commitment to help support the development of a North American road safety certification program, similar to what has been developed under PTOE and PTP. At our Toronto meeting, the Executive had the chance to discuss the program with ITE Executive Director and CEO Jeff Paniati, who is chair of this steering committee. It was a good discussion on how CITE is well-positioned to connect the committee with our Canadian transportation professionals and how approaches to safe systems design are advancing while also becoming more prominent. The Highway Safety Manual has definitely promoted the inclusion of data-driven decision making and Jeff indicated that another dramatic change in the US is around the reduced need for formal design exceptions in favour of applying judgment. Certainly the same trend is happening in Canada.

president's ponderings



The CITE Executive joins University of Toronto and Ryerson University student chapter members for a lunch gathering in October 2016.

Financials: With three quarters now behind us, we're pleased to be in a positive position financially. Our Kelowna conference was successful on all accounts and, with contributions made over the past several years to an operating reserve, we look forward to supporting our [Technical Liaison Committee](#) in advancing new technical projects and to supporting the activities of our emerging members via [excite](#).

TAC Collaboration: In September, I attended TAC's fall meetings, both to meet with our own TAC appointee volunteers and to provide TAC with a CITE perspective on their strategic plan development. At this meeting, we agreed that the partnership between our two organizations is not only important to our industry but is, in fact, very strong. Though our membership may have different approaches, it is evident that transportation professionals in Canada are casting a wider net in terms of the teams required to achieve a broader set of objectives for our rural and urban areas. Other shared priorities are to better provide opportunities for younger members and to be more nimble in how we deliver research products. Following the meetings, we agreed it would be valuable to introduce two new TAC appointee positions: one to the Connected Vehicle / Automated Vehicle Working Group and a second to the Joint Active Transportation Sub Committee. At this time, I am calling for candidates for these two opportunities as well as for a candidate to the Geometric Design Standing Committee. Please do consider applying when the official call for candidates is released via email; it's a great chance to contribute to some of the tools and conversations that shape Canada.

Finally, in my second and last year as president, I am very much looking forward to visiting the many Sections and Chapters I missed last year. I want to extend a big thank you to the University of Toronto for welcoming (and feeding!) not just our executive but also the Ryerson student chapter while we were in town. It was great to talk with so many of you. I'm really looking forward to a few more trips in November – with stops in Edmonton, Vancouver, Saskatoon and back to visit one of my favourites, the University of Calgary.

Wishing you all well and please do be in touch!

Best wishes,

JEN MALZER
Canadian District President

district director's message

Hi folks!

I hope everyone is enjoying the fall and all the many changes this season brings. Falling leaves, cooler weather, family Thanksgiving, an exciting – but too short – Blue Jays playoff run, and the beginning of another NHL season (and hope for us Maple Leafs fans that this may finally be the year!). Who could ask for more?

Unfortunately, fall is also time for an alarming road safety trend. On October 20, 2016, 18 pedestrians were struck by vehicles in the City of Toronto, including one person who was fatally injured. An [article in the Toronto Star](#) on the day following this tragedy noted that collisions involving pedestrians in the City increase considerably between September and December. The article referenced comments from Kim McKinnon, a spokesperson for the City's Emergency Medical Service, which "tend(s) to see an increase in pedestrians being struck in the fall, when days start to get shorter. 'Obviously, there is something about (the day), the weather and the status of the roads and people rushing that is causing these accidents,' she said."

Some further disturbing road safety statistics were reported in the Toronto Star article:

- "In September, Toronto Police said that 542 pedestrians and 541 cyclists had been hit by vehicles since June 1. The total of 1,083 collisions means about 9.5 crashes occur every day, or one every 2.5 hours. This has increased since last year, when 999 pedestrians and cyclists were hit during the same period.
- Pedestrian fatalities have increased by 34 per cent since 2005, according to the City of Toronto. One pedestrian is killed or seriously injured in Toronto every two days. Pedestrian fatalities account for about 50 per cent of total yearly traffic fatalities in the city, and 35 pedestrians have been killed in 2016 so far, Toronto Police said in a recent statement.
- Road deaths in Toronto are increasing in general, peaking at 65 in 2015, which is an 11-year high. Toronto Police say that if two more people are killed in traffic accidents this year, the number will be the most traffic-related fatalities since 2004."

As transportation professionals, we should consider these events and statistics a call to action and further our efforts to create safer and more welcoming environments for pedestrians and cyclists. For its part, ITE is taking an active role in new initiatives intended to aggressively advance the goals of the Vision Zero and Towards Zero Deaths movements. ITE's initial efforts will focus on large and medium-sized cities to support and complement the work of the Vision Zero Network through a Vision Zero Task Force. The technical working group formed by the Task Force is developing specific products to help enhance agency programming aimed at eliminating roadway fatalities. Work is also ongoing to develop a Vision Zero Toolbox. A [formal announcement](#) and [request for feedback/resources](#) to support the toolbox were posted to the ITE Community website in August 2016, with an expected initial launch by the end of 2016. We need to promote and, may I dare say, advocate for these and other road safety initiatives aimed at arresting this alarming trend. I encourage you to contribute where you can.



GENE CHARTIER,
M.A.Sc., P.Eng.
Canadian District Director
director@cite7.org

district director's message

ITE has initiated work on the next edition of the [Trip Generation Manual](#), which is targeted for release in the fall of 2017. This version will represent a new direction for ITE in the delivery of trip generation products. For the first time, ITE will begin to integrate urban, people-based data and move toward an electronic version of the Manual. One of the first steps in the process to update the Manual is to call for data. ITE relies on volunteer submittal of data to ensure delivery of the most accurate and up-to-date information available. Data for all land uses (including urban, suburban, and vehicle or person trips) is currently being accepted. If you have data, please take the time to upload the information to the database, which can be accessed via the [ITE website](#). Thanks!

Some other updates for you:

- As of September 30, 2016, there were about 13,760 ITE members worldwide, an increase of more than 640 individuals over this time last year. This growth is an encouraging departure from the experience of the past few years, which saw ITE's membership in decline. ITE HQ staff plans to continue efforts to attract even more new members through a proactive recruitment campaign, which will begin later this month. If you know someone who should become a member, please encourage their participation.
- Over 1,200 people attended the 2016 ITE International Annual Meeting and Exhibit held in Anaheim this past August. The event was an overwhelming success and exceeded expectations for attendance, program quality, and networking opportunities. A big shout out to the University of Manitoba students who competed in the ITE Collegiate Traffic Bowl during the conference. You represented the Canadian District well!
- ITE has launched its membership renewal cycle. Please renew your membership at the earliest opportunity as it allows ITE and CITE to better plan and deliver its annual programs.
- The Hilton Minneapolis will be the site for the 2018 ITE International Annual Meeting and Exhibit, which will be held on August 20-23, 2018 in conjunction with the ITE Midwest District and the ITE Great Lakes District meetings. Plan to attend!
- ITE HQ continues to advance the development of more technical and educational resources than I can possibly mention in this article. Many of these projects are being conducted in collaboration with other leading organizations, such as NACTO, the Congress for the New Urbanism, FHWA, and TRB, to produce leading edge resource materials in shorter timeframes. Check out the [ITE website](#) for further information.

As you may have heard by now, the 2017 ITE International Annual Meeting and Exhibit is being held in conjunction with the CITE Annual Conference in Toronto. Planning for the event, which is scheduled to run July 30 to August 2, 2017 at the Sheraton Centre Hotel, is well underway with all signs pointing to another great meeting. We are committed to ensuring the joint event still captures the sessions and activities you've come to know and love at the CITE Annual Conference, including the Student Mixer, the Annual Awards Luncheon and, of course, the Street Hockey Game. Make Toronto your conference choice for 2017!

If there is anything you want to share about ITE, feel free to drop me an email at director@cite7.org.



GENE CHARTIER
Canadian District Director

Joint ITE/CITE 2017 Annual Meeting and Exhibition

July 30 – August 2, 2017
Sheraton Centre Hotel
Toronto, Ontario



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CREDIT: THOMAS WIK

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Looking Forward to Seeing You in Toronto!

You are invited! Join us July 30 – August 2 in Toronto, Ontario for the ITE 2017 Annual Meeting and Exhibit in conjunction with the CITE Annual Conference. ITE and CITE are working closely together to put together a program that showcases the very best transportation has to offer from an international perspective. Don't miss this meeting, offering a multitude of exciting and educational experiences.

The theme of this joint meeting is **Transportation for All: Putting New Ideas into Practice**. It represents the need for a multifaceted approach to transportation, combining the visionary, forward-thinking ideas of tomorrow with a deep dive into the practical “how-to” professionals need to do their job today. This meeting will provide a platform for transportation experts from the public and private sector to share their expertise and insights and for attendees to gain valuable access to professional development.

There is no better place than Toronto for this meeting. As a multicultural and diverse city, Toronto is an ideal backdrop for greater understanding of the demands of various population segments. Toronto also highlights a truly multimodal approach to creating vibrant, healthy, and livable communities.

We are looking forward to seeing a terrific group of transportation professionals next summer! Be on the lookout for ways you can participate, beginning with the Call for Abstracts to be released on October 25.

JEFFREY F. PANIATI, P.E. (F)
Executive Director and Chief Executive Officer, ITE

GENE CHARTIER, M.A.Sc., P.Eng.
Chair, Local Arrangements Committee for Toronto 2017

Introducing a new feature in Transportation Talk, where you and your fellow CITE members share favourite transportation tidbits from across Canada. In this inaugural issue, Björn and Erin tell us about their favourite...

...transit priority location

Björn Rådström, P.Eng.

Manager of Service Development, Winnipeg Transit

The 900 m long Graham Avenue Transit Mall is a bus-only facility for half of its length, and is open to mixed traffic on the other half. Because it's not a through street, even the section open to traffic is very quiet. Through the use of paving stones to delineate pedestrian crossings, bulb-outs to delineate parking and shorten crossing distances, as well as heated bus shelters and quite a bit of street furniture, Graham Avenue is both a useful transit priority facility and a nice urban space. On a short stretch of Graham, there are three cafés, two delis, a busy restaurant with a large patio, a pub, a public library, a historic church, the MTS Centre (home of the Winnipeg Jets), and a weekly farmer's market. Graham Avenue helps us move buses and people through downtown, and also offers a great place for Winnipeggers to hang out. In the next few years, three tall residential towers will be built, adding even more vibrancy to the mix.



Graham Avenue Transit Mall
Winnipeg, Manitoba



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Erin Toop, MASC, P.Eng.

Senior Engineers, Transportation Strategies, City of Edmonton

My favourite example of Transit Priority is the High Level Bridge Streetcar in Edmonton. While this historic streetcar line often provides more of a tourism than utilitarian service, it's the only transit line that seamlessly connects my neighbourhood in downtown Edmonton with the Old Strathcona neighbourhood. The tracks run through a linear park corridor on the north side of the North Saskatchewan River, across the top of the High Level Bridge, and then they wind through the Old Strathcona neighbourhood to the Farmer's Market and Arts Barns area on the south side of the river. The line is almost entirely separated from traffic and in downtown, it shares a corridor with pedestrians and cyclists. I use this corridor all the time and love the activity that the streetcar creates in the spring and summer months. The best part is the Streetcar Shows: local Edmonton artists play small evening concerts on a streetcar full of patrons, stopped right in the middle of the High Level Bridge. The charm of Edmonton's High Level Streetcar comes from true transit priority: a fully separated right-of-way. And it is one of the most spectacular right-of-ways in the City.



High Level Bridge Streetcar
Edmonton, Alberta



CREDIT: RICHARD LAPERCHE

Have a topic idea? Want to be featured in a future edition? Contact us at communications@cite7.org!

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. Starting with this edition, we have asked all appointees to share a tidbit they feel would be of interest to the membership.

TOM BAUMGARTNER, MSc, P.Eng.

Transportation Engineer, Okanagan Office Manager, Watt Consulting Group



- CITE Appointee – Traffic Operations and Management Standing Committee (TOMSC) and CITE Co-Chair to Traffic Calming Guide Update
- The new Guide will provide guidance for traffic calming beyond the scope of neighbourhood residential roads, include additional traffic calming measures, incorporate speed management of arterial roads, and encourage proactive traffic calming so new roads are designed to achieve their desired intent. Drafts of each chapter have been completed and reviewed by the Project Steering Committee (PSC). A 100% draft is scheduled for mid-January 2017 that will address comments from the PSC. From there it is expected to be approved by TAC Chief Engineers Council and CITE in the spring of 2017.

ANDY HARVEY, MBA, P.Eng., PMP

Director of Engineering and Construction, City of Mississauga



- CITE Appointee – Geometric Design Standing Committee (GDSC)
- The Geometric Design Standing Committee is a standing committee of the TAC Chief Engineers Council and is concerned with the geometric design of facilities for all modes of road transportation.
- The Geometric Design Guide is a major focus of the committee was recently updated the new version is expected to be released in 2017. Major chapter revisions include Bicycle Integrated Design, Pedestrian Integrated Design, Roadside Design, and Intersections.
- The GDSC also actively participates on the Joint Active Transportation and Joint Roundabout sub committees.

JEN MALZER, P.Eng., MSc

CITE President and Pedestrian Implementation, City of Calgary

- CITE Appointee – Urban Transportation Council

- The UTC meeting allows cities and organizations like CITE and CUTA to compare approaches and projects. Themes this year were on integrated planning: in terms of being multimodal, connecting across municipal boundaries, involving new partners like health authorities, and considering funding mechanisms like tolling. Another important theme was around the greater emphasis on safety and vision zero strategies.



MARK MERLO, MASC, P.Eng., PTOE

Senior Project Manager, MMM Group Ltd.



- CITE Appointee – TOMSC and Project Steering Committee Member for the Canadian Traffic Calming Guide Update.
- Mark has worked in transportation consulting in British Columbia for 20 years. His areas of interest include traffic operations, micro-simulation and travel demand modeling. TOMSC projects that Mark has volunteered on include the Red Arrow Signal Indication and Standardization of Agricultural Vehicles Warning Signs.

JOHN MCGILL, P.Eng., PTOE

Past CITE President and Regional Director, Parsons Inc.



- CITE Appointee – TAC Chief Engineers Council
- The Chief Engineers Council (CEC) is made of representatives from all provincial transportation departments and several municipalities from across Canada. Only a few select associations are invited to participate including, ITS Canada, AASHTO, CSCE, and CITE. The CEC meets twice a year for two days at the TAC Annual Conference and during the Mid-year Technical Meetings. Day one includes updates on topics of interest such as climate change, toll highways expansion, and bridge and structures enhancements. On the second day, all the Standing Committees and Task Forces report on their activities, bringing forward issues, project updates and new project requests, along with funding requests. Some interesting topics were addressed this year by the TAC Committees including the upcoming release of the Traffic Monitoring Guide and the Updated Geometric Design Guide as well as an extensive discussion regarding the desire and need for a Road Safety Professional Designation.

SHANNON NOONAN, C.E.T.

Manager of Transportation, City of Cambridge, Ontario



- CITE Appointee – Traffic Operations and Management Standing Committee (TOMSC)
- A current major initiative jointly undertaken by CITE and the TAC - Traffic Operations Management Standing Committee is an update to the 1998 Canadian Guide to Neighbourhood Traffic Calming

GREG O'BRIEN, P.Eng.

Atlantic Practice Manager, Traffic Engineering and Transportation Planning, WSP Canada Inc. and Past Atlantic Section President



- CITE Appointee – Traffic Operations and Management Standing Committee (TOMSC)
- TOMSC is responsible for review of traffic control devices and signage to promote consistent usage of traffic control devices across Canada.
- TOMSC has been quite active recently with many volunteer projects as well as funded projects. CITE has partnered with TAC on an update to the Traffic Calming Guide for Canada. CITE appointees are reviewing and providing input to development of the guide as part of the project steering committee.
- TAC through TOMSC is preparing to soon begin work on a new release of the Manual of Uniform Traffic Control Devices for Canada (MUTCDC).

KELLY SCHMID, LEL, C.E.T.

Head, Northwestern Region Traffic Section, Ontario Ministry of Transportation, Thunder Bay, ON



- CITE Appointee – Traffic Operations and Management Standing Committee (TOMSC)
- Kelly believes that good engineering, enforcement and education are key factors in promoting highway safety.
- Kelly feels that involvement with the Editing and Publishing Committee, which reports to TOMSC and looks after the MUTCD, has had the most impact. Over the last year, she has reviewed and updated over 2000 sign pattern files that will go on sale shortly through the TAC site.

MAUREEN VAN RAVENS, C.E.T.

Manager of Transportation and Development Engineering, Town of Halton Hills, Ontario



- CITE Appointee – Education and Human Resources Development Council (EHRDC)
- The EHRDC focuses on current and emerging issues in the transportation sector, including:
 - › recruitment and retention of transportation professionals,
 - › improving knowledge management within transportation organizations,
 - › encouraging students to enter the profession and monitoring retention initiatives, and
 - › improving the public awareness of the importance of transportation to Canada's economy and to its mobility.
- As part of the 2016 Conference, the EHRDC organized the open plenary session on Ethics and a follow up session for further discussion on this topic. The EHRDC also conducted a panel session on Succession Planning within both the private and public sectors and was very well attended. During the Fall meeting, we discussed options to get the youth exposed to the Transportation Industry as a possible career. We continue to reach out the Secondary High Schools to have students attend the conference and participate in the organized Student Day event. The EHRDC is also reviewing the impact of advanced vehicle technology on transportation education and training.

PEDRAM IZADPANAH, PhD, P.Eng.

Partner, CIMA+



- CITE Appointee – Road Safety Standing Committee (RSSC)
- The RSSC mandate is to promote road safety for all road users in Canada. The highlights of the RSSC this year include (1) introduction of a few new analytical tools developed by the Federal Highway Administration (FHWA), (2) discussions around the development of a road safety professional designation in which RSSC is working closely with Transportation Certification Board and a few other organizations, and (3) a workshop on safety implications of roads with active transportation facilities.

...continued from page 1



Figure 1. Geographic scope of study with vehicle counters and airports/airstrips.

Fort McMurray’s remote location posed significant challenges in the evacuation process. The roadway network connecting Fort McMurray to the rest of Alberta is sparse: there is only one primary provincial highway (Hwy 63) that runs through Fort McMurray, with Highway 881 (Hwy 881) branching off of Hwy 63 about 20 km south. Fort McMurray is also serviced by Fort McMurray International Airport as well as several private airstrips in the oil sand work camps north of Fort McMurray, including airstrips belonging to Shell, Suncor, and Syncrude. The regional transportation network can be seen in Figure 1. Also shown are four highway vehicle counter locations from which data was collected (discussed later).

The study began by amassing information on the key events of the evacuation through social media and local news sources. A timeline of events was constructed relying primarily on official releases, notices, social media platforms such as Twitter, and personal communication with officials (see left).

It is evident that this evacuation occurred in two distinct stages. The first stage (Stage 1) involved getting residents out of Fort McMurray itself, whether that entailed evacuation northbound or southbound out of the city, in addition to some evacuees who left by air. Those who left by air largely consisted of individuals who had come to Alberta from other provinces to work in the oil camps. The Stage 2 regional evacuation consisted of a “controlled” departure, where evacuees who had escaped to work camps directly north were removed by aircraft or on escorted convoys. The Stage 2 evacuations were necessitated by the spread of the wildfire north towards the temporary shelters at the work camps.

Two main sources of transportation data were used for the analysis: highway traffic counters and flight radar data. The data allowed for the construction of an evacuation response curve for the Stage 1 evacuation and cumulative curves of person movements (by both air and ground) out of the region over both stages of the evacuation. Alberta Transportation provided data from four of their traffic counters located on Hwy 63 and Hwy 881 (Figure 1). Radar data for flights arriving at, and departing from, Fort McMurray airport and the three oil sands airstrips (Shell, Suncor, and Syncrude) was also provided for analysis.

It was identified, via social media and 511 Alberta (<http://511.alberta.ca/>) highway cameras, that contraflow occurred in the evening of May 3, on Hwy 63 both north and south of Fort McMurray. Contraflow occurs when lanes of a transportation facility are used in the opposite direction than normally intended. The May 3 contraflows on Hwy 63 were

EVACUATION TIMELINE

May 1: Fire discovered SW of Fort McMurray.

May 3 – 2:30 p.m.

A mandatory evacuation notice was issued to several southern neighbourhoods in Fort McMurray.

May 3 – 6:20 p.m.

A mandatory evacuation notice was issued to all of Fort McMurray. Residents were instructed to either evacuate northbound to temporary shelters at oil sands work camps, or southbound, based on their neighbourhood location.

May 4 – 4 p.m.

Fort McMurray International Airport is shut down. The majority of Fort McMurray residents have evacuated.

May 4-7

Oil companies evacuated their employees and sheltered evacuees via private airstrips, aided heavily by commercial airlines.

May 6-7

The RCMP escorts 50-vehicle convoys from the work camps southbound through Fort McMurray along Hwy 63.

May 8

Officials announce that there are no remaining evacuees in the work camps.

Fort McMurray evacuations

not officially controlled and operated; rather, these were initiated by evacuees spontaneously, in response to traffic congestion and heavy urgency.

Based on the vehicle traffic counter data, an evacuation response curve was created for the Stage 1 wildfire evacuation via private vehicle. Evacuation response curves have been constructed for several hurricane evacuations in U.S.; to the researchers' knowledge, this is the first response curve constructed for a wildfire evacuation. This curve, contained in Figure 2, shows the proportion (of the total vehicles evacuated in Stage 1) evacuated by a given time in the Stage 1 evacuation. The curve includes all traffic counted leaving Fort McMurray in both directions on May 3 and 4, and includes contraflow volumes.

The resulting evacuation response curve has an "S" shape similar to those of U.S. hurricane evacuation curves seen in previous literature. However, there are fundamental differences between those curves and this wildfire response curve. Hurricane evacuations occur with a much longer lead time; therefore, warnings and evacuation orders can be given out several days (if not weeks) in advance of landfall. In contrast, wildfires spread extremely quickly and their paths can be highly unpredictable. This was certainly the case in this wildfire event, where residents had time in the order of hours to evacuate. As a result, the left tail of the curve is very short; then, the slope becomes very steep very quickly after the official evacuation orders are made. The slope of the curve reduces at around 21:00 May 3 after 70% of vehicles have evacuated. The slope further reduces in the very early

morning of May 4, picks up again from 9:00-12:00 on May 4, and then tails off by the end of the day. Combined with a sparse transportation network to accommodate evacuees, the short warning time for wildfire evacuation in this remote northern region presents many complex policy and operational challenges for responsible agencies.

The total person movements out of the region (i.e., Fort McMurray and work camps combined) were then estimated over the entire two-stage evacuation, which utilized both air and ground transportation facilities. Based on information from social media and other traditional media outlets, an average vehicle occupancy of 2 and an aircraft load factor of 0.90 were used to estimate the number of people transported by ground and air. The estimated vehicle occupancy was also informed by average Fort McMurray household sizes and household vehicle ownership numbers, while the aircraft load factor was reduced from 1.0 due to household pets being transported by air as well. The resulting person volumes were in line with estimates reported in the media. Figure 3 shows the estimated cumulative count curve of persons leaving the region between May 3 and 8. Note that cordons were drawn around the region in order to ensure that vehicles were not double counted in the analysis (e.g., those that traveled north to the work camps on May 3 or 4 were only counted when they left the region entirely during Stage 2).

It can be observed that the large majority of evacuees left the region heading south on Hwy 63 during Stage 1. The purple curve flattens out towards the end of the day on May

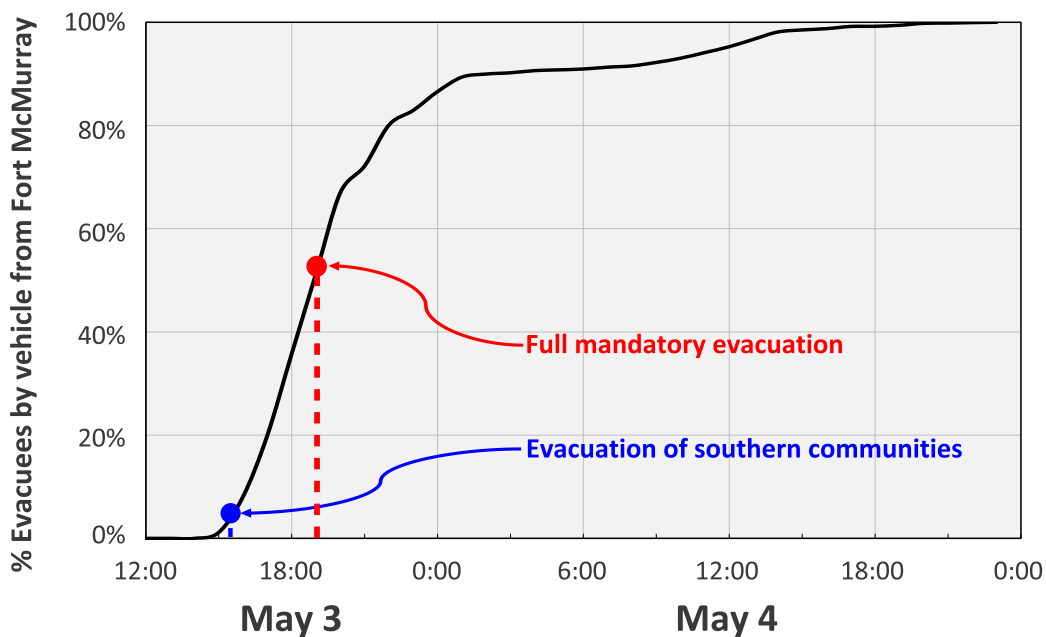


Figure 2. Evacuation response curve of Stage 1 Fort McMurray evacuation.

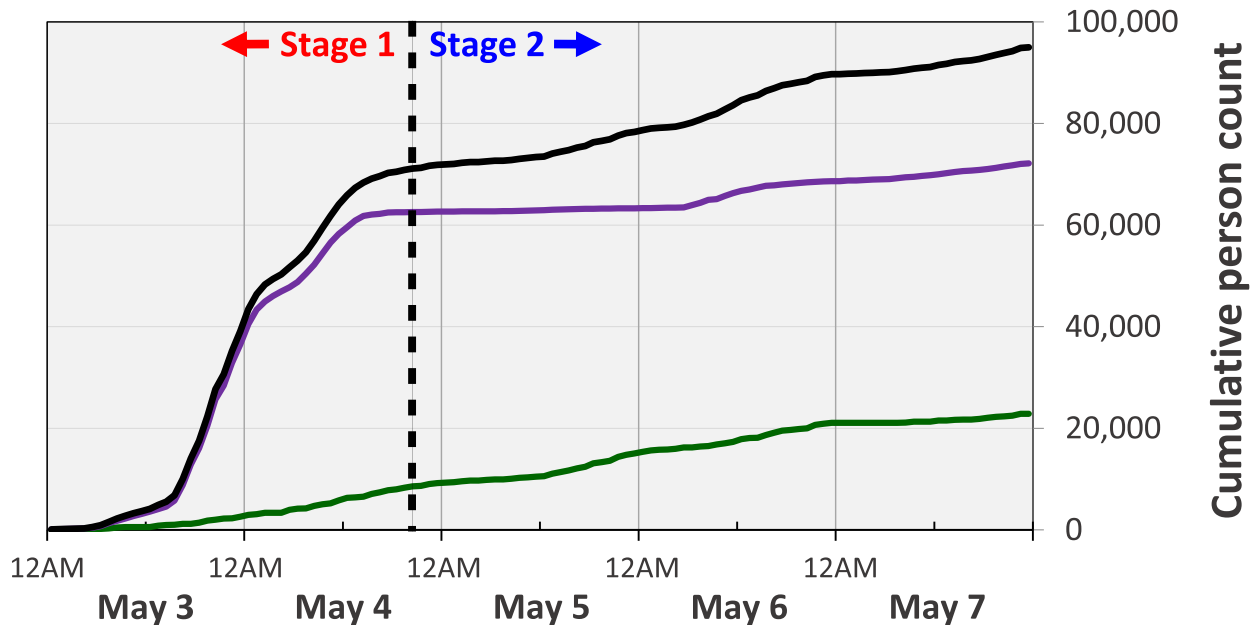


Figure 3. Estimated cumulative evacuee counts (by ground and air) from Fort McMurray and surrounding communities.

4 (at which point Hwy 63 was closed except for emergency vehicles) and picks up again late morning on May 6, when the RCMP-led vehicle convoys were initiated. Air evacuations occurred at a much lower but steady pace from May 3 to 7.

There are several points to note here. Firstly, the cumulative air evacuation curve does not exhibit the S-curve shape of vehicle evacuations. Air was not considered a primary means of evacuation, at least during the initial Stage 1 evacuation. More importantly, aviation is a heavily controlled and regulated system, and passengers do not control aircraft movements. Secondly, the analysis has estimated that a total of 94,000 people were evacuated from Fort McMurray and the northern oil sands sites. Of those, 57,000 had evacuated south on May 3 and 4. Of the remaining 37,000 evacuees, 9,000 were escorted south via the RCMP-led convoys May 6-7, while 28,000 were evacuated via the private oilsands airstrips. The air evacuation consisted of 36 flights departing Fort McMurray International Airport until it was closed on May 4, and 278 flights departing the private airstrips between May 3 and 7. Overall, about 25% of people were evacuated by air between May 3 and 8; however, air played an even more critical role in Stage 2, where it accounted for close to 60% of person movements out of the region.

This analysis has highlighted several key points about the largest Canadian wildfire evacuation in history. Firstly, this evacuation occurred in a two-stage response due to the rapid spread of the wildfire. Each staged played its own role in the emergency response – Stage 1 removed Fort McMurray

residents from immediate danger by utilizing as much of the transportation network as possible, while Stage 2 then served to get the much smaller number of evacuees at the work camps to safety via vehicle convoys and aircraft.

Secondly, from the traffic counters it was observed that Highway 881 was quite underutilized, with respect to its design capacity, during the initial 12 hours of the evacuation. Future evacuation policies might include procedures for traffic routing in order to more effectively utilize capacity and reduce congestion and panic. In addition, the spontaneous contraflow operations were certainly helpful in moving people away from immediate danger; however, its uncontrolled nature may have created unsafe traffic situations (which thankfully did not result in any injuries or fatalities) and blocked access for emergency service vehicles. Future plans could include strategies to manage controlled contraflow operations in coordination with traffic routing plans.

Thirdly, wildfires allow only very short warning times that result in highly urgent evacuation responses. Combined with the remoteness of many communities in Alberta (and throughout Canada in general) and the increasing frequency of climate change-induced weather events, this highlights the need for high-quality provincial and local evacuation plans, as well as a better understanding of our existing transportation network infrastructure. More specifically, it is important to better understand the characteristics of the existing network (in terms of capacities and redundancies)

Fort McMurray evacuations

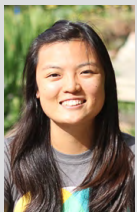


CREDIT: WIKIMEDIA COMMONS - JASON WOODHEAD 23

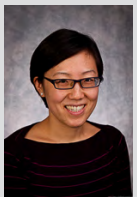
Evacuations underway.

to handle emergency evacuations, as well as identify infrastructure investment needs.

Lastly, it was found that air transportation played a significant role in this evacuation. In a province with many highly isolated communities and populations with only sparse connections to the provincial highway network, there may be a heavy reliance on air transport in emergency situations. Multimodal emergency evacuation plans that exploit intermodal capabilities may provide great benefits in such situations.



Kathy Hui is currently a master's student at the University of Alberta who will graduate summer 2017. She conducted her undergraduate studies at the University of Waterloo in Environmental Engineering, after which her interest in transportation was sparked by a mixture of unreliable bus commutes, transit systems in Asia, and Tom Hanks' performance in *The Terminal*. Her specific interests lie in transportation planning & policy, intercity travel, and airports.



Amy Kim, PhD, PEng, is an Assistant Professor in the Department of Civil & Environmental Engineering, at the University of Alberta. Her research interests are in transportation networks and systems analysis, interregional multi-modal transportation networks, and air transportation with a focus on airport capacity and delay. She received her M.Sc. and Ph.D. from the University of California, Berkeley and her B.A.Sc. from the University of Waterloo. Prior to her doctoral studies, she worked in the transportation engineering and planning practice in both the U.S. and Canada.

What 'Fort McMurray Strong' means to me

BY TERESA WADDINGTON

The following essay originally appeared in [The Globe and Mail](#) on September 22, 2016. It has been reprinted with kind permission from the author to provide a personal perspective on the Fort McMurray evacuations detailed in our feature article. CITE thanks Teresa Waddington for sharing her story.

Some dates stick in your mind. Nov. 16 was the day I found out I got the maintenance manager job up in Fort McMurray. Dec. 21 was the day my husband and I travelled up there (first time for both of us) to house-hunt.

I remember feeling faintly queasy about the constant twilight. The tires of our rental car threw up clumps of dirty snow in the monochromatic cold as we schlepped from one 1980s-era house to another. I wish I could tell you the northern lights shone down in a river of colour, but ... not so much. The stars were bright and beautiful, precise in a way I had never seen in Calgary, but we were definitely thinking it might have been smarter to visit the city before committing to the job.

We finally visited a house that backs onto the Birchwood Trail system, a cute, recently renovated bungalow with a wood stove in the living room and another in the kitchen, and a view out back of endless, towering forest. Our perfect

feature supplement

cabin in the northern woods. On Jan. 6, the moving truck came, and on Jan. 7, we arrived at our new front door.

The mechanics of the next few weeks were the constant learning and feeling of displacement common to all people who move. For weeks, I'd open every cupboard door in the kitchen every time I needed a plate. We explored the extensive cross-country-ski network and fell in love with Vista Ridge, the local ski hill. My kids gained an independence they never had in Calgary, able to go visit new friends on the block by themselves. I missed my mom, though, and cried after talking to people at home. But I enjoyed my new job, and slowly, as the snow began to melt and the sun began spending more time above the horizon, Fort McMurray became home.

The morning of May 3, I headed out to catch my bus, relieved to see that the heavy smoke that had been building from a fire near town had cleared overnight and the day dawned without the ancestral warning smell of fire in the air. At my work site, 75 kilometres north of town, the morning started normally enough, but around noon I started hearing snippets of talk in the hallways. Parts of Fort Mac were being evacuated.

I called Andrew. He had the kids and a full tank of gas, and would meet me at my boss's house in the northern part of town. As I crested the hill into town in my boss's truck, it was a nightmare of red and black. We'd seen the massive plumes of smoke, but now the intensity and span of the fire became obvious. I had never in my life had such crystal clarity on what's important. I wanted my kids, my husband and to get the hell out of there. Everything in my house could burn. I needed my people.

We pulled up and I paced the yard, waiting for Andrew. Traffic was building and so was tension. When our Suburban rounded the corner, I felt a snap like a rubber band in my chest from the fear that had been building. At least we would be together from here.

We couldn't go south any more, the road was closed. As we headed north, it finally occurred to me to ask why on earth Andrew had decided to pack our 18-foot canoe on the roof. My incredibly practical and remarkably survivalist husband had packed not only the canoe, but also his rifle, a 10-pound bag of potatoes and a chainsaw. He figured that if the traffic got so bad that we couldn't get through, we could take the river to Fort Chipewyan (about a week's paddle) and survive by hunting and eating the potatoes. Our wedding photos and family mementos were still at the house. But I must

admit, his logic has more currency in a crisis than my sentimentality.

Thanks to the humanitarian effort deployed by the local oil sand producers, we were on a flight to Calgary that same evening, my kids with no shoes (he remembered the chainsaw, but not their shoes?), to meet our relieved family.

June 1 was the first day I could go home under the re-entry plan for Fort McMurray. Walking up my steps, putting the key in and opening that door – I can't describe the feeling. There is a strange, deep, silent calm about home. I'm not sure anyone feels it until they've closed their door and walked away from the place where they've planted their heart without knowing if they can ever come back.

It's September, and I get a lot of questions about what Fort Mac is like now – if it's changed. Of course it has. But so have I, and so has every person affected by this event. Fort McMurray Strong is a phrase that has gained immense popularity. But the word "strong" resonates in my bones in a way it never did before when I look at my neighbours. Strong isn't about facing crisis and coming through. Strong is about knowing the fire and choosing to come back anyway. It's about knowing that recovery will be years and years in the making. Strong is every family, every neighbour, who hugs a bit longer now because of that glimpse of insight when the fire threatened to strip us bare.

I'm again looking ahead to Jan. 7, our one-year anniversary of moving to Fort McMurray. I'm excited to strap on our skis and explore the new landscape in the Birchwood Trails. But I'm most excited to be cozy in our little cabin in the northern woods, our stoves insulating us from the crazy cold and deep stillness, and – maybe this time – seeing the coloured ribbon of the northern lights streaming across the sky.

Teresa Waddington lives in Fort McMurray, Alberta.



Fort McMurray firefighters stage a greeting for residents returning on June 1, 2016 following the evacuation in early May.

CREDIT: CHRIS SCHWARZ/GOVERNMENT OF ALBERTA



We need you!

Recent Technical Liaison Committee (TLC) membership changes has resulted in an opportunity for CITE members. The TLC is reaching out to invite members who would be interested in being on the Committee to submit a letter expressing their desire, an indication of support from your employer, and a resume to Dwayne.Cross@novascotia.ca by November 12th, 2016.

The TLC is a coordinating committee charged by CITE to initiate, coordinate, and support Canadian projects, international technical initiatives, and membership training. Hence the right volunteer would be a person with substantial technical experience as well as management and leadership abilities.

TLC members are reappointed bi-annually and are expected to attend at least one face-to-face meeting per year, attend at least three conference calls per year, and assist in coordinating assigned projects and duties of the TLC. Expenses are expected to be covered by the employer, but may be subsidized somewhat by CITE depending on budget availability and priorities.

The TLC Terms of Reference which outlines the Committee's and Members' duties, responsibilities, and other details can be found at <https://www.cite7.org/wpdm-package/tlc-terms-reference/>

We look forward to hearing from you!

DWAYNE CROSS

Chair, Technical Liaison Committee

GARRETH REMPEL

Education

Ph.D., Civil Engineering, University of Manitoba, 2011
B.Sc., Civil Engineering, University of Manitoba, 2006
Innovation Award from the World Road Association, 2011

First job in transportation engineering

Surveyor, Manitoba Highways

Current employment

MORR Transportation Consulting Ltd., Founding Partner
TRAINFO Corp., CEO

Professional designations

Registered Professional Engineer (P.Eng.) in Ontario, Manitoba,
and Saskatchewan

How long have you been involved with CITE?

Joined in 2006, have been a member since that time

What roles/positions have you taken on as a member of CITE?

ITE Manitoba Student Chapter President, ITE Manitoba Section
Golf Tournament Organizer, CITE Strategic Planning Committee, CITE Annual Conference Local Arrangements
Committee Member

Family

Wife – Giancarla Rempel; Children – Jackson (7), Charlotte (5), Georgia (1)

Current city of residence

Winnipeg, MB

Personal hobbies

Playing hockey, reading, running



CITE INVOLVEMENT

What is your CITE involvement (past and present)?

I was heavily involved in CITE as a Student Chapter member and volunteer for the Manitoba Section. I was the ITE Manitoba Student Chapter President in 2007 and helped lead the chapter to one of its most successful years in terms of technical activities, community service, volunteering, and social activities. Our chapter planned about 50 activities that year and participated in many national and international events.

For the ITE Manitoba Section, I lead the creation of a Golf Tournament Committee and helped organize the first three annual golf tournament events. These events facilitated networking between Section members, helped expose the Section to other transportation professionals in the province, and served as a valuable source of fundraising revenue for the Section.

I have also been fortunate to receive several CITE scholarships and awards including the John Vardon Memorial Scholarship, Dr. Michel Van Aerde Memorial Scholarship, Boulevard Transportation Group "Transportation in a Sustainable World" Award, and the CITE Rising Star Award.

What do you value most about your CITE membership?

CITE membership has been highly valuable for developing and maintaining a strong professional network.

PROFESSIONAL EXPERIENCE/ACHIEVEMENTS

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

I enjoy the entire problem-solving process, beginning with understanding the problem and project constraints, uncovering the root causes of the problem, contributing to

the development of an innovative solution, and ultimately seeing this solution being successfully implemented.

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

I am proud to have worked on the Comprehensive Truck Size and Weight Study for the U.S. Federal Highway Administration since this was a high-profile project that contributed to the improvement of transportation at a national-scale. I am also proud to be working on connected and automated vehicle technologies at railway crossings since this work has the potential to eliminate accidental collisions between road users and trains and directly save hundreds of lives each year.

Please describe what attracted you to transportation engineering?

I was attracted to this field due to transportation's social and economic impacts, technical challenges and complex systems, and wide range of political, regulatory, and socio-economic issues to address and balance. Since everyone uses the transportation system, I feel like I can positively impact most people's lives on a daily basis.

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

I will consider my career a success if the people I have worked with enjoyed working with me, the people I have worked for found my work to be high quality and effective, and the people that worked for me found me to be a positive influence on their life and career.

What is the first thing people most commonly ask or say when they find out you are a transportation professional?

Why can't you synchronize the traffic signals in the city?

GETTING TO KNOW YOU

If you did not pursue engineering as a career choice, did you have another career in mind?

After obtaining my B.Sc. in Civil Engineering, I contemplated pursuing a Master's in Business Administration. Ultimately, I chose to obtain a Ph.D. in Civil Engineering; however, business continues to interest me and I am advancing my career in this area.

What is the most daring thing you've done?

It's a toss-up between bungee jumping, starting a company, and becoming a parent.

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

The Hard Thing about Hard Things by Ben Horowitz and *The Elegant Universe* by Brian Greene

INTERESTS & PERSPECTIVES

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

My parents have had the greatest influence on my life. They're the ones who supplied a healthy home environment growing up, made sacrifices to provide opportunities for me to succeed, instilled my core values, fostered my self-esteem and work ethic, and offered support and encouragement. Jeannette Montufar, my former graduate studies advisor and current business partner, has had the greatest influence on my career. She is responsible for me choosing transportation engineering as a career, teaching me the skills to succeed in this field, sharing valuable life lessons and insight, showing confidence in my abilities, and agreeing to start a consulting company with me.

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

When I look at how well the transportation system in Canada functions and what it contributes to society, I think transportation engineers have done extraordinarily well. I don't think there's any one thing that needs to change. But I do think that the profession should continue seeking and developing incremental improvements in every area of the practice and achieve a better gender balance.

What is the greatest opportunity you see for the field?

The World Economic Forum has acknowledged that we are entering a Fourth Industrial Revolution which is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres. Connected and automated vehicles are a major component of this revolution and I see this as the greatest opportunity for the transportation system to see reductions in traffic-related deaths and injuries, improvements in sustainable transportation choices, reductions in environmental effects of transportation, increases in travel mobility efficiencies and economic development, and equitable access to transportation. I also see this as one of the greatest challenges transportation has ever faced which makes me extremely excited and fortunate to be in this field at this point in history.

Meet Your CITE Team



STEVEN GARNER

District Administrator

Where do you live?

I live in beautiful Cowichan Bay on Southern Vancouver Island about 50 minutes north of Victoria with my lovely wife, two crazy dogs and an ageless bunny.

What are your hobbies?

Among the things you are likely to find me doing when not devoted to CITE are sailing, painting, woodworking, curling and culinary arts (I'm working on perfecting baking bread, cinnamon buns and muffins on our boat's BBQ!). I'm also an aviation fanatic and have a pilot's licence on my life-to-do list.

Past employment?

I have spent most of my career working in municipal government in various roles involving GIS and IT. Along the way, I have served on many Boards including four years as a member of a police board, director of the BC Association of Police Boards and membership coordinator for the BC Municipal Information Systems Association. I have particular training, experience and interest in strategic planning and governance of non-profit organizations.

When did you start with CITE?

I started with CITE in March 2015 and began implementing our Google apps platform and new website.

What have you been working on?

My current focus is on rewriting our Conference and Executive Guidelines as well as creating a CITE policy manual. I'll also be working on an online submission process for Section annual reports.

What are your priorities for your role in the future?

CITE has recently become a registered non-profit organization. There are a host of obligations that go along with that status and I see my role as to ensure the CITE meets those obligations. It is always my hope that when people think of CITE they envision a well run and vibrant organization.



EVONNE DONAHER

Communications Coordinator

Where do you live?

I live in the easternmost reaches of Canada in beautiful and blustery St. John's, Newfoundland and Labrador.

What are your hobbies?

When not chasing around an energy-filled two-year-old, I can be found dabbling in photography, hiking, neverending home renovations, and light woodworking. I also love eating delicious food from around the world and enjoy the occasional crafty endeavour like card making.

Past employment?

Most recently, I was program coordinator at a small environmental non-profit, working on a topic of personal interest: residential energy efficiency and water conservation. I've also worked in climate change and economic development program delivery at federal and provincial governments. I have been an active volunteer with municipal advisory committees as well as both national and regional non-profit organizations.

When did you start with CITE?

I started learning the ropes in January 2016 and launched my first edition of *Transportation Talk (TT)* in April 2016.

What have you been working on?

My efforts this year have been focused on helping CITE members engage with *TT* as both readers and contributors. I've worked on streamlining its production and design, making it easier to find and read *TT* through issuu.com and social media, and launching new products such as the *My Favourite* feature in this edition!

What are your priorities for your role in the future?

I would like *TT* to be a resource that CITE members can rely on for relevant and useful technical information, newsworthy updates from across the country, and a bit of fun and inspiration from fellow members. To that end, I'll be working on new products that shine a light on innovative, unique, and best practice transportation projects across Canada.



GREATER VANCOUVER SECTION

The Greater Vancouver Section of ITE has had a busy couple months following the summer break with two meetings and our annual golf tournament.

The first meeting was held on September 7th to kick off the second half of the year. Raheem Dilgir, President of TransSafe Consulting, presented on BC's road safety strategy. This presentation included an overview of the evolution of the strategy and then focused on the work of the Safe Roads and Communities Working Committee.

On October 6th, Michelle Babiuk and Geoffrey Ho from TransLink presented on the 2015 Transit Service

Performance Review. This presentation provided an overview of the metrics included in the TSPR and demonstrated how the document can be used to inform municipal land use and transportation planning processes as well as for transit service design.

The 14th Annual GVITE Golf tournament was held on Thursday, September 15th at the Burnaby Mountain Golf Course. The weather was great with over 15 golfers participating in the tournament and dinner, with many prizes given out. Following the success of last year's event, a trivia was provided with transportation related questions asked at the end of every hole.

*Left Top: GVITE President Billy Dong with Raheem Dilgir of TransSafe Consulting
Left Bottom: Michelle Babiuk and Geoffrey Ho from TransLink with Billy Dong
Right: The 14th Annual GVITE Golf tournament*



MANITOBA SECTION

After taking our summer break from monthly technical luncheons, the Manitoba Section had its annual golf tournament on a cloudy September day. But the rain held off and over twenty golfers participated. The golfing was bookended by a hot brunch and a delicious dinner where prizes were handed out. As has become tradition, some prizes are for great golfing...while others are just for showing up and supporting the Section!

ITE Manitoba is moving its monthly luncheons to the Masonic Temple at Winnipeg's famous Confusion Corner! The first session is scheduled for October and these will continue through to 2017. We look forward to more elbow room in the new facility; please come and join us. Note that registration is now online, so check the ITE website for upcoming events and details! <https://itemanitoba.wordpress.com/>

LETHBRIDGE CHAPTER

After a summer hiatus, the Lethbridge Chapter is again holding regular events for the fall. Things were kicked off starting on September 22 when the chapter held its first networking barbeque. Despite the rainy weather accompanying the outdoor event, attendees enjoyed getting to know each other better in a less structured format than the regular monthly luncheon setting. Less than a week later, the chapter hosted a luncheon where Darryl Schalk, Manager of Associated Engineering's Transportation group in Lethbridge, gave a presentation on the recently completed Cimarron Traffic Calming Study prepared for the Town of Okotoks, Alberta. The study was prepared to address growing concerns over traffic volumes, speeds, pedestrian safety, and sightline issues. It employed a multi-faceted public engagement process to integrate input from various public forums into the decision making process.

As the City of Lethbridge is nearing a population of 100,000 residents, the October luncheon will feature a 100k+ conversation to start a thoughtful discussion about

the needs of the community for the next 10 to 30 years. It is anticipated that attendees will be able to draw on their professional experience to provide particularly valuable insights into the transportation needs of the city. City of Lethbridge staff will be on hand to capture the conversation.

Events scheduled later in the year will include a presentation on recent advances in traffic signal technologies, which will be provided by Jinsong Qi, Traffic Signal Operations Engineer for the City of Lethbridge, and an end-of year social featuring chapter elections and a traffic-bowl-like trivia game.

To help fund chapter events and initiatives, the chapter actively seeks sponsorship and recently received generous donations from Stantec and Tetra Tech. Furthermore, the chapter recently increased luncheon dues to ensure that luncheons are self-sustaining. As a chapter, we look forward to the opportunities that the coming months will bring.

Members of the Lethbridge chapter enjoy their fall networking barbeque



UNIVERSITY OF BRITISH COLUMBIA

First Executive Meeting

Kicking off the year, the student chapter hosted its first meeting for new executive members. The turnout was great and there was a diverse crowd of students ranging from second year students to graduate students. Positions were filled for all roles, and discussion was generated on possible events for the future.

Young Professionals in Transportation (YPTV) Vancouver Event

Four students from the student chapter attended the YPT Vancouver's unconference and scavenger hunt event, which was part of the Pro Walk Pro Bike Pro Place conference. The scavenger hunt took place in the morning and one of the participating students ended up being on the winning team! After the scavenger hunt, the unconference took place and students enjoyed having the opportunity to contribute to discussions on interesting transportation topics such as Big Data, shared spaces, and safety. A big shout out to YPTV for hosting a fantastic event!

UNIVERSITY OF BRITISH COLUMBIA - OKANAGAN

Summerland Train Tour

On October 1st, UBCO civil engineering students toured Summerland's Kettle Valley Steam Railway, part of a preserved line branching from the Canadian Pacific Railway. The tour took a restored steam locomotive

passenger line through Prairie Valley on to Trout Creek Bridge, with stunning views of orchards, vineyards, and Okanagan Lake. Afterwards, students received a special technical showcase of KVR's steam locomotive and diesel engine, as well as a hands-on demonstration of railway operations.



student chapter news

UNIVERSITY OF MANITOBA

After winning the Canadian District Traffic Bowl in Kelowna, four members of the student chapter, Giuseppe Grande, Steven Wood, Auja Ominski, and Joel Penner, traveled to the ITE Annual Meeting and Exhibit in Anaheim, CA. Despite being in California, the students managed to study hard for the ITE Collegiate Traffic Bowl. In their first game, they faced Cal-Poly San Luis Obispo, the defending champions, and University of Massachusetts Amherst. The game was a nail-biter. Unfortunately, U of M lost to Cal-Poly by a score of 5001 to 5000. Thankfully, this did not stop the students from enjoying the rest of the

conference and meeting students from many universities across the United States. They attended interesting presentations, including discussions of the Hyperloop and Uber, as well as a baseball game with students from two other student chapters. The students really appreciated the support from CITE and everyone who cheered on the lonely Canadian team. The chapter looks forward to the Annual Meeting next year in Toronto, where the Canadian Traffic Bowl team will have the home field advantage.

At the beginning of September, the student chapter collaborated with the Manitoba section to host the 7th Annual Golf Tournament at Pine Ridge Golf Club. While the day was gloomy, the rain held off for the tournament and everyone had a good time. Thank you to everyone who came out to support the student chapter and Manitoba section; it was a slice (pun intended)! We look forward to seeing you all again next year!

With the beginning of the new school year, the chapter held their kick-off meeting and elections. Congratulations go out to all the new executive and subcommittee leaders on their positions! Many plans are in the works for the next couple of months and the student chapter is excited to see what the new year brings!



Top: U of M members (L-R) Joel Penner, Giuseppe Grande, Auja Ominski, and Steven Wood represented the Canadian District at the ITE Collegiate Traffic Bowl in Anaheim

Bottom: University of Manitoba student chapter members at the annual Manitoba Section golf tournament

MOHAWK COLLEGE

Since our last update in the Spring Edition of Transportation Talk, the Mohawk College ITE Student Chapter has concentrated its efforts on two events: the 2016 CITE Collegiate Traffic Bowl in Kelowna and the Transportation Association of Canada (TAC) 2016 Conference in Toronto.

On Monday, June 6th, Mohawk College participated in its second Traffic Bowl. In a long-awaited rematch from 2014, Darren Loro, Omar Shams and Lauren Short competed against the University of New Brunswick and the University of Toronto in the first round. While UNB was victorious, Mohawk is very proud of its team for their efforts in this year's competition.

TAC was very generous to offer free student registration to attend this year's conference in Toronto from September 25th-28th. As such, the Mohawk College ITE Student Chapter represented the college by attending the various technical sessions and networking events. We were also proud to see three Mohawk College recipients of TAC Foundation Scholarships among the many applicants across Canada. Congratulations to Shaymaa Al-Ani, Ryan Krantz and Omar Shams.

*Sean Nix
Faculty Advisor*



L-R: Omar Shams, Lauren Short and Darren Loro representing Mohawk College at the 2016 CITE Collegiate Traffic Bowl in Kelowna.



L-R: Omar Shams (student), Ali Hedayeghi (CIMA+), Sean Nix (Faculty) and Adrian Hetherington (student) at the 2016 TAC Conference in Toronto.

RYERSON UNIVERSITY

RITE is back!

What we have done so far: We started this summer by assisting the Canadian Institute of Transportation Engineers to host a Canadian Capacity Guide (CCG) Training session that included great presenters such as Dan Havercroft and Chris Blackwood. We then kicked off the beginning of the school year by representing RITE at the 2016 Transportation Association of Canada (TAC) Conference in Toronto.

What's yet to come: Over the next few months, RITE will be planning a Synchro training session and a networking event that will be open to both RITE members and other surrounding schools with ITE Student Chapters. Additionally, we are looking to expand our team and

promote it by having industry guest speakers at our upcoming events. We look forward to attending upcoming conferences and planning many more events.

We welcome any guest presentations from industry members – particularly from Ryerson University graduates. If you are interested in participating in an RITE event, please contact the RITE President, Maria Espinosa, at maria.espinosa@ryerson.ca.

*Maria Espinosa
RITE President*

*Ryerson University
CITE Student Chapter
President Maria
Espinosa at the TAC
Conference 2016*



student chapter news

CARLETON UNIVERSITY

Four members of the Carleton University CITE Student Chapter recently attended the Transportation Association of Canada (TAC) Conference & Exhibition held in Toronto, Ontario between September 25 – 28, 2016. The members enjoyed TAC's Student Day by participating in various technical sessions, group tours and a student social mixer event covering a variety of transportation engineering topics from autonomous and connected vehicles to complete streets design.



Carleton Chapter members at the TAC Conference and Exhibition
L-R: Afshin Pakzadnia, Harini Subbaiah Venkatesh, Brooke Jones, Anthony Kwok

WIN A FREE CONFERENCE REGISTRATION!



excite

CALLING ALL STUDENT CHAPTER MEMBERS!

How well do you know the CITE professionals in your local area? From now until March 15, 2017, you could win one of three free registrations to the 2017 ITE Annual General Meeting in Toronto by completing a variety of challenges to connect with more local professionals:

- Hosting a local professional to present at a student event;
- A group of six or more students attending a professional section event together;
- Organizing a local technical tour and inviting the local professional chapter;
- Adding your event to the CITE events calendar;
- and more!

PROFESSIONALS CAN WIN TOO!

Are you a professional who wants to support your local student chapter? You can also earn an entry to win a free conference registration by presenting at or participating in a student chapter event.

For details, check out the *Student Events Sweepstakes* section on the **excite** website:
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Issue	Release Date	Submission Deadline
Winter 2017	Jan 26, 2017	Jan 10, 2017
Spring 2017	Apr 2017	Mid-March 2017

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Search by date, topic, or location or use the map and calendar views to find upcoming transportation industry events near you.

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