



## CALL FOR SUBMISSIONS PROSPECTUS

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## INTRODUCTION

The **Transportation Association of Canada (TAC)** and the **Intelligent Transportation Systems Society of Canada (ITS Canada)** are soliciting submissions to be considered for presentation sessions and poster sessions at the [2019 TAC-ITS Canada Joint Conference & Exhibition](#).

**Potential authors and presenters are encouraged to review this entire document for submission opportunities, because it represents an integration of subject matter that could interest members of both TAC and ITS Canada.**

Abstract submissions are being sought for two types of sessions:

- **Presentation sessions** are comprised of 30-minute presentations; presentations are required, and accompanying papers may be optional or required (see details under “Session Topics”).
- **Poster sessions** are comprised of a poster; accompanying papers are optional unless required by the session chair.

**STEP 1:** [Submit an abstract](#) for review by TAC and ITS Canada.

**STEP 2:** If your abstract is accepted then submit your presentation, paper and/or poster.

**STEP 3:** If your presentation, paper and/or poster is accepted then you are expected to attend and present at the conference in September 2019.

For more information on presentation, paper and/or poster requirements, please review the [Guidelines for Authors](#).

## KEY DATES

Action	Date
<ul style="list-style-type: none"><li>• <b>Abstracts due</b></li></ul>	<b>January 28, 2019</b>
<ul style="list-style-type: none"><li>• Notice of abstract acceptance/rejection sent to authors</li></ul>	March 1, 2019
<ul style="list-style-type: none"><li>• <b>Full papers due</b></li><li>• <b>DRAFT presentations due</b></li><li>• <b>DRAFT posters due</b></li></ul>	<b>April 26, 2019</b>
<ul style="list-style-type: none"><li>• Notice of acceptance/rejection/request for revisions sent to authors</li></ul>	June 14, 2019
<ul style="list-style-type: none"><li>• <b>REVISED papers/presentations/posters due (if revisions required)</b></li></ul>	<b>July 12, 2019</b>
<ul style="list-style-type: none"><li>• <b>FINAL presentations due</b></li><li>• <b>FINAL posters due</b></li></ul>	<b>September 12, 2019</b>

## ABSTRACT REQUIREMENTS

- Abstracts must be original or substantially different from previous presentations or publications, and must not favour special interests or be of a commercial nature.
- Abstracts must be between 200 and 400 words in length.
- Abstracts must be submitted through the [Joint Conference online abstract portal](#). First-time users must create an account to submit an abstract. Authors who have an existing account should use it.
- All correspondence and notifications will be emailed to the user who submitted the abstract.
- Authors not adhering to deadlines may be disqualified.
- Submissions require confirmation that approval from employers and/or clients has been received.
- TAC and ITS Canada are entitled to publish and distribute submissions.
- Abstracts are not considered to be submitted until you receive an email confirmation; if you do not receive an email confirmation, please contact [Christina Ghazal](#), TAC's Meetings and Events Coordinator.

**For more information, please contact:**

[Christina Ghazal](#), Meetings and Events Coordinator, TAC

or

[Janneke van der Zee](#), General Manager, ITS Canada

## SESSION TOPICS

### SMART CITIES AND BIG DATA

#### Smart City Challenge: Practical Applications

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL**

Submissions could address:

- Updates on Smart City Challenge cities
- Initiatives already underway
- Systems that support the concept of Smart Cities including Internet of Things (IoT)

#### Artificial Intelligence and Machine Learning for Smart Mobility

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS REQUIRED\***

*\*Papers for this session must be a maximum of 8 pages. ITS Canada will invite a selected number of accepted papers for re-submission as an extended manuscript and considered for a special issue in a well-reputed journal (to be decided at a later stage).*

Submissions could address:

- Applications and methodological contributions of artificial intelligence and machine learning in the context of smart mobility
- New data-collection technologies to gather large volumes of mobility data in a non-invasive manner
- Data on operations, design, and planning aspects of mobility generated by ride-hailing, connected and autonomous vehicles, mobility as a service, and other new services

- The potential of artificial Intelligence and machine learning to exploit such data and address existing challenges (e.g. congestion, safety, and climate change) and emerging issues (e.g. resilience, demand-sensitive just-in-time services, autonomous trajectory planning in mixed traffic)

## CONNECTED AND AUTOMATED VEHICLES

### Preparing for Connected and Automated Vehicles (CAV), Part 1: Technical Challenges and Developments

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address ground-breaking research and development at universities and private firms to tackle many technical challenges related to CAV deployment.

### Preparing for Connected and Automated Vehicles (CAV), Part 2: Readiness Planning and Pilot Projects

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Provincial and municipal efforts to prepare for a CAV future, including background policy papers and readiness and scenario planning
- Government-sponsored pilot projects to gain experience with how CAVs will affect the transportation system

## PUBLIC TRANSPORTATION AND NEW MOBILITY

### Integrated Mobility: The MaaS Revolution

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- What jurisdictions can do to help the Mobility as a Service (MaaS) industry and become MaaS players through bikeshare or other modes
- Evolution of the MaaS market to integrate transit, carsharing, ridesharing and bikesharing
- Management of customer information and payments

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

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- How agencies are evaluating and supporting new mobility options including ride-hailing, shared mobility, free-floating fleets, and peer-to-peer sharing options
- Appropriate levels of public agency involvement, the costs and benefits of opening public services to the private sector, and the value of user data

### ITS and Transit

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Advancements in transit-related technologies and innovation

- Development of transit signal priority, wayfinding and safety features

## **Improving Accessibility for Vulnerable Road Users through Technology**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL**

Submissions could address new developments in technologies (e.g. social media, beacons, artificial intelligence) that help vulnerable road users navigate urban transportation systems and environments through enhanced wayfinding and navigation, safe intersection crossing, pre-trip concierge and virtualization.

## **New Horizons in Using Technology to Enhance Transportation**

**POSTER SESSION: POSTERS REQUIRED, PAPERS OPTIONAL**

Submissions could address research and development at universities and private firms toward new applications of technology in transportation.

# **PLANNING, ENVIRONMENT AND CLIMATE CHANGE**

## **Best Practices in Urban Transportation Planning**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL**

Submissions could address:

- Canadian examples of the best aspects of urban transportation planning, featuring complex problems and their solutions
- Integrated transit and land use planning, comprehensive public engagement, novel uses of data, and/or applications of innovative frameworks such as new mobility

## **"Beyond the Storm" – Responding to Extreme Weather and Climate Events**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL**

Submissions could address:

- Ways to reduce impacts and costs of increasingly frequent and severe weather events for all orders of government, residents and businesses
- Climate change resiliency planning increases the capacity and ability of government authorities to develop, fund and implement action plans for climate change adaptation

## **Transportation Demand Modelling**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL**

Submissions could address research and practical applications related to demand modelling that allows planners to evaluate the impacts of large-scale transportation projects or plans, and to evaluate GHG emissions, design roads and transit systems, assess modal shifts, etc.

## **Integrating Health and Transportation**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL**

Submissions could address:

- How the built environment and transportation networks affect health outcomes by influencing ability to travel, travel mode choice, and risk factors
- Real-world examples of health-supportive design, promotion, data collection (practices, policies, regulations), land use planning, public-private partnerships, and infrastructure innovations

## **Invasive Species Management: Communicating and Collaborating for Success**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Communication, collaboration and early detection and rapid response (EDRR) activities that have contributed to successful invasive species management in the transportation sector (including rights-of-way, pits, quarries, maintenance yards, ferry crossings, bridges and culverts)
- Collaboration with land managers (including government agencies across jurisdictions and geographies), invasive species and conservation organizations, and other stakeholders toward shared goals  
Collaboration through sharing knowledge and techniques, establishing treatment agreements, and focusing on shared infestations

## **ROAD SAFETY**

### **ITS in Support of Vision Zero**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address tools and methods to enhance road safety and prepare for smart cities, including automated enforcement (beyond speed and red-light running) and smartphone apps.

### **General Issues in Road Safety**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Harmonization of best practices across Canada
- Effectively communicating updates to drivers (e.g. technology, laws)
- Design guide exceptions
- Proprietary roadside safety devices (e.g. barriers, MASH)

### **Improving Safety for Vulnerable Road Users**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Pedestrian, cyclist and motorcyclist safety
- Pedestrian crossings and bike-friendly signals
- Left and right turns at signalized intersections

### **Improving Safety through Speed Management**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address research on topics including speed limits, target and operating speeds, and roadway modifications to manage speed.

## **RURAL ITS**

### **Enhancing Rural Transportation Safety through Technology**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address opportunities for technology to enhance safety on rural roads, such as through detection of threatening weather conditions or improvements at isolated railroad grade crossings.

### **ITS in Northern Canada: Challenges in a Rural Environment**

***PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL***

Submissions could address issues and challenges in Canada's northern and rural climates, and in small communities.

## **OPERATIONS**

### **#InnovativeTrafficControl**

***PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL***

Submissions could address:

- Innovative applications, devices, methods and approaches to traffic control (e.g. signs, signals, ITS, road markings, roundabouts)
- New products from vendors in the context of a field study, research program or completed project
- All fields of transportation: active, commercial, transit, goods and plain and simple traffic control and operation management

### **Traffic Control on a Budget: Success Stories**

***PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL***

Submissions could address successful projects executed with limited budgets and technology, based on good engineering judgement and proper use of traffic control devices and standards.

### **Quality Assurance for Traffic Management During Construction Projects**

***PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL***

Submissions could address:

- Traffic Quality Management to meet client and stakeholder expectations, and support compliance with project requirements during temporary traffic design and management activities
- Use of technical specifications, by-laws, permits and temporary traffic control plans to overcome challenges faced by designers, contractors, road users and adjacent businesses
- Issues facing site traffic control professionals and traffic engineers including travel demand management, lane closures, truck routes, transit management, emergency service access, security cameras, business continuity, property access and parking management

### **Smart Traffic Signals**

***PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL***

Submissions could address projects involving smart traffic signals (traffic-adaptive signals).

### **Smart Signals for Bikeways**

***PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL***

Submissions could address innovations and emerging practices for bikeway signal systems.



## **Innovative Solutions to Enhance Goods Movement**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Technology-enabled developments and best practices for goods movement by truck, rail, air, marine and pipeline
- Optimizing use of existing transportation infrastructure, and improving safety through targeted investments and regulations
- Improving data collection practices, policies and regulations
- Achieving successes through public/private partnerships and innovations
- Integration with land use planning and community building initiatives
- Safe and efficient supply chain and logistics practices to meet needs of public and private partners

## **Smart Work Zones**

*POSTER SESSION: POSTERS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Ways to improve the availability and reliability of real-time information for work zone travellers, with the objective of improving safety and reducing traveller frustration (e.g. real-time travel time information on PVMS to help travellers assess alternate routes)
- Use of communications to improve transportation system efficiency and reliability in work zones, such as through the use of cameras to improve incident response

# **ROAD DESIGN**

## **ITS Considerations in Geometric Design**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Leveraging ITS to enhance geometric design
- The pros and cons of trying to integrate ITS applications into a roadway design
- Designers and ITS working together to achieve better designs and safer roadway operations

## **Design Considerations for Transforming Existing Infrastructure to Complete Streets**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Lessons learned for design tradeoffs with complete streets
- Design exception successes/challenges to achieve complete streets
- Measuring success or what didn't work with the implementation of complete streets designs

## **Designing Interchanges and Major Facilities in Constrained Conditions**

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Infrastructure design solutions under various constraints, e.g. property, environmental, utilities, spacing, proximity to other infrastructure, topography, political
- Incorporating active transportation within interchanges and major facilities

## Challenges in Roundabout Design and Operations

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address challenges and solutions related to the planning, design and operation of roundabouts.

## CONSTRUCTION, MAINTENANCE AND ASSET MANAGEMENT

### ITS in Road Construction: Impacts Today and in the Future

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Innovative and technological approaches to including ITS in road rehabilitation and new construction
- Details on objectives, benefits, lessons learned, future directions and impacts

### ITS in Road Maintenance: Impacts Today and in the Future

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Innovative approaches to how ITS can benefit road and highway maintenance in both summer and winter
- Details on approaches, benefits, lessons learned and future directions

### Spatial Dimensions of Asset Management

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Improving asset management by incorporating spatiality through advances in tools and systems
- Consideration of asset location and proximity (e.g. through GIS and linear referencing systems) to enable cost savings by improving decisions on preservation, rehabilitation and reconstruction for different asset classes
- Cross-asset decision making and tools and systems to improve consideration of spatiality
- Inputs, outputs and outcomes relating to the use of specific tools and systems
- Organizational work flows and processes to improve decision making with spatial information

### Asset Management in the Face of Climate Change

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address:

- Methodologies and/or case studies documenting the confluence between two forms of asset management: one based on managing lifecycle costs as an asset deteriorates over its expected life, and the other focusing on increased resiliency to extreme weather/environmental events
- Potential to combine both forms of asset management to produce a single plan that addresses both forms of loss of reliability

### Mitigating Utility Risk on Transportation Projects

*PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL*

Submissions could address effective methods for mitigating risk associated with the presence of private and public utilities within the limits of transportation projects.

## MATERIALS, PAVEMENTS AND STRUCTURES

### **Innovation in Geotechnical and Materials Engineering**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS REQUIRED**

Submissions could address:

- Advances in design and construction of road and bridge embankments
- Incorporating climate change considerations for geotechnical and pavement materials engineering
- Applications of trenchless technologies, remote sensing and drone use, recycling and recycled materials, and alternative or durable construction materials
- Energy and carbon emissions reductions through innovative design and materials

### **Green Technology in Geotechnical and Materials Engineering**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS REQUIRED**

Submissions could address:

- Applications of recycling and recycled materials, and alternative or durable materials
- Energy and carbon emissions reductions through innovative design and materials

### **Innovations in Pavement Management, Engineering and Technologies**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS REQUIRED\***

*\*Depending on the number of papers submitted, some may be moved to a poster session. Those presented as poster sessions still require a paper.*

Submissions could address:

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

### **Testing and Modeling of Road and Embankment Materials**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, 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, long-term performance evaluations and lessons learned

### **Structures**

**PRESENTATION SESSION: PRESENTATIONS REQUIRED, PAPERS OPTIONAL**

Submissions could address structures planning, design, construction, management and materials.