Transportation Association of Canada

SEPTEMBER 27-30 | VANCOUVER, B.C.

2020 CONFERENCE & EXHIBITION

THE JOURNEY TO SAFER ROADS

CALL FOR CONFERENCE SUBMISSIONS

WWW.TAC-ATC.CA | #TACCONF

TABLE OF CONTENTS

INTRODUCTION

The **Transportation Association of Canada (TAC)** is soliciting submissions to be considered for technical sessions at the **2020 TAC Conference & Exhibition**. Authors and presenters are asked to keep in mind this year's conference theme, ***The Journey to Safer Roads***, when preparing submissions.

To present at a Conference session:

1. **Submit a 200- to 400-word abstract** to be reviewed by a TAC Council or Committee member.
2. If your abstract is accepted, **submit a presentation and/or paper** (and/or poster, if invited).
3. If your presentation, paper and/or poster is accepted, you are expected to **attend and present at the Conference in September 2020**.

For more information on presentation, paper and/or poster requirements, please review the Guidelines for Authors and Presenters.

Presentation session chairs may invite an author to submit a poster rather than a presentation; this is most likely to occur when too many presentations are proposed for a given session. When posters are requested, accompanying papers are optional unless required by the session chair.

TYPES OF TECHNICAL SESSIONS:

Presentation Sessions: Includes several 30-minute presentations; presentations are required, and accompanying papers may be optional or required

Lightning Sessions: Includes several 8-minute presentations; presentations are required, and accompanying papers are not accepted.

GUIDELINES & IMPORTANT INFORMATION

- Submissions must be substantially different from any selected submissions to other organizations.
- **Submissions must not favour special interests or be of a commercial nature.**
- Submissions must be made using TAC's online submission portal. Only **PDF and PowerPoint documents** will be accepted.
- Submissions must be named in the following format; no spaces should be used: **LastName+FirstInitial-Title-Version#**
- When a submission is complete, an email confirmation is sent automatically. If this isn't received, contact us.
- Submissions will be reviewed for quality, format, and relevance to the session theme, and general interest.
- All correspondence and notifications will be emailed to the person who made the submission.
- If the submission is accepted, authors are expected to attend and present at the conference. Any and all costs related to travel to the conference are the sole responsibility of the author.
- Authors not adhering to deadlines may be disqualified.
- Authors must confirm that their employer and/or related clients are aware and approve of the submission.
- Accepted papers and posters will be published on the 'Conference Papers' section of TAC's website. Presentations will be recorded on-site and will be made available to delegates and others after the event.
- Accepted papers whose principal author is a registered full-time student at a recognized post-secondary institution will be considered for a Student Paper Award.
- Author changes, additions, biographies and head shots must be received by **August 28**. Changes after this date cannot be guaranteed to be updated in the program or the conference mobile application.
- Accepted conference presenters must register as a delegate. View Registration Options & Fees.

QUESTIONS?

Contact **Christina Ghazal, Meetings and Events Coordinator**
613-736-1350 ext. 236 | cghazal@tac-atc.ca

STEP	DATE
Abstracts due	January 21
Notice of abstract acceptance/rejection sent to authors	February 28
DUE DATE: Full papers | Draft presentations & posters	May 4
Notice of acceptance/rejection/request for revisions sent to authors	June 22
DUE DATE: Revised papers, presentations & posters (if required)	July 20
DUE DATE: Final presentations & posters	September 17
2020 TAC Conference & Exhibition in Vancouver, B.C.	September 27-30

SESSION TOPICS

The 2020 TAC Conference Technical Program will highlight session topics aligned with TAC's councils and committees. **Authors and presenters are encouraged to review all session topics, because many involve multiple areas of interest.**

- **AT** ACTIVE TRANSPORTATION
- **AM** ASSET MANAGEMENT
- **CC** CLIMATE CHANGE
- **EN** ENVIRONMENT
- **GD** GEOMETRIC DESIGN
- **MC** MAINTENANCE & CONSTRUCTION
- **MM** MOBILITY MANAGEMENT
- **PV** PAVEMENTS
- **RS** ROAD SAFETY
- **SM** SMALL MUNICIPALITIES
- **SO** SOILS & MATERIALS
- **ST** STRUCTURES
- **TE** TECHNOLOGY
- **TO** TRAFFIC OPERATIONS
- **TP** TRANSPORTATION PLANNING

ASSET MANAGEMENT (AM)

Organized by the Asset Management Committee

AM

RS

Asset Management and Road Safety
Presentation Session (Papers Optional)

This session will address the relationship between asset management and road safety, including how safety is considered in asset management programs, systems and maintenance.

AM

Innovations in Asset Management
Presentation Session (Papers Optional)

This session will address innovations in asset management including advances in technology, systems and processes.

CLIMATE CHANGE (CC)

Organized by the Climate Change Integrated Committee

CC

Acting on Climate Change: Lightning Session
Lightning Session (No Papers)

Integrating climate change considerations in transportation planning and engineering is a priority for ensuring a safe, livable and sustainable environment for current and future generations.The continued disruptive impact of climate change on the transportation system requires mitigation and adaptation actions in designing, maintaining and operating transportation assets. This session welcomes short presentations from municipalities, provincial and federal government agencies, non-profit and advocacy groups, and researchers highlighting ways and means undertaken in responding to climate change. **Presentations should rely principally on photos and visual elements to show how each initiative addresses climate change, and to tell a compelling story including lessons learned.**

CC

MC

Low Carbon Construction: Examining Targets, Tools, Tracking and Materials
Presentation Session (Papers Optional)

As transportation agencies seek ways to reduce greenhouse gas (GHG) emissions, this session will review policies, targets, methods and tools to estimate and track GHG footprints, and approaches (e.g. low-carbon materials) to reduce GHG emissions during construction.

ENVIRONMENT (EN)

Organized by the Environment & Climate Change Council

EN

Assessing and Managing the Environmental Consequences of Road Salt

Presentation Session (Papers Optional)

Presentations are invited on the subject of the environmental management of road salts. With a Code of Practice established by Environment and Climate Change Canada (ECCC) and corresponding best management practices (BMPs) established by TAC, national targets were identified in 2014 for the uptake of BMPs by roads agencies across the country. The TAC 2020 event presents an opportunity to review progress on the implementation of the Code of Practice against national targets for 2019 and 2024.

Submissions could address:

- Pathways of road salt entering the environment
- Recent findings of impacts of road salts on groundwater, surface water, species at risk, human health, etc.
- Approaches taken to date for the identification of salt vulnerable areas
- Impact assessment methods
- Evolution of best management practice
- Management and re-use of saline soils
- Challenges and opportunities for the management and re-use of saline water

EN

Environmental Compliance Management During Construction

Presentation Session (Papers Optional)

MC

Compliance with both federal and provincial environmental regulations is required for construction projects both large and small. Indeed, a review of enforcement actions will illustrate that most regulatory breaches occur during project construction rather than during the planning phase. Management of construction environmental compliance risk can be improved by thorough planning and the use of tools and processes to facilitate and track environmental compliance and mitigation commitments during construction. We can clearly describe and ensure effective implementation on what we say we will do through the use of Environmental Management Systems (EMS), Environment Protection Plans, and ECO Plans for example. Processes need to be in place to ensure sufficient communication, inspection and reporting during construction so that the compliance requirements of all stakeholders including are met. Modern construction projects must meet a broad range of environmental conditions including topics such as air and noise monitoring, wildlife mitigations, wetland compensation, endangered species protection, aquatic and terrestrial protection and invasive species. Presenters could include agencies, consultants or contractors sharing the processes and tools which have been successful on their projects.

EN

Invasion Collaboration: Working Together to Combat Invasive Species

Presentation Session (Papers Optional)

The movement of invasive species beyond their natural habitats is rising drastically due to increased trade, travel and other human activities. A side effect of the transportation industry's business is the creation of high-risk sites for introduction and spread. Across Canada, invasive species infestations contribute to the loss of agricultural and rangeland productivity, disruption of ecological processes, harm to native species including those that are rare or endangered, reduction of recreational and land values, damage to roadways and infrastructure, increase in soil erosion and stream sedimentation, interference with forest regeneration, increase in wildfire hazards, and creation of health risks for humans, animals and crops. They can also create unsafe conditions for the traveling public and contribute to significant increases in operation and maintenance costs. With this growing problem, it is becoming increasingly important that all transportation professionals understand their role in preventing and controlling the spread of invasive species, from planning to design, construction, operations and maintenance. As transportation corridors cross multiple ecological and jurisdictional boundaries, it is crucial for work to take place collaboratively, with continuous and timely knowledge sharing. This session will present innovative approaches to preventing the spread of invasive species through communication and collaboration.

GEOMETRIC DESIGN (GD)

Organized by the Geometric Design Committee

GD

Advances in the Safe Design/Operation of Roundabouts
Presentation Session (Papers Optional)

RS

Submissions could address:
- Lessons learned with respect to geometric design and safety when designing/operating roundabouts
- Cutting edge design tools and/or elements derived from other countries/ jurisdictions

GD

Designing Interchanges and Major Facilities to Improve Safety
Presentation Session (Papers Optional)

RS

Submissions could address:
- How active transportation infrastructure can be safely incorporated within interchanges or major facilities
- How driver workload can be reduced at critical points approaching or within interchanges and major facilities
- How to design infrastructure solutions under various constraints, e.g. safety, property, environmental, utilities, spacing, etc.

GD

Complete Streets: How to Design Safely for all Modes
Presentation Session (Papers Optional)

RS

AT

Submissions could address:
- Lessons learned regarding specific elements of design that worked well or did not work as expected
- Innovative geometric design elements to maintain safety for motorists, pedestrians, cyclists or goods

GD

Incorporating Geometric Design Exceptions while Maintaining Safety
Presentation Session (Papers Optional)

RS

Submissions could address:
- Design exception successes/challenges to maintaining safe highways, streets, roundabouts, or pedestrian-bicycle corridors
- Before and after studies illustrating design exceptions
- Tools developed to measure an implemented design exception
- How design exceptions are incorporated into Design-Build and P3 projects

MAINTENANCE & CONSTRUCTION (MC)

Organized by the Construction Committee or the Maintenance & Operations Committee

MC

Best Practices in Safe Operation of Highway Networks
Presentation Session (Papers Optional)

RS

Submissions could address:
- Innovative initiatives, methods or technologies aimed at improving safety of employees or the motoring public around maintenance, construction or operating activities

MC

Safety Innovations in Delivery of Summer and Winter Maintenance
Presentation Session (Papers Optional)

RS

Submissions could address:
- Sharing of innovations aimed at making worksite activities safer for the public and workers

MC

Public Outreach Strategies Aimed at Raising Safety Awareness
Presentation Session (Papers Optional)

RS

Submissions could address:
- What jurisdictions are doing to educate and advise the public on operation, maintenance and construction

MC

Traffic Calming Projects
Presentation Session (Papers Optional)

Submissions could address:
- Recent construction projects aimed at achieving traffic calming

MOBILITY MANAGEMENT (MM)

Organized by the Mobility Management Committee

MM TP

Engaging with Communities for Better Transportation Projects

Presentation Session (Papers Optional)

Public engagement is an element of most transportation planning projects. Participation can range from simply informing the public about what will happen, to involving them in planning and design, to empowering them to make decisions on project direction. Public engagement is also part of the "change management" process as agencies reallocate street space and improve travel options. This session will explore how effective public engagement can result in better transportation projects and a more informed public discussion about sustainable transportation.

Submissions could address:

- Profiles of successful public engagement processes
- Innovative approaches to engaging people where they are at
- Ways to apply a social equity lens to reach diverse communities with different needs
- Techniques to connect in meaningful ways with the communities we serve
- Lessons learned from unsuccessful engagement approaches

MM

Emerging Issues in Urban Transportation: Examining the Public Interest in New Mobility

Presentation Session (Papers Optional)

As new mobility options disrupt and even revolutionize urban transportation, public agencies remain tasked with meeting their sustainability goals. This session will address how agencies are evaluating and supporting new mobility options as viable transportation mode choices. Examples of new mobility options include on-demand ridesourcing (e.g. Uber, Lyft), shared mobility (e.g. carsharing, bikesharing, ridesharing), free-floating fleet (e.g. Car2Go and dockless bike/scooter-share), and peer-to-peer shared mobility services.

Submissions could address:

- The appropriate level of public agency involvement
- The opportunities and risks related to new mobility
- The value of user data and of opening public services to the private sector

MM AT TP

Mind the Gap: Pedestrian and Cyclist Data Collection in Practice

Presentation Session (Papers Optional)

From planning and design to evaluation and reporting, active transportation initiatives need better baseline data. Yet while the technology and guidance to measure pedestrian and cycling activity already exists, many municipalities still do not have active transportation monitoring programs – or they lack the scale, scope and resources of parallel programs to monitor motor vehicles. At the same time, new solutions and types of AT data continue to be proposed from leading cities, industry and researchers. Beyond pedestrian and cyclist volumes, crash statistics and travel surveys, active transportation professionals also point to bikeshare use, GPS traces, non-auto collisions, safety perception, crowd-sourced data and more. Municipalities face the challenge of navigating the gap between current and best practices. This session will address these challenges:

- Which AT datasets are more urgently needed, and why?
- How should monitoring resources be linked to AT infrastructure spending?
- What are the key barriers to more widespread AT data collection, and how can they be overcome?
- What role does TAC have to help address these barriers?

Presentations could address AT or multi-modal data collection frameworks, cost-sharing and data sharing agreements, large-scale implementation of AT data collection systems, and integration of new AT datasets.

MM AT GD

Cycling Solutions: Overcoming Challenges and Barriers

Presentation Session (Papers Optional)

Submissions could address:

- Solutions to overcome challenges and barriers to implementing cycling infrastructure
- Addressing challenges with design, regulations, legislation, coordination, etc.
- Designing for interactions between different modes including cyclists, pedestrians and motor vehicles
- Evaluating cycling designs and infrastructure

PAVEMENTS (PV)

Organized by the Pavements Committee

PV

Innovations in Pavement Management, Engineering and Technologies
Presentation Session (Papers Required)

Submissions could address:

- Innovative designs, tools, techniques or technologies applied to pavement management or pavement engineering
- Case studies presenting projects involving unique challenges in pavement management or engineering

ROAD SAFETY (RS)

Organized by the Road Safety Committee

RS

Emerging Topics in Road Safety
Presentation Session (Papers Optional)

This session will address new and emerging topics in road safety. Examples include policy development, new/updated analysis techniques or tools, primary research, practice-minded syntheses of recent research, automation of road safety engineering, data or policy gaps, new procurement language, and novel road safety applications in planning, design, construction, or operations. Presentations are also welcome for ethical implications of modern road safety, and road safety funding mechanisms and innovations (e.g. budgeting strategies, revenue allocation, traffic enforcement fines, and matched funding for strategic safety programs).

RS

Strategic Road Safety Plans and Policies
Presentation Session (Papers Optional)

Strategic road safety plans and policies can enhance safety by creating system-wide guidelines and processes. Teams that have worked on these critical projects are encouraged to submit presentations that showcase the development, approval, implementation and monitoring efforts, and that illustrate enforcement/encouragement successes and challenges. Examples from both large and small municipalities are accepted as well as from international jurisdictions. This category includes Vision/Towards Zero programs, safe systems strategies, as well as road safety audit and in-service road safety review policies.

RS

Work Zone Safety
Presentation Session (Papers Optional)

TO

This session could address topics such as risk factors and countermeasures in work zone safety, tools for design and evaluation of work zones, and emerging technologies to reduce injuries in work zones.

RS

Low-Cost and Rapid Deployment of Road Safety Improvements
Presentation Session (Papers Optional)

Since the life cycle of large projects is measured in years and their costs in millions of dollars, many agencies are searching for lower-cost, 'quick win' strategies in response to urgent safety concerns. Case studies are sought for traffic calming strategies with demonstrated safety improvement effects and short delivery timelines, temporary and permanent measures, self-enforcing physical road modifications, strategies to change driver behaviour (e.g. speed choice), pilot projects of new strategies, and other methods to address short-term safety needs.

RS

Unique Safety Considerations in Active Transportation Projects
Presentation Session (Papers Optional)

GD

People who walk, cycle or use other methods of active transportation face unique risks on roads, where collisions have far more serious consequences. Empathy in design requires planners and designers to directly address the greater risks of vulnerable road users (VRUs). This session could address topics including multimodal safety processes at car-VRU and train-VRU interfaces, applied human factors in planning and design, protected intersections, strategies to include people with physical and/or cognitive challenges, context-sensitive design in areas with high active transportation/VRU activity such as schools and hospitals, design based on target speed and target users, and explicitly including empathy in design.

SMALL MUNICIPALITIES (SM)

Organized by the Small Municipalities Integrated Committee

SM GD AT

Complete Streets in Small Municipalities: Accommodating All Users
Presentation Session (Papers Optional)

Planning, designing, operating and maintaining streets to accommodate all users including cyclists, pedestrians, transit, passenger vehicles, large trucks, and farm vehicles in rural areas to provide safe, convenient and comfortable travel and access for all can be challenging—and particularly with limited resources. So how are small municipalities creating complete streets? Presenters will share their experiences with complete streets, incorporating traffic calming on roadways, and the impact of the Canadian Guide to Traffic Calming on work in small municipalities.

SOILS & MATERIALS (SO)

Organized by the Soils & Materials Committee

SO MC

Innovation in Geotechnical and Materials Engineering
Presentation Session (Papers Required)

Submissions could address:

- Advancements in design and construction of road and bridge embankments
- Incorporating climate change considerations for geotechnical and pavement materials engineering
- Application of trenchless technology in constructing new infrastructure under existing roadways
- Remote sensing and drone use for geotechnical engineering
- Recycling and incorporating recycled materials
- Alternative materials for road construction
- Energy and GHG emissions reductions through innovative use/design of materials
- Durable construction materials that increase design life
- Field performance of products/methods using recycled materials vs. traditional materials

SO

Testing and Modeling of Road and Embankment Materials
Presentation Session (Papers Required)

Submissions could address:

- Innovative testing and modeling of embankment and road materials, including unbound and bound soil, geosynthetics, and bituminous and Portland cement based materials
- Development of estimation models for mechanical properties of pavement materials
- Assessment and use of frost and moisture susceptibility
- Seasonal variation mechanical properties of soil and pavement materials
- Case studies summarizing road and/or embankment construction projects with challenges and respective solutions applied
- Lessons learned from difficulties encountered in road and/or embankment construction
- Long term performance evaluations of road and/or embankments and lessons learned

SO MC

Green Technology in Geotechnical and Materials Engineering
Presentation Session (Papers Required)

Submissions could address:

- Recycling and incorporating recycled materials
- Alternative materials for road construction
- Energy and GHG emissions reductions through innovative design and use of materials
- Durable construction materials that increase design life
- Field performance of products/methods using recycled vs. traditional materials

STRUCTURES (ST)

Organized by the Structures Committee

ST

Transportation Structures
Presentation Session (Papers Optional)

Submissions could address:

- Planning, design, construction, management and materials of bridges and other transportation structures

TECHNOLOGY (TE)

Organized by the Connected and Automated Vehicles Task Force

TE

CAV Applications for Industrial Motor Vehicles
Presentation Session (Papers Optional)

Connected and automated vehicles offer the prospect of productivity benefits and GHG emissions reductions, and could be part of the solution to mitigate the driver shortage impacting the transportation industry. Along with urban and highway applications, CAV technology is being more widely introduced in a variety of industrial sectors such as mining, forestry, and oil and gas. This session will present current applications, testing and research around the industrial use of CAVs.

TE

CAV Pilot Deployments in Canada
Presentation Session (Papers Optional)

This session will explore lessons learned by Canadian road authorities and researchers about planning a pilot, working with stakeholders, managing risks, and responding to operational realities.

TE

CAV Readiness (Part 1): Road Infrastructure
Presentation Session (Papers Optional)

TO

The deployment of connected and automated vehicles will require road authorities to upgrade their physical infrastructure. This session will explore international guidance, early Canadian advances, and research results.

TE

CAV Readiness (Part 2): Digital Infrastructure
Presentation Session (Papers Optional)

What do road owner-operators need to know about providing digital infrastructure for connected and automated vehicles? This session will consider data exchange frameworks, security credential management systems, interoperability and high-definition mapping.

TE

Cybersecurity Issues in Transportation
Presentation Session (Papers Optional)

TO

This session will examine vulnerabilities and opportunities related to intelligent transportation systems (ITS), connected vehicles and automated vehicles.

TRAFFIC OPERATIONS (TO)

Organized by the Traffic Operations & Management Committee

TO MC

Temporary Measures: Construction Impacts and Managing Public Safety
Presentation Session (Papers Optional)

This session will highlight safe and accessible temporary traffic control in construction and work zones. Today's competing need to design for multimodal and aging road users within limited street space creates a challenge for practitioners to design temporary construction and work zones. Presenters will provide insight into the tools jurisdictions use to manage the use of the street to coordinate utility upgrades, street reconstruction and development as part of their Journey Towards Safer Roads.

TO AT

Smart Traffic Signal Design: Putting Pedestrians First
Presentation Session (Papers Optional)

This session is intended to highlight traffic signal operations that put the most vulnerable road users—pedestrians—first. In today's competing needs for limited street space and multi-modal road users how can practitioners design traffic signals and operations to protect the most vulnerable? Presenters will address practical project experiences as part of their Journey Towards Safer Roads.

TO

Slow Zones: Lessons Learned
Presentation Session (Papers Optional)

This session will highlight the implementation of neighbourhood or area-wide slow zones. Research has shown pedestrians have a 90% chance of survival when struck by a car at 30 km/h, but less than a 50% chance of surviving an impact at 45 km/h. Presenters will address practical experiences in implementing neighbourhood slow zones and their effects as part of their Journey Towards Safer Roads.

TO

#InnovativeTrafficControl
Presentation Session (Papers Optional)

This session will highlight innovations in traffic operations and management. Presenters will discuss practical project experiences in using innovation as part of their Journey Towards Safer Roads.

TRANSPORTATION PLANNING (TP)

Organized by the Transportation Planning Committee

TP

Best Practices in Urban Transportation Planning
Presentation Session (Papers Optional)

Urban settings pose unique constraints and often require creative solutions to complex problems. This session will feature implemented projects in Canadian urban areas that demonstrate the best aspects of urban transportation planning. Submissions could feature integrated transit and land use planning, comprehensive public engagement, novel uses of data, or applications of innovative frameworks such as new mobility.

TRANSPORTATION PLANNING (TP)

Organized by the Transportation Planning Committee

TP

Goods Movement
Presentation Session (Papers Optional)

Submissions could address:

- Examples of best practices to move goods safer, faster and better, whether by truck, rail, air, ship or pipeline
- Optimizing use of existing transportation infrastructure, and making targeted investments and regulations for improved safety
- Developing safe, innovative solutions by improving current data collection practices, policies and regulations
- Achieving success through public-private partnerships
- Effectively integrating land use planning and community building initiatives
- Safe and efficient supply chain and logistics practices to meet the needs of public and private partners in the context of the Canadian and global economies

TP

Visualizing Data to Drive Insight and Improve Decisions
Lightning Session (No Papers)

Comprehensive data, and the meaning and insights drawn from it, form the foundation of transportation planning. This session will address how data visualizations can encourage deeper meaning and understanding, change the debate, and ultimately lead to better decisions in areas such as transportation policy, land use, public transit and active transportation. Presenters will focus on questions such as how to select the data that matter, how to tell meaningful stories, and how to improve visualizations. **Presentations should rely principally on photos and visual elements to show the power of data visualization, and to tell a compelling story including lessons learned.**

TP

AT

Integrating Health and Transportation Planning
Presentation Session (Papers Optional)

The link between health and transportation systems has been recognized in a number of studies, including those identifying the benefits of active transportation. Furthermore, health elements are beginning to be considered in a range of local, regional and provincial transportation strategies and plans, technical documents and guidelines. This session will bring together processes, studies and projects where the relationship between health and transportation planning has been analyzed or promoted, ideally demonstrating improved health outcomes.

TP

Transportation Demand Modelling
Presentation Session (Papers Optional)

Transportation demand modelling is an essential tool for transportation planners. Whether for large-scale transportation projects or plans, demand modelling allows planners to evaluate the impacts of different scenarios on transportation systems. This essential step is useful to many other professionals, allowing them to evaluate GHG emissions, design road and public transit infrastructure, design traffic control devices, assess modal shift, and so on. Presentations may address research projects or practical applications.