

Pavement Asset Design and Management Guide Coming Soon

A new edition of one of TAC's key publications in the pavements area will be released in the coming months. The *Pavement Asset Design and Management Guide* (PADMG) will replace the *Pavement Design and Management Guide*, originally published in 1997.

The new guide contains updated information on Canadian pavement design and management practices and addresses key industry issues such as sustainability, climate change and innovative technology. Areas of future need are also highlighted within the text.

This valuable reference document remains an excellent resource for Canadian practitioners. Private and public sector organizations will find the PADMG a useful design and management tool when working with new technologists, engineers and managers. The academic community will also be able to use the guide as a textbook for undergraduate and graduate engineering students.

Led by Susan Tighe from the University of Waterloo, the work was carried out by a consortium comprised of eight organizations: Applied Research Associates Inc., EBA Engineering Consultants Ltd., Golder Associates

Ltd., Stantec Consulting Ltd., as well as the universities of Calgary, Laval, Saskatchewan and Waterloo. Final editing of the publication was completed by Stephen Goodman of AME Materials Engineering.

The initiative is supported by **Alberta Transportation, British Columbia Transportation and Infrastructure, Manitoba Infrastructure and Transportation, New Brunswick Transportation and Infrastructure, Newfoundland and Labrador Transportation and Works, Nova Scotia Transportation and Infrastructure Renewal, the Ministry of Transportation of Ontario, Prince Edward Island Transportation and Public Works, the Ministry of Transport of Quebec, Saskatchewan Highways and Infrastructure, Transport Canada, Yukon Highways and Public Works, the cities of Calgary, Edmonton and Montreal, as well as the Cement Association of Canada and the Ontario Hot Mix Producers Association, in conjunction with the Asphalt Institute.**

Information on seminars on the PADMG to be held in venues across Canada will be available early in 2013. 



2013 TAC Conference and Exhibition

Transportation: Better – Faster - Safer

September 22-25
Winnipeg, Manitoba

Hotels and travel information on Winnipeg will be posted on TAC's conference website early in 2013. Exciting changes are in store as the Opening Plenary Session takes on a new format as the Lions' Den second edition. Stay tuned!

The Call for Papers / Posters for the 2013 TAC Conference has been launched. Authors must submit their abstracts by December 18, 2012.

Hope to see you in Winnipeg!

In This Issue

New TAC Project to Develop Guide to Sustainability of Bridges
Fredericton Convention Centre Welcomed over 850 Delegates and Companions
Reducing GHG Emissions in the Canadian Cement Industry

Data Collection Practices for Urban Travel and Moving People
Salt Management Guide and Syntheses of Best Practices Get Updated
Truck Lanes in Urban Areas Report Approved for Publication

New TAC Project to Develop Guide to Sustainability of Bridges

A new project to develop a guide about sustainability considerations for bridges in the Canadian context is being undertaken through TAC's Structures Standing Committee.

For many years, the bridge engineering community in Canada has been practicing sustainable concepts. However, there have been no established national sustainability guidelines specific to bridges.

Context-sensitive, durable bridges with low life-cycle impacts, through selection of materials, structural systems, methods of construction and efficient and effective management strategies, can minimize the impacts on users, the environment and communities.

A consultant is currently being sought to prepare the new guide under the direction of a project steering committee. The guide is expected to include a synthesis of best practices, assessment tools and examples of key performance indicators. This will assist users in making informed decisions at various stages of a project's life cycle, including planning, design, procurement, construction, maintenance, operation and decommissioning. Used for sustainability considerations of bridges, retaining walls, large culverts and ancillary structures, the guide will not include a formal rating system such as LEED.



Agencies committed to funding this effort are **Alberta Transportation, British Columbia Transportation and Infrastructure, Manitoba Infrastructure and Transportation, the Northwest Territories Department of Transportation, the Ministry of Transportation of Ontario, the Ministry of Transport of Quebec, Saskatchewan Highways and Infrastructure, the Cement Association of Canada, Structural-Bridges** and the **cities of Calgary, Edmonton, Ottawa, Montreal, Saskatoon, Toronto and Winnipeg.** 

A Moment in Time – Historical Milestones in Transportation

As a prelude to TAC's centennial in 2014, A Moment in Time features historical anecdotes showcasing milestones in transportation. Montreal will host the Association's 100th birthday celebrations, providing an opportunity to highlight important Canadian achievements in the transportation sector.

Red River Cart

At the elbow of the North Saskatchewan River, September 1871, albumen print. The Red River cart was the primary means of transporting goods among the Métis traders.

Source: Library and Archives Canada/PA-138573.



*A quarterly publication of the Transportation Association of Canada
ISSN 0317-1280 ~ Publications Mail
Commercial Sales Agreement No. 1708201
2323 St. Laurent Boulevard, Ottawa K1G 4J8
Tel. (613) 736-1350 ~ Fax (613) 736-1395
www.tac-atc.ca*

Editor: Lynne Parisien

*Contributors: Erica Andersen, Ken Becking, Darren Charters,
Glenn Cole, Katarina Cvetkovic, Michel Gravel, Adam Hayashi,
Sandra Majkic, Rod Sanderson, Craig Stackpole, Sherry Sullivan*

Designer: Debi Woods

Send your story ideas and suggestions to news@tac-atc.ca

TAC is a national not-for-profit association with a mission to promote the provision of safe, secure, efficient, effective and environmentally and financially sustainable transportation services in support of Canada's social and economic goals.

The Association is a neutral forum for gathering or exchanging ideas, information and knowledge on technical guidelines and best practices.

In Canada as a whole, TAC has a primary focus on roadways and their strategic linkages and inter-relationships with other components of the transportation system.

In urban areas, TAC's primary focus is on the movement of people, goods and services and its relationship with land use patterns.

Fredericton Convention Centre Welcomed over 850 Delegates and Companions

Built with green principles in mind, the LEED certified Fredericton Convention Centre welcomed over 850 delegates and their companions at the 2012 TAC Conference & Exhibition.

Some highlights of the event included:

- ◆ The Sunday Welcome Reception allowed delegates and stakeholders to visit the 65 transportation-related booths showcased at the TAC Exhibition. The 2012 W.H. Yeates Award for Best Exhibit was presented to Atlantic Industries Limited, while ADS Canada and Armtec received an honourable mention.
- ◆ Over 90 local conference volunteers sporting bright yellow vests representing New Brunswick Transportation and Infrastructure and the City of Fredericton worked tirelessly to ensure delegates and companions had a positive experience at the 2012 TAC Conference & Exhibition.
- ◆ The C.W. Gilchrist Medal, presented during the Monday Awards Luncheon, was awarded to principal author Alfred Guebert and co-authors Irini Akhnoukh, Richard Chow, Sarah McDonald, Corinna Mulyk, Mark Pinet and Siddharth Sharma for best technical paper in the area of highway transportation. The paper was entitled *Variable Speed Limits Framework on a Pilot Study on Alberta Highways*.
- ◆ Greener practices implemented at the 2012 TAC Conference & Exhibition included digital signage, virtual conference promotion, badge recycling bins, and fewer copies of printed materials on site. All promotional materials emphasized online registration. As a result, more than 550 attendees out of 858 registered for the conference using the online registration system.

To read more about the 2012 TAC Conference & Exhibition, visit www.tac-atc.ca/english/annualconference/tac2012/english/index.htm.



Six keynote speakers offered a unique take on the conference theme at the Opening Plenary Session, including Director of Rhode Island DOT and AASHTO Vice-President, Mike Lewis.



Lions' Den provided an innovative platform to share high-priority information and instigate change within all organizations.

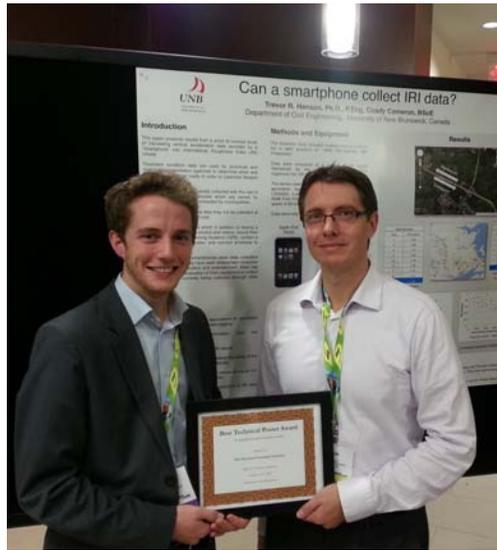


The 2012 W.H. Yeates Award for Best Exhibit was presented to Atlantic Industries Limited.



The Richard J. Currie Center set the stage for local cuisine and entertainment at the local showcase event.

A poster entitled *Can a Smart Phone Collect IRI Data?* received the award for best contribution on pavements in a poster session. From left to right: Coady Cameron, co-author, University of New Brunswick student and Trevor Hanson, co-author, Professor, Civil Engineering, University of New Brunswick.



Wabanaki Elder Maggie Paul gave the blessing before the banquet meal service, accompanied by her grandson.

Applied Human Factors in Road Safety Guide Approved for Publication

TAC's Road Safety Standing Committee and its Canadian Road Safety Engineering Handbook (CRaSH) Subcommittee have completed the development of a human factors resource to support Canadian road practitioners. Approved by the Chief Engineers' Council, the document complements the existing and future TAC publications related to road safety.

The *Applied Human Factors in Road Safety Guide* (Book 9 in the CRaSH series) will be useful to highway designers, traffic engineers and other road safety practitioners in their work on various rural and urban environments. The guide also provides support to related books of the road safety series, as well as other TAC manuals and guidelines.

This practical guide for the application of human factors to road design and traffic operations focuses on road safety in a Canadian context. It provides practitioners with a basic understanding of road user capabilities, performance and behaviours, and also includes several

practical tools for the application of human factors, including: design consistency, positive guidance, self-explaining roads, driver information load analysis and human factors axioms for road safety. The material is intended for all road users including motorists, pedestrians and cyclists.

Intus Road and Safety Engineering Inc. carried out the work for this project. The final document is being prepared for publication by the Association's Secretariat, with publication anticipated in 2013.

Funding partners included **Alberta Transportation, British Columbia Transportation and Infrastructure, the Ministry of Transportation of Ontario, the Ministry of Transport of Quebec, New Brunswick Transportation and Infrastructure, Saskatchewan Highways and Infrastructure, the Canadian Institute of Transportation Engineers, the Insurance Corporation of British Columbia, TransLink, Transport Canada** and the cities of **Edmonton, Montreal and Toronto.**

**MORE EXPERTS,
THINKING MORE INNOVATIVELY,
DESIGNING MORE INTELLIGENTLY,
MANAGING MORE PRODUCTIVELY,
PARTNERING MORE POWERFULLY.**

www.aecom.com

AECOM

CH2MHILL® + Halcrow
Transporting the World



Learn more by visiting ch2mhill.com

Reducing GHG Emissions in the Canadian Cement Industry

Editor's Note: In this contribution to TAC News, Sherry Sullivan and Adam Hayashi, Cement Association of Canada, discuss how the growing demand for concrete as a building material creates pressure to find more sustainable solutions in the industry. Proposed by TAC's Climate Change Task Force, this feature is one in a series of articles profiling climate change-related initiatives of TAC and its member organizations. Interested organizations are encouraged to contact the newsletter editor to submit an article.

Over the past number of years, a scientific consensus has emerged that climate change is happening and that human activity contributes to it. As a result, many industries are examining how they can reduce their emissions of greenhouse gases (GHGs), including carbon dioxide (CO₂), that cause climate change.

For centuries, concrete has been a key material in the world's infrastructure and is used more than any other building material in the world.^{1,2} Concrete's widespread use means that it is part of our environmental footprint and, correspondingly, that measures to reduce its environmental impact may have a large effect. The growing demand for concrete as a building material³ creates that much more pressure for more sustainable solutions in the industry.

In order to understand the environmental considerations associated with concrete, it is important to understand how it is made. Concrete is a composite construction material made of aggregates (60% to 75% by volume) and paste (25% to 40%). The quality of concrete depends on the paste and aggregate, and on the bonds between them. In properly made concrete, every particle of aggregate is completely coated with paste, and all the spaces between aggregate particles are completely filled with paste.⁴

The paste is made up of cement and water, with the cement composed mainly of clinker (the main ingredient in cement). Small amounts of other cementing materials, such as slag and silica fume, or admixtures, may also be included to lend different characteristics to the cement, and a source of sulfate, often gypsum, is also added to the clinker to make cement.

Canada's cement industry has made many improvements in its manufacturing processes and efficiency over the years that have reduced GHG emissions. There are opportunities for further

improvement, but the nature of cement manufacturing does limit how much CO₂ can be removed from the process.

There are two main sources of CO₂ emissions in cement manufacturing. The first source is the combustion of fuels to heat the kiln, the second is from a chemical reaction with limestone called calcination.

There is significant opportunity to reduce combustion-related CO₂ emissions by replacing traditional fossil fuels with alternative and renewable fuels and many Canadian facilities have adopted this approach. To directly reduce calcination-related CO₂ emissions requires supplementing regular clinker with other materials in the production of concrete.

Normally, Portland cement is produced by inter-grinding clinker with about 5% limestone. Contempra, also called Portland-limestone cement or GUL in the Canadian Standards Association cement and concrete standards, is cement made by inter-grinding up to 15% limestone. The resulting concrete has the same strength and durability as regular Portland cement concrete, but its production reduces CO₂ emissions by 10% compared to regular Portland cement.

The manufacturing process of Contempra involves modifying the proportions of clinker and limestone before final grinding. Both the limestone and clinker particles are ground finer than in regular Portland cement, with the softer limestone ground even finer than the clinker.

For several years in advance of Contempra's launch, the Canadian cement industry dedicated substantial resources to optimizing the size and distribution of particles with the goal of ensuring performance equivalent to regular Portland cement concrete. As a further quality assurance step, the limestone used in Contempra is subject to three additional tests before manufacturing.



Experience Enhancing Excellence

Head Office: 905.940.6161 - GTA West: 905.364.6161

Environmental Engineering
Environmental Management • Environmental Sciences
Land Development • Transportation

www.ColeEngineering.ca

TRANSPORTATION

www.hdrinc.com



Smarter Solutions

- Transportation Planning and Engineering
- Transportation Safety and Systems
- Public Transit
- Financial Strategy and Risk Analysis
- Roadway Design

*Licensing may vary by province.

Contempra has been used in Europe for over 25 years under the name Portland-limestone cement. Its long history and equivalent performance to regular Portland cement mean that no significant changes to concrete mix designs are normally required when adopting Contempra. It is listed as Portland-limestone cement in the updated Canadian Standards Association cement and concrete standards (CSA A3001-08 and CSA A23.1-09) referenced in the *National Building Code of Canada* and several provincial codes including *the Ontario Building Code*.

Contempra is now widely available across Canada. It has been used in a number of applications, including paving projects. For example, Contempra was used in 2010 to pave part of Highway 401 near Toronto in a pilot project conducted by Holcim Canada, University of Toronto, and the Ontario Ministry of Transportation.

Once it is adopted for all suitable concrete applications, Contempra is expected to reduce Canada's GHG emissions by up to 900,000 tonnes per year, the equivalent of removing 172,000 cars from the road or planting 23 million trees.

These are just a few examples of strategies being pursued by the cement and concrete industry to reduce its environmental footprint and make a larger contribution to more sustainable development.

(Footnotes)

- 1 Lomborg, Bjørn, *The Skeptical Environmentalist*, (Cambridge, 2001).
- 2 John, Vanderley M., "On the Sustainability of Concrete", Industry and Environment, April – September 2003, UNEP.
- 3 See www.ecosmartconcrete.com.
- 4 Kosmatka, Steven et al, *Design and Control of Concrete Mixtures*, Eight Edition, (Portland Cement Association, 2011).

Data Collection Practices for Urban Travel and Moving People

A report about changing practices in the collection of data on the movement of people has been approved by TAC's Urban Transportation Council.

High-quality, comprehensive data on travel behaviour, transport network performance and associated land use characteristics are essential to the planning and design of urban transport systems. The data assist with understanding transportation needs and issues as well as the design and evaluation of service and policies.

Conventional survey methods may no longer be adequate and new, improved methods are required to meet changing needs.

The new report presents a practical, comprehensive framework on how to collect, process and manage data on the movement of people by all modes in Canadian urban areas. It addresses data needs across a wide of range of transportation agencies.

The report was developed as part of a project overseen by the Transportation Planning and Research Standing Committee.

The project included an extensive review of the survey and data collection literature that systematically identified current and emergency data collection issues, needs and methods. A review was also conducted of data integration, fusion and synthesis methods that can be used to combine data from diverse sources. An original survey of Canadian transportation agencies was also undertaken by the project team and identified current Canadian data collection practice, issues and needs.

The project work was conducted by **Lee-Gosselin Associates Limited** with Eric Miller, **University of Toronto**, as principal investigator. The report will be published by TAC in 2013.

The initiative was funded by the **Ministry of Transportation of Ontario**, the **Ministry of Transport of Quebec**, **Transport Canada**, **Agence métropolitaine de transport**, **Metrolinx**, **TransLink**, **Halifax Regional Municipality** and the **cities of Edmonton, Mississauga, Montreal and Ottawa**.



35 Years of:
Quality • Innovation • Service • Professionalism

- Transportation
- Civil/Municipal
- Land/Site Development
- Construction Survey
- Project Management
- Water Resources

Edmonton: (780) 440-4411
Red Deer: (403) 340-3022 www.al-terra.com



Canadian Transportation Award Recipients Shine at TAC Conference

The Canadian Transportation Awards Program (CTAP) recipients were recently honoured at TAC's preeminent gathering of transportation professionals, the 2012 TAC Conference and Exhibition in Fredericton, New Brunswick.

The Honourable Claude Williams, New Brunswick Minister of Transportation and Infrastructure, and TAC President, Doug McNeil, presented four Canadian Transportation Awards at the closing banquet of TAC's October conference.

Launched in 2005, CTAP is intended to recognize leadership, excellence and achievement in all modes and segments of the transport sector. An independent panel of judges with multi-modal representation selected the award recipients after reviewing nominations from across Canada.

Gerry Forbes, Intus Road Safety Engineering President and Chief Executive Officer, received the **Transportation Person of the Year Award** for actively contributing to the advancement of road safety for more than 20 years.

"On a personal note, it is rewarding to know that I am contributing to the advancement of the Canadian transportation industry. Winning this award has certainly energized me to continue taking a leadership role in providing better and safer road infrastructure in Canada – whether that means consulting on an individual intersection at a project level, conducting research into the safety effects of different design choices, providing training, or developing national guidelines and policies to assist road authorities."

Gerry started out as an instructor of the Ontario Good Roads municipal training courses and progressed to McMaster University where he was nominated for a teaching award. His continuing education courses focus on in-service road safety reviews and audits, human factors and speed management. "If Canada truly wants to provide the safest roads in the world," explains Gerry, "then we simply must tackle the issue of speed. That means not only providing self-enforcing roads and forgiving infrastructure; it means a shift in societal attitudes about speed, better engineering of vehicles, and even a change in the beliefs of engineering practitioners."

Currently the lead road safety auditor for the New Brunswick Route 1 Gateway project, a major trade corridor between Atlantic Canada and the Eastern United States, Gerry is the primary author and principle investigator for TAC's *Applied Human Factors Guide for Road Safety*, and the *Speed Management Guide* for Transport Canada.



Photo: Gerry Forbes, 2012 Transportation Person of the Year

Biljana Rajlic, Vice-President at Hatch Mott MacDonald (HMM), received the **Award of Excellence**, for outstanding contributions to the advancement of design, construction and safety of Canadian bridges.

"One challenge that HMM strives to overcome is "cookie cutter" design. Often it is easier and cheaper to deliver the same design over and over again, but at HMM we are always trying to push our engineers to apply the knowledge they possess and to produce the best solution for every project. As engineers, it is up to us to push the envelope, to try something new and innovative and to give our clients the best we can."

Biljana championed the innovative design of improved efficiency NU bridge girders for the \$1.4 billion Windsor Essex Parkway Project, a positive change to the bridge industry in Ontario. She also led a specialist team in the design of prestressed, precast concrete bridge girders to withstand severe fire scenarios. Girders can now maintain their structural integrity without the need for protective coating. Biljana developed the first use of precast box girders on a multi span bridge for

One Team.
Infinite Solutions.



Stantec's transportation group provides comprehensive planning and engineering services for pedestrian, cycling, road, transit, rail, and aviation projects.

Visit stantec.com for more information.



Global Expertise. Local Strength.

valmont 
WEST COAST ENGINEERING

The Canadian leader in steel & aluminum pole manufacturing, technology and engineering.

Poles & Sign Structures ■ Traffic Signal
Street & Area Lighting ■ Custom ■ High Mast
Roadway & Residential ■ Trolley/Catenary
■ Underground Junction Boxes

Delta, BC: 604-946-1256
Barrie, ON: 705-721-1090

Winnipeg, MB: 204-987-3110
www.valmontwce.com

the Ministry of Transportation of Ontario (MTO) in 2010. In addition, she engineered the first use of Lafarge's ultra high performance concrete waffle slab for MTO, successfully advancing the state-of-the-art structure prefabrication and use of composites and high performance materials.

The Award of Achievement was presented to **Mary-Jane Gravelle**, Director, Accessible Transportation, Canadian Transportation Agency, for having achieved measurable improvements to the access of persons with disabilities within the federal transportation network.

"One of the key challenges in doing our work is maintaining the careful balance between the rights of persons with disabilities to equal access to Canada's national transportation system and the economic and operational realities facing transportation service providers. We need to carefully apply the human rights underlying this equal access while ensuring that unrealistic expectations aren't being placed on transportation service providers."

Mary-Jane first joined the Agency as Senior Analyst and was later promoted to Manager, Air Licensing and Charters. In her current capacity of Director of Accessible Transportation, Mary-Jane developed a series of voluntary guidelines for the transportation industry to accommodate persons with disabilities to Canada's trains, planes and ferries. She regularly consults with leading industry experts and stakeholders to bring practical solutions and to develop consensus. Using progressive and innovative processes under Mary-Jane's leadership, timelines for accessibility complaints have been substantially reduced. She has led the Directorate in the development of a risk-based compliance and monitoring strategy, including guidelines and codes of practice for the transportation industry.

Dr. Eric Hildebrand, Professor of Civil Engineering at the University of New Brunswick, received the **Award of Academic Merit**, which recognizes a long-term contribution to the advancement of the academic field and to the development of tomorrow's transportation leaders.

Eric began his career as Assistant Professor of Civil Engineering with the University of New Brunswick. In addition to his current teaching duties, he serves as Director of Graduate Studies in Civil Engineering, and Coordinator of the University's Transportation Group. Dr. Hildebrand has recently delivered teaching courses to officials in Costa Rica and has lectured at the prestigious Monash University in Australia and the University of Canterbury in New Zealand. He has supervised over 20 Masters and Ph.D. students in transportation engineering, spawning a new generation of transportation professionals cultured in road safety. Recognized multiple times as recipient of the Eric Garland Excellence in Teaching Award, he has also been featured in *MacLean's Guide to Canadian Universities*.

"Teaching in Costa Rica on different occasions has perhaps been the most rewarding. While the language barrier creates some difficulty the extra effort is worthwhile because there is an opportunity to make wholesale improvements to their transportation system. My courses have focused on road safety and they are currently near the start of the learning curve. They are genuinely appreciative of what you can teach them to improve their highway safety performance. Over the coming years they have an opportunity to prevent many roadway deaths with better engineering practices." 

Small Municipalities Reach Out to TAC Membership

Earlier this year, the Small Municipalities' Task Force (SMTF) completed a survey of TAC member municipalities targeting a population less than 50,000.

As per the SMTF work plan approved by TAC's Board of Directors at the 2012 spring technical meetings, the survey is a way to build professional networks within the TAC membership and draw interest from both small urban and rural communities.

The purpose of the survey was to gather information about how TAC could assist small municipalities who may be lacking resources or have limited access to information, and promote SMTF activities and initiatives specifically targeted toward small communities.

Regardless the duration of their membership, respondents highly valued TAC and its services. The majority of survey participants were Chief Administrative Officers or Senior Management team members. Seventy-one percent of respondents indicated that their most urgent needs were access to tools and resources, followed closely by access

to relevant information (58%) and access to networking events (29%).

In response to the question, "How important are transportation issues in your jurisdiction relative to other issues", fifty eight percent of respondents reported very important, while forty-two percent indicated somewhat important.

Sixty percent of all respondents indicated they primarily used the internet to access information about transportation services, while the preferred information sharing method was almost a tie between the TAC Spring Technical Meetings and the TAC Conference and Exhibition.

The overall results demonstrated the importance of the small municipalities' program, tailored to meet the needs of this target audience. It also sparked the interest for joining the Task Force and will help shape the program when considering future initiatives and services.

New Brunswick's Experience: Innovations and Opportunities in Small Municipalities

Editor's Note: In this contribution to TAC News, Darren Charters, Traffic Engineer, City of Fredericton, reports on the small municipalities' panel discussion recently held in Fredericton at the 2012 TAC Conference. Proposed by TAC's Small Municipalities' Task Force, this feature is one in a series of articles profiling issues and challenges faced by small communities. Interested organizations are encouraged to contact the newsletter editor to submit an article.

It was a fantastic experience to chair this panel discussion, even after the rough start due to technical difficulties. The objective of this panel was to showcase projects and initiatives, undertaken by local municipalities, with the hope of demonstrating to attendees that even though we represent small municipalities, we are doing big things.

Peter Allaby, Transportation Engineer, exp Services Inc., kicked off the presentations by recounting the experience, and process involved, with implementing the first roundabout in Fredericton, New Brunswick. This presentation was intended to provide guidance to stakeholders contemplating the installation of a roundabout in their jurisdiction.

Serge Dupuis, Manager of Engineering, City of Dieppe, discussed an interesting traffic calming project where a mini-roundabout was successfully installed on a busy residential street after an extensive public consultation and education campaign.

The next presentations focused on projects related to active transportation. Tim O'Reilly, Manager, Pedestrian and Traffic Services, City of Saint John, presented the innovative idea of installing a two-way, temporary bike lane in the middle lanes of a six-lane major arterial roadway during the rehabilitation, and subsequent closure, of the Saint John Harbor Bridge. Stephane Thibodeau, Transportation Coordinator, City of Moncton, explained the innovative method used to formulate the city's active transportation plan and some of the significant challenges faced during the implementation phase.

Mark Gunter, Transportation Engineer and Business Manager, Opus International Consultants (Canada) Limited, provided an overview of the *Capital City Pedestrian Crossing Study* that was completed for the City of Fredericton. The study was intended to highlight the strengths, and weaknesses, of the city's pedestrian facilities and to present recommendations based on the findings of several in-service safety reviews and an extensive public feedback campaign.

Perhaps the most important point to take away from this panel discussion is that collaboration has huge benefits, and often leads to more successful projects. The casual format and previous interaction between presenters helped them draw from each other's experience regarding traffic issues and transportation projects.

Attendees were also given the opportunity to ask questions to the members of the panel who provided their unique insight into dealing with transportation related issues in small municipalities.

Additional information on Small Municipalities' Task Force (SMTF) initiatives, as well as the videotaped panel discussion from the 2012 TAC Conference, can now be viewed on the TAC website at <http://tac-atc.ca/english/councilsandcommittees/smallmunicipalities>.

Interested in Joining the SMTF?

The SMTF is looking to recruit members from small municipalities to help provide topics of interest to their growing communities and provide guidance to the issues they face. New members are able to bring fresh, new ideas which can benefit all municipalities across the country. To obtain additional information or join the SMTF, contact Sandra Majkic at smajkic@tac-atc.ca



islengineering.com

Inspiring Sustainable Thinking

Committed to integrating sustainable solutions into our project work and our corporate culture, ISL Engineering and Land Services delivers planning and design solutions for transportation, water, land and environmental projects.

Proud to be recognized at the 2011 Canadian Consulting Engineering Awards.



More than 55 years of award-winning service

Markham Burlington Calgary Kingston Kitchener-Waterloo
 London Niagara Falls Ottawa Toronto Vancouver Victoria

www.delcan.com

2012 Conference Videos Now Available

The 2012 TAC Conference & Exhibition Recap is now available for your reading and viewing pleasure on the TAC website.

This special section of the conference website includes the papers by category, author and title, an image gallery, a video gallery featuring the Opening Plenary Session, the Lions' Den, the Small Municipalities panel discussion, the President's Luncheon and the 2012 conference recap video montage.

In-depth interviews with award recipients, articles on the Lions' Den and Plenary Session, candid snapshots of the Local Showcase evening and networking events, are also in store for you in TAC's 2012 post-conference virtual magazine entitled *Focus on Innovation*.

TAC Foundation Prepares its 2013 Scholarship Program

The TAC Foundation will again be offering its Scholarship Program to support and encourage bright, young college and university (undergraduate and graduate) students pursuing studies and a career in transportation.



Full details and application forms for the 2013 TAC Foundation Scholarship Program will be available online at www.tac-foundation.ca. **The deadline for applications is February 13, 2013.**

In 2012, the TAC Foundation scholarship program was bigger and better than ever, offering 51 scholarships with a total value of \$193,500. Since its inception, over 270 scholarships worth more than \$1.1 million have been awarded.

Why support the TAC Foundation?

The TAC Foundation is funded by donors from a wide variety of organizations and individuals involved in transportation. Supporting the TAC Foundation is an investment in the future of Canadian transportation, and donors are recognized as leaders in the

transportation and roadways sectors. The Foundation not only helps students directly through the awarding of scholarships; it raises the visibility, image and profile of the transportation industry in the Canadian education system.

Donations from organizations interested in supporting the TAC Foundation, through either a named scholarship or a donation to the general programs fund, are still being accepted! Becoming a donor is a way for organizations to promote careers in transportation while making both a positive impression upon and direct contact with eager professionals soon entering the field. TAC Foundation donors are recognized in *TAC News*, at the TAC Conference & Exhibition and on the TAC Foundation website. Donors supporting named scholarships also receive added recognition in specific TAC Foundation scholarship promotions and listings.

To help the TAC Foundation achieve its vision of educating tomorrow's transportation leaders, visit www.tac-foundation.ca or contact foundation@tac-atc.ca.

TAC's Transportation Information Service in Action

2012/13 Canadian Surface Transportation Survey – Your Input Required

TAC is conducting its annual inventory of research projects in surface transportation in Canada.

Contribution to this survey is particularly important since the data serves as a centralized information source for surface road and rail transportation research in Canada. The records in the database help TAC monitor Canadian research activity, define the current state-of-the-art, and identify experts in the field.

Organizations are invited to complete the Research and Development Survey Form or update their records on published project descriptions. Additional survey information and the form can be found under the Resource Centre Library section of TAC's website, at: <http://tacatc.ca/english/resourcecentre/databases/transportationresearch.cfm>

Copies of final reports from research projects related to road or rail transportation are of considerable interest to TAC members and the transportation community. The Association can also help with the process of technology transfer on a national and international level.

Project information is shared with European and U.S. agencies, offering international exposure for research work. The information compiled in this survey is distributed in electronic format to the Organization for Economic Co-operation and Development where it becomes part of the International Transport Research Documentation database.

For more information on the Canadian Surface Transportation Survey, contact TAC's Transportation Information Service at tis@tac-atc.ca.

GLOBAL SOLUTIONS IN TRANSPORTATION

ATLANTIC David Kozak 506-857-1675	ONTARIO Eric Peissel 905-475-7270
QUEBEC Martin Héту 514-340-0046	WESTERN CANADA James Morgan 403-342-7650

Our Suite of Advanced CAD Engineering Software

- AutoTURN**
Vehicle Swept Path Analysis
- ParkCAD**
Parking Lot Design
- GuidSIGN**
Highway and Roadway Sign Design
- TORUS Roundabouts**
Roundabout Planning and Design
- NEXUS Intersections**
Intersection Design

604.244.8387 | info@transoftsolutions.com
www.transoftsolutions.com

Projects in Development Seeking Funding

Funding partners are being sought for **five new projects** endorsed by the Chief Engineers' and the Environment Councils. The projects were recommended by TAC standing committees following discussions and deliberations during their recent meetings in October.

Detailed information on these and other projects seeking funding are available on the Pooled Fund Projects in Development page of TAC's website at www.tac-atc.ca/english/projects/indevelopment/.

Synthesis of Traffic Monitoring Best Practices for Canadian Provinces and Municipalities

The Asset Management Task Force has recommended the preparation of a synthesis of traffic monitoring best practices for Canadian provinces and municipalities.

Transportation agencies implement traffic monitoring programs to provide information to support transportation planning, engineering and management. In addition, it serves the traffic information needs of engineering consultants, private enterprises, the police, and members of the general public.

The need for consistent, reliable, and increasingly detailed traffic information will continue to grow as analytical methods and technologies improve to enable more comprehensive monitoring capabilities. There is benefit in synthesizing traffic monitoring best practices from a uniquely Canadian perspective.

Centreline Pavement Markings for Passing and Climbing Lanes on Two-Lane Roadways

A project proposed by TAC's Traffic and Operations Management Standing Committee is aimed at developing a national guideline on centreline pavement markings for passing and climbing lanes on two-lane roadways.

One objective of this project is to use scientific analysis to determine when it is appropriate to either permit or prohibit passing for traffic in the opposing travel lane. The development of a guideline is also planned for evaluating the risk associated with allowing passing (in the opposing traffic lane) to assist jurisdictions in deciding whether or not to permit or prohibit passing.

A final report describing the methodology and results of the research and scientific analysis will be produced. The recommended national practice will include required changes to the *Manual of Uniform Traffic Control Devices for Canada*.

Synthesis of Practices for Preparing the Climate Change Component of Environmental Assessments

A project recommended by TAC's Environmental Issues and Management Standing Committee will result in a synthesis of practices for incorporating the climate change component in environmental assessments and a checklist/supporting tool.

Highway transportation practitioners need to determine how the climate change component should be considered when conducting an environmental assessment for transportation projects. The project goal will be to develop an approach that could be uniformly applied to the environmental assessment process under the *Canadian Environmental Assessment Act*, as well as environmental assessments prepared under various provincial acts.

Research on how climate change has been addressed in Canadian provincial and federal environmental assessments conducted for transportation related projects, and other linear development projects (e.g., pipeline developments) over the last decade will also be included.

(continued on page 12)

PEOPLE IN THE NEWS

Tim Smith has been appointed Pavement Solutions Manager, Lafarge Canada Inc., Eastern Canada Business Unit.

Gary Tencha has joined CIMA+ as Senior Advisor to expand client offerings in transportation.

Bill Menzies is now working at Dillon Consulting, Public Transit/Transportation Group in the Winnipeg office.

Eric Peissel is GENIVAR's new Vice-President Transportation, Ontario.

Mike Koziol has been named Vice-President, Transportation, Alberta, MMM Group Limited.

Scott Hanna will become the new Environmental Director for Hatch's Australian region in Brisbane, effective January 2013.

Joe Perrotta has been appointed Manager of Transportation Planning at the City of Mississauga.

Biljana Rajlic has been named Vice-President at Hatch Mott MacDonald Ltd.

Paul Murchison is the new Director of the Transportation Engineering Branch, Yukon Highways and Public Works.

Réjean Day recently retired as Secretary General of the Canadian National Committee of The World Road Association (known as PIARC – Permanent International Association of Road Congresses). Replacing Réjean Day as Secretary General is TAC Executive Director **Michel Gravel**.

(continued from page 11)

Best Management Practices for Compliance with the Migratory Bird Convention Act and Regulations

Recommended by TAC's Environmental Issues Management and Environmental Advisory and Legislation Standing Committees, this project will develop a synthesis of transportation-related best management practices for protecting migratory birds, as well as supporting practical tool for implementing recommended practices.

Over the past decade, Environment Canada has contemplated approaches to applying the provisions of the *Migratory Bird Convention Act and Regulations*. In 2010, Environment Canada decided not to pursue new permitting provisions that would allow construction, operation and maintenance activities to be undertaken without the risk of non-compliance. Proponents responsible for infrastructure have been directed to develop beneficial management plans in consultation with the Canadian Wildlife Service (CWS), Environment Canada.

The goal of the project is to develop transportation specific best management practices from a wide range of sectors (transportation, utilities, oil and gas, etc.) aligned with the CWS direction.

Risk Analysis and Responding to Climate Change

The Environmental Issue Management Standing Committee has recommended the preparation of a universally adaptable risk assessment tool for use by transportation agencies to determine vulnerabilities within road jurisdictions' infrastructure or operating practices related to climate change.

Owners and operators of transportation infrastructure must protect against the effects of more frequent severe weather events resulting from climate change. With limited funding, this challenge requires a rational solution to address the highest priorities and risks.

The objectives of the project include identifying environmental and climate change risks and assessing benefits of various mitigating and adaptive actions. A synthesis of available tools and practices applicable to transportation sectors and a web based risk assessment tool will be developed. 

TAC ASSUMES RESPONSIBILITY FOR THE CNC OF THE WORLD ROAD ASSOCIATION

At its last meeting, the TAC Board of Directors agreed to assume the secretariat role for the Canadian National Committee (CNC) of the World Road Association for a two-year trial period, subject to the development of a feasible cost recovery model in April 2013.

The World Road Association (known as PIARC – Permanent International Association of Road Congresses) is a non-profit association of governments that aims to develop international cooperation and foster progress in road transportation.

Its main activities include:

- Technical committees that pursue four-year work plans, conduct cooperative and joint studies, convene meetings, prepare reports and publications, and
- Major international events, such as World Road Congresses (every four years) and Winter Road Congresses (also every four years, offset one year from the World Road Congresses).

PIARC's vision is to be the world leader in the exchange of knowledge on road transportation policy and practice which is not only compatible with, but supportive of, TAC's mandate. The CNC offers its members a window into international issues, providing an interface to best practices and experience. It also provides a conduit for information from PIARC members to a national audience and relays information on the national situation to an international audience.

Activities to be undertaken by TAC in supporting the CNC secretariat include membership services, financial services, meeting coordination and support, information dissemination, and support of Canadian participation in major international PIARC events.

The current executive of the CNC consists of:

- Ms. Jane Weldon, President (Director General, Transportation Infrastructure Programs, Transport Canada)
- Mr. Gerry Chaput, Vice-President - Institutional (Assistant Deputy Minister, Provincial Highway Management Division, Ministry of Transportation of Ontario)
- Mr. Jason Trotter, Vice-President - Corporate (Client Manager, Infrastructure Management & Pavement Engineering, Stantec Consulting Ltd.)
- Mr. Michel Gravel, Secretary General (Executive Director, Transportation Association of Canada)

The CNC's initial priorities will focus on developing mechanisms for integrating the governance structure and strengthening the technical relationships between the CNC and TAC. More information on the CNC will be provided following the April 2013 Board meeting.

For information regarding membership in PIARC, contact Michel Gravel, CNC Secretary General at mgravel@tac-atc.ca.



**Infrastructure
Environment
Communities
Facilities**

Offices Across Canada and International
www.dillon.ca

Planning | Transportation/Systems | Design

Transportation Planning • Public Transportation
Traffic Operations & Parking • Intercity Transportation
Goods Movement • Planning & Design



5th Floor - 230 Richmond Street West Toronto ON M5V 1V6
tel 416 596 1930 fax 416 596 0644 www.ibigroup.com

Salt Management Guide and Syntheses of Best Practices Get Updated

With over one million kilometres of road, Canada's extensive network provides a safe, efficient and affordable means of surface transportation. It also supports a wealth of economic and social activities such as workplace transportation, recreation and leisure activities, as well as emergency and security services.



The de-icer of choice continues to be salt. Since TAC's *Salt Management Guide* was originally published in 1999, significant advancements have been made in the field of salt management. In order to keep the guide and syntheses of best practices current, an update was deemed necessary to incorporate the research and lessons learned in the past ten years.

These key documents identify and describe ways of handling and using salt to maintain its usefulness within winter maintenance while reducing its adverse effects to the environment.

Ecoplans Limited carried out the work for this project. A notice of release will soon be posted on TAC's website.

Funding partners of this project include **Alberta Transportation, British Columbia Transportation and Infrastructure, New Brunswick Transportation and Infrastructure, Newfoundland and Labrador Transportation and Works, Nova Scotia Transportation and Infrastructure Renewal, the Ministry of Transportation of Ontario, the Ministry of Transport of Quebec, Saskatchewan Highways and Infrastructure, Transport Canada, the Salt Institute**, the regional municipalities of **Halifax** and **Waterloo** and the cities of **Burlington, Edmonton, Moncton, Ottawa, Toronto** and **Winnipeg**. 

Project Launched: Transportation Funding and Governance in Canadian Metropolitan Areas

A project is underway to develop an inventory of urban transportation financing and governance practices in Canada's largest metropolitan areas. Advanced through TAC's Transportation Finance Standing Committee, the inventory will assist Canadian municipalities considering new funding mechanisms or creating new regional transportation authorities.

This project continues to explore transportation financing issues of interest to TAC members and the Urban Transportation Council. It follows the 2002 TAC briefing, *Innovations in Financing Urban Transportation*, which described transportation financing governance

frameworks in Vancouver, Edmonton, Calgary and Montreal, and the 2012 release of the *Sustainable Funding for Urban/Regional Transportation in Canada* briefing.

The new study will focus on some of Canada's largest metropolitan areas and their respective regional transportation authorities, including Metrolinx (Greater Toronto and Hamilton Area), Agence métropolitaine de transport (Greater Montreal) and TransLink (Greater Vancouver). The cities of Calgary, Edmonton, Halifax and Winnipeg will also be included in the inventory.

Upon completion of the project, a comprehensive report will be published that presents the inventory and analysis of current transportation funding and governance practices. A briefing summarizing the information will also be released.

The initiative is supported by **Alberta Transportation, Manitoba Infrastructure and Transportation, Metrolinx, TransLink, Agence métropolitaine de transport, Ville de Montréal** and **Halifax Regional Municipality**. 



R.V. Anderson Associates Limited
engineering · environment · infrastructure



toronto	niagara	ottawa	sudbury
london	moncton	fredericton	mumbai
tel 416 497 8600			www.rvanderson.com



North America's largest and most experienced
roundabout engineering team



Ourston Roundabout Engineering
905 752 4300 • info@ourston.com • www.ourston.com

BA Consulting Group Ltd.
45 St. Clair Avenue West, Suite 300
Toronto, Ontario M4V 1K9
416.961.7110(tel) 416.961.9807(fax)
www.bagroup.com



Movement in Urban Environments

2012-13 TAC BOARD OF DIRECTORS

PRESIDENT:

Doug McNeil, Deputy Minister, Manitoba Infrastructure and Transportation, Winnipeg (Board Chair)

VICE-PRESIDENTS:

Claude Carette, Director of Transportation, City of Montreal (Urban Transportation Council Liaison)

Lynne Cowe Falls, Associate Professor and Director of Students, School of Engineering, University of Calgary (Education and Human Resources Development Council Liaison)

Rob Penny, Deputy Minister, Saskatchewan Highways and Infrastructure, Regina (Chief Engineers' Council Liaison and Board Vice-Chair)

TREASURER:

Alex Turnbull, President, Westbay Research Inc., Ottawa

SECRETARY:

Michel Gravel, Executive Director, TAC, Ottawa

PAST PRESIDENT:

Russell Neudorf, Deputy Minister, Northwest Territories Department of Transportation, Yellowknife

MEMBERS:

David Beckley, Vice-President, Engineering and Implementation, TransLink (South Coast British Columbia Transportation Authority), Burnaby

Helena Borges, Assistant Deputy Minister, Programs Group, Transport Canada, Ottawa

Gerry Chaput, Assistant Deputy Minister, Ministry of Transportation, Ontario

Jamie Chippett, Deputy Minister, Newfoundland and Labrador Transportation and Works, St. John's

Stephen Damp, Senior Vice-President, Civil Division, EllisDon Corporation, Mississauga

Jacque Dawes, Assistant Deputy Minister, Transportation Policy and Programs Department, British Columbia Transportation and Infrastructure, Victoria

Brian Douglas, Deputy Minister, Prince Edward Island Transportation and Infrastructure Renewal, Charlottetown

Jean-Marc Dupuis, Deputy Minister, New Brunswick Transportation and Infrastructure, Fredericton

Tim Grant, Deputy Minister, Alberta Transportation, Edmonton

Mike Johnson, Deputy Minister, Yukon Department of Highways and Public Works, Whitehorse

Methusalah Kunuk, Assistant Deputy Minister, Transportation, Nunavut Economic Development and Transportation, Iqaluit

Dominique Lacoste, President and Executive Director, Association québécoise du transport et des routes inc., Montreal

Paul Lafleche, Deputy Minister, Nova Scotia Department of Transportation and Infrastructure Renewal, Halifax

Anne-Marie Leclerc, Assistant Deputy Minister, Infrastructure and Technologies, Quebec Ministry of Transport, Quebec City

Malcolm Logan, General Manager Transportation, City of Calgary

Bruce McCuaig, President and Chief Executive Officer, Metrolinx (Greater Toronto Transportation Authority)

Ken Reashor, Director of Transportation and Public Works, Halifax Regional Municipality

Brad W. Sacher, Director of Public Works, City of Winnipeg (Environment Council Liaison)

Scott Stewart, Director, IBI Group, Toronto

Council and Board Task Force Chairs

Kerry Buckley, Manager, East Highways and Borders, Transport Canada, Ottawa (Chair, Education and Human Resources Development Council)

Peter Dzikowski, Senior Policy Advisor, Environmental Issues, Alberta Transportation (Chair, Climate Change Task Force)

Scott Hanna, Director (North America), Environmental Services Group, Hatch Ltd., Vancouver (Chair, Environment Council)

Jack MacDonald, General Manager Engineering, City of Moncton (Chair, Chief Engineers' Council)

Graham Vincent, Director of Transportation Planning, Regional Municipality of Waterloo (Chair, Urban Transportation Council)

Truck Lanes in Urban Areas Report Approved for Publication

Approval to publish a report on the potential use of truck lanes in urban areas has been given by TAC's Urban Transportation Council.

Intended to assist transportation professionals in making informed decisions on truck lanes, the report is based on the findings of a literature review, stakeholder interviews, and analyses of various truck lane configurations in different Canadian cities. It does not address the structural or geometric design of truck lanes but demonstrates the



Canadian context in terms of population, traffic and truck traffic volumes, truck configurations, as well as urban roadway design and operation.

Truck lanes are defined as a lane for preferential truck use where trucks are separated from other traffic, either through physical or operational treatments. The purpose of these lanes is to reduce travel time, improve system reliability and safety, and reduce emissions in the movement of goods in urban areas. Truck lanes are a relatively new concept and there is little information about them, particularly for Canadian urban areas.

The report summarizes case studies in Canadian cities for six of these types to reveal new planning, design, operation, analysis, and evaluation considerations for urban truck lanes in Canada. The document finds many critical knowledge gaps regarding truck lanes and recommends research and next steps to address these gaps.

The report resulted from a project under the auspices of the Transportation Planning and Research Standing Committee. The work was conducted by **Montufar Group Transportation Consulting**.

Project funding partners included **Manitoba Infrastructure and Transportation**, the **Ministry of Transportation of Ontario**, **Transport Canada**, **Metrolinx**, **TransLink**, the **Region of Peel** and the **cities of Calgary, Edmonton, Montreal and Ottawa**. 

Renewing Your Organization's TAC Membership

Membership renewal time is a good time for employees of TAC member organizations to quickly and easily update their contact information or communication preferences, or add themselves into TAC's database, using *TAC Online*.

Notices to the 'member rep' for all current member organizations of TAC were mailed at the end of November.

If you are the 'rep' for your organization's TAC membership, keep an eye out for your renewal notice, and have it processed as soon as possible to ensure membership benefits for your organization are uninterrupted.

If you are a 'member rep' and have questions about membership, didn't receive your mailed notice (by December 10), need to update your contact information, or would like the list of your organization's employees receiving communications from TAC, contact Member Services at services@tac-atc.ca.

To access or create a *TAC Online* account, go to <http://tacimis.tac-atc.ca/imispublic>. Locate the Log On section near the bottom of the page and either logon if you have an account, or click "Please create a *TAC Online* account" to be added to the system.

Individuals experiencing problems logging on or creating a *TAC Online* account may contact secretariat@tac-atc.ca or 613-736-1350 extension 221. 

NEW MEMBERS

TAC is pleased to welcome the following new members:

City of Edmunston

Edmunston, NB
Gary Cyr, Public Roads Coordinator

Howes Technical Advantage Ltd.

North Vancouver, BC
Donna Howes

multiView Locates Inc.

Mississauga, ON
Kamsani Zak Wahid

Ontario Hot Mix Producers Association - Asphalt Institute

Mississauga, ON
Alexander (Sandy) Brown, Technical Canadian Regional Engineer

Corporation of the City of White Rock

White Rock, BC
Greg St-Louis

COMING EVENTS ~ 2013

92nd Annual Meeting of the Transportation Research Board

January 13-17
Washington, DC
Tel. (202) 334-2934
www.trb.org/meeting

Annual Meeting of the National Asphalt Association

February 9-13
Scottsdale, Arizona
Tel. (888) 468-6499
www.asphaltpavement.org

Sustainable Communities Conference and Trade Show

February 13-15
Windsor Essex, Ontario
Tel. (613) 241-5221
<http://www.fcm.ca/home/events/2013-sustainable-communities-conference-and-trade-show.htm>

Technical Conference and Exhibition of the Institute of Transportation Engineers

March 3-6
San Diego, California
Tel. (202) 785-0060
<http://www.ite.org/meetings/index.asp>

95th Annual Conference of the Canadian Construction Association

March 3-7
La Malbaie, Québec
Tel. (613) 236-9455
www.cca-acc.com/en/annual-conference

Annual Conference of the Association québécoise du transport et des routes

March 25-27
Montreal, Quebec
Tel. (514) 523-6444
<http://www.aqtr.qc.ca/index.php/fr/congres-annuel/congres-2013>

Annual Conference of the Canadian Institute of Transportation Engineers

April 7-10
Calgary, Alberta
Tel. (202) 289-0222
<http://www.cite7.org/Calgary2013/index.php>

Bridge Safety and Longevity Conference & Expo

April 9-11
Ottawa, Ontario
Tel. (902) 425-3980
<http://bridgelife.ca/>

TAC Spring Technical Meetings

April 11-16
Ottawa, ON
Tel. (613) 736-1350
www.tac-atc.ca

CCMTA Annual Meeting

May 5-8
Iqaluit, Nunavut
Tel. (613) 736-1003
<http://www.ccmta.ca/english/events/annualmeeting/annualmeeting.cfm>

Annual Conference of the Intelligent Transportation Systems Society of Canada

May 26-29
Toronto, Ontario
Tel. (905) 471-2970
http://www.itscanada.ca/events/acgm_2013.html

Annual Conference of the Canadian Society for Civil Engineers

May 29-June 1
Montreal, Quebec
Tel. (514) 933-2634
<http://www.csce2013.ca/>

Annual Conference /Trade Show of the Federation of Canadian Municipalities

May 31-June 3
Vancouver, British Columbia
Tel. (613) 241-5221
<http://www.fcm.ca/home/events/2013-annual-conference-and-trade-show.htm>

Annual Conference of the Canadian Transportation Research Forum

June 10-12
Halifax, Nova Scotia
Tel. (519) 421-9701
www.ctrf.ca/

Annual Conference of the Canadian Institute of Planners

July 6-9
Vancouver, British Columbia
Tel. (613) 237-7526
<http://infuse2013.ca/>

TAC Fall Technical Meetings

September 19-24
Winnipeg, MB
Tel. (613) 736-1350
www.tac-atc.ca

TAC Conference & Exhibition

September 22-25
Winnipeg, MB
Tel. (613) 736-1350
www.tac-atc.ca