



# 17<sup>th</sup> WORLD WINTER SERVICE AND ROAD RESILIENCE CONGRESS

*Ensuring road excellence in all seasons*

CHAMBÉRY - SAVOIEEXPO - FRANCE  
10-13 MARCH 2026 | ENGLISH

[www.piarc-chambery2026.com](http://www.piarc-chambery2026.com)





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## EDITORIALS

On behalf of PIARC, the World Road Association, I am pleased to invite you to attend and participate in **the “17<sup>th</sup> World Winter Service and Road Resilience Congress” on March 10 -13, 2026. The Congress will be held at Savoieexpo Exhibition Centre in Chambéry, France.**

The purpose of the 4-day Congress is **to bring together researchers, practitioners and academia who are interested in exploring winter services and resilience of road infrastructure.** The World Winter Service and Road Resilience Congress is a world-class event that builds on the work completed by the committees, made up of experts from PIARC’s member countries, in the last cycle; sharing experiences and international best practices culminating in presentations made by road **experts, academia and practitioners from around the world including PIARC’s partners.** Held every four years since 1969, the Chambéry Congress will be the 17<sup>th</sup> edition. **Winter issues related to road infrastructure and resilience in all seasons and climate thereof will be the major themes of this international meeting.** We all have to contend with challenges due to the impact of climatic changes which concerns every country in the world. PIARC's international experts have already done a great deal of work on these issues, so the Congress will be a forum for building new relationships, reconnecting with old and disseminating knowledge and sharing best practice and much more.

On behalf of PIARC, I would like to sincerely thank the French government and the city of Chambéry for their commitment in organizing this Congress, which will undoubtedly be a success, just like the 2007 World Road Congress held in Paris, France.

I invite road experts, academia and students, managers and administrators from all over the world, from both the public and private sectors, to join us for this World Congress. **I invite you to diarize the event in your agenda and look forward to seeing you in Chambéry in March 2026!**



**Nazir Alli**  
President of PIARC



**Sandrine Chinzi**  
Director of Road Mobility  
Ministry for Ecological  
Transition and Territorial  
Cohesion

As First Delegate for France, I am very pleased that our country has been chosen to host

**the 17<sup>th</sup> World Winter Service and Road Resilience Congress.**

This event is another opportunity to showcase French expertise, and to facilitate international exchanges especially on the crucial subject of the resilience of roads to climate change.

I have no doubt that after a 2022 edition organised in digital form by our colleagues in Calgary, the winter service actors are

eager to gather once again to share their wealth of experience and knowledge. The French government is fully committed to working alongside road stakeholders and local authorities to offer you a top-quality congress, in the heart of a mountainous region located at the crossroads of European traffic flows and for which the topic of winter service is particularly relevant.

We're all working together with PIARC to put together a rich and varied programme of plenary sessions, workshops and technical visits, not forgetting many festive moments in a friendly and authentic atmosphere that characterises France and the PIARC community.

We look forward to welcoming you in Chambéry, France, and **look forward to seeing you from 10 to 13 March 2026!**



**Thierry Repentin**  
Mayor of Chambéry and  
President of the Grand  
Chambéry conurbation  
authority

On behalf of the City of Chambéry and the Communauté d'Agglomération de Grand

Chambéry, I want to tell you our pride to have been designated by the PIARC association to organize the **17<sup>th</sup> World Winter Service and Road Resilience Congress. We look forward to welcoming you to Chambéry.**

Located in the heart of the alpine road links between Geneva, Lyon and Turin, our city is the gateway to the 60 stations of Savoie, destination leader of the French mountain with nearly 24 million tourist nights per year. Chambéry is therefore particularly concerned by the challenges of Winter Viability.

All local stakeholders, both public and private, mobilized alongside us to collectively prepare this congress, in close collaboration with the PIARC teams. Through technical visits and workshops, you will be able to discover the tools and solutions put in place to manage traffic flows and facilitate access to resorts, especially in periods of high tourist influx.

Chambéry is also a city on a human scale, with a historic center with colorful facades, welcoming many shops and a wide variety of restaurants that will allow you to appreciate all facets of French gastronomy.

Our city enjoys an exceptional environment between lakes, vineyards and mountains. Do not hesitate to extend your stay to discover the beautiful landscapes that surround us.

We hope you will enjoy discovering our beautiful destination and look forward to seeing you from March 10 to 13, 2026!



## BRIEF DESCRIPTION OF **PIARC**

**PIARC (the World Road Association)**, founded in 1909 with a current membership of over 120 governments from around the world, **is the world's main forum for sharing knowledge and experience of policies and practices relating to roads and road transport.** It has consultative status to the United Nations Economic and Social Council and contributes to the stable and sustainable global development of the road and transport sector.

PIARC exists to serve all its members by:

- **Be a leading international forum** for analysis and discussion of the full spectrum of transport issues related to roads and related transport.
- **Identify, develop, and disseminate best practice** and give better access to international information.
- Consider fully within its activities **the needs of developing countries and countries in transition.**
- **Design, produce, and promote efficient tools** for decision making on matters related to roads and related transport.



## **AN EAGERLY AWAITED CONGRESS**

The World Winter Service and Road Resilience Congress is traditionally held every four years. Following an online event in 2022, **the forthcoming seventeenth edition of the congress is back in-person and eagerly awaited by road, road transport and winter service actors.** It will give them the opportunity to talk about the technical, climate-related and economic challenges they face, share experience to drive progress, and find out about the latest technical and technological advances presented by exhibitors and partners over the four days of the event.

In its seventeenth edition, the World Winter Service and Road Viability Congress **will continue to address topical issues:** in addition to the road resilience component introduced at the Calgary Congress, part of the presentation and workshop programme will focus on decarbonization.

This high-stakes issue affects all PIARC member countries and will enable those not specifically affected by winter service and road viability issues to participate fully in the event. **Over 1,200 participants** (operators, manufacturers, engineers, representatives of regional and national administrative bodies, academics, etc.) are expected to attend this edition.





## THE CITY OF CHAMBÉRY AND SAVOIE EXPO

**Chambéry is capital of Savoie, a department particularly affected by winter service and road resilience issues.**

**A key hub for all the major motorways** through the Alps, near two international airports (Lyon-Saint Exupéry and Geneva) and on the road to 60 iconic ski resorts and areas, **Chambéry attracts significant numbers of tourists in winter.** Located at the heart of a top destination worldwide for skiing and the outdoors, representing almost 70% of the French offering.

With many international road links, at an hour away from the Fréjus Tunnel, Chambéry is also **a gateway to Italy.** Apart from the risks relating to greenhouse gases generated by this intense level of road trade, the mountainous region of Savoie **has over 2,000 sites susceptible to natural hazards.**

Chambéry and Savoie are therefore committed **to confronting these issues on a daily basis and to come up with sustainable solutions** by relying on a real mountain ecosystem of public and private actors, companies and university laboratories, researchers and students, all working together on the challenges posed.

### SAVOIE EXPO EVENT CENTRE

**The 17<sup>th</sup> World Winter Service and Road Resilience Congress** will be held at the Savoie expo event centre. Renovated in 2019, it offers functional, interconnected halls to facilitate traffic flows.

With its 2,000 free parking spaces, its accessibility and its modularity, it is ideally suited to the format of the event, where you will be able to exhibit your knowledge and chat to participants in a friendly, comfortable setting.



# CONGRESS THEMES, PROGRAMME AND EXHIBITION

## KEY FIGURES FOR THE CONGRESS

Over the 4 days of the congress, **23 topics** will be covered in relation to **3 key themes**:

- **8 “winter service” topics**
- **7 “road resilience” topics**
- **6 “decarbonization” topics**
- **And 2 topics overlapping the themes of road resilience and decarbonization**

Multiple aspects of these themes (human, technical, climate-related, technological, etc.) will be addressed through:

- **45 technical sessions**
- **4 poster sessions**
- **4 special project sessions**
- **8 investigative sessions**
- **8 workshops**
- **3 strategic direction sessions**



# TECHNICAL PROGRAM DRAFT

Day	Time	Plenary room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Poster sessions	Exhibition hall	Technical Visits		
Tuesday 10 March 2026	08:00 - 08:45	REGISTRATION AND ACREDITATION											
	08:45 - 09:00	REGISTRATION AND ACREDITATION											
	9:00 - 10:30	Opening Session											
	10:30 - 11:00	COFFEE BREAK											
	11:00 - 12:00	Ministers / Majors / Authorities Session											
	12:00 - 13:00											Opening of the Exhibition	
	13:00 - 14:00	LUNCH										Exhibition	
	14:00 - 15:30	W1	W2	SP1	R1	D1	F1	WK1					
	15:30 - 16:00	COFFEE BREAK											
	16:00 - 17:30	W3	W4	W5	R2	D2	F2	WK2					
17:30 - 19:00	WELCOME COCKTAIL												
Wednesday 11 March 2026	8:45 - 9:20	Keynote Session 1										Exhibition	
	9:20 - 9:30										Poster Session 1 W1-5 R1-2 D1-2		Technical Visits A
	9:30 - 11:00	W6	W7	R3	R4	D3	F3	WK3					
	11:00 - 11:30	COFFEE BREAK											
	11:30 - 13:00	W8	W9	W10	R5	D4	SP2	WK4					
	13:00 - 14:00	LUNCH											
	14:00 - 15:30	W11	W12	SP3	R6	D5	F4	WK5		Poster Session 2 W6-10 R3-5 D3-4	Technical Visits B		
	15:30 - 16:00	COFFEE BREAK											
	16:00 - 17:30	W13	W14	W15	R7	D6	F5	WK6					
	17:30 - 17:45												
Thursday 12 March 2026	8:45 - 9:20	Keynote Session 2										Exhibition	
	9:20 - 9:30										Poster Session 3 W11-15 & 21-25 R6-7 & 11-13 D5-6 & 9-10		Technical Visits C
	9:30 - 11:00	W16	W17	R8	R9	D7	F6	WK7					
	11:00 - 11:30	COFFEE BREAK											
	11:30 - 13:00	W18	W19	W20	R10	D8	SP4	WK8					
	13:00 - 14:00	LUNCH											
	14:00 - 17:30	5 <sup>th</sup> World Snowplough Championship									Technical Visits D (not related to winter service)		
	19:00 - 21:00	GALA DINNER											
Friday 13 March 2026	8:45 - 9:20	Keynote Session 3										Exhibition	
	9:20 - 9:30										Poster Session 4 W16-20 R8-10 D7-8		Technical Visits E
	9:30 - 11:00	W21	W22	R11	R12	D9	F7	WK9					
	11:00 - 11:30	COFFEE BREAK											
	11:30 - 13:00	W23	W24	W25	R13	D10	F8	WK10					
	13:00 - 13:15												
	13:15 - 14:00	Closing Session	LUNCH										

● Plenary Sessions 
 ● W=Winter Service Session 
 ● R=Resilience Session 
 ● D=Decarbonization 
 ● F=Foresight Session 
 ● SP=Special Project Session 
 ● WK=Workshop 
 ● Posters Sessions 
 ● Exhibition 
 ● Technical Visits



## TECHNICAL VISITS PROVIDING MAJOR INSIGHTS

The congress venue is geographically situated in the heart of an environment particularly affected by the three themes, enabling **an extremely wide range of technical visits** to be offered (road and motorway networks, production facilities, roadwork sites, laboratories, research centres, etc.), providing a concrete illustration of challenges faced, solutions applied and strategies considered.

There will be a particular emphasis on winter service, **since the Auvergne Rhône-Alpes region has been selected to host the Olympic Winter Games in 2030**. Our region is also severely affected by climate change and its implications in terms of natural risks with an impact on all road disciplines. This topic is particularly relevant to our region's mountainous terrain and that of our Alpine neighbours Valais in Switzerland and Aosta Valley and Piedmont in Italy, which are involved in organising the congress.

## AN EXHIBITION AT THE HEART OF THE CONGRESS

Over 120 exhibitors (national pavilions, operators, manufacturers, companies supplying products, machinery or services, startups, etc.) are expected in over 2,000 m<sup>2</sup> of exhibition space, providing you with an opportunity to talk to a whole host of professionals and discover the latest developments presented by our partners. Several lounge areas will be provided in the exhibition space, offering you a comfortable setting in which to hold meetings.

Would you like to exhibit at the event and gain a unique opportunity to meet over 1,200 decision-makers from around the world? Please don't hesitate to contact us to find out how we can help you: **[sponsorship@piarc-chambery2026.com](mailto:sponsorship@piarc-chambery2026.com)**

## MULTIPLE HIGHLIGHTS

Naturally, this congress will include all the **usual highlights**, such as the opening and closing ceremony, drinks reception and gala dinner. All these events will showcase the values of friendship, authenticity, camaraderie and sharing engrained in Savoyard hospitality and cherished by members of the PIARC community.

## INTERNATIONAL SNOWPLOW CHAMPIONSHIP

The International Snowplow Championship will be held on site, allowing all participants to cheer on contestants in this competition that has become a key fixture in **the congress schedule and pits the best drivers selected by each country** against each other. Competitors will go undergo a series of trials testing their skill and handling on a technical course to determine who will be the new world champion.



## PROGRAMME FOR COMPANIONS

Surrounded by breathtaking landscape with lakes, vineyards and mountains, **Chambéry boasts a wide variety of activities for companions. Whether you're into art, culture, heritage, gastronomy, wellness or outdoor pursuits, you'll be treated to a packed and varied programme in 2025.**



# CALL FOR PAPERS

## INTRODUCTION

PIARC (World Road Association) is calling for individual contributions on selected topics for the 17<sup>th</sup> PIARC World Winter Service and Road Resilience Congress, which will be held in Chambéry (France), 10–13 March, 2026.

The World Winter Service and Road Resilience Congress is a world-class event that builds on decades of PIARC experience. It brings together road experts and practitioners from across the globe. This will be the 17<sup>th</sup> edition of the World Winter Road Congress, which PIARC has organized every four years since 1969.

The 2026 Congress will be structured around three themes: Winter Service, Resilience and Decarbonization.

## SUBMISSION OF ABSTRACTS AND FULL PAPERS

Contributions are invited only on the topics described below. Papers that fall outside this scope will not be considered. Authors are invited to submit an abstract using the online facility from the Congress website at: <https://abstracts-chambery2026.piarc.org> before 31 January 2025.

Abstracts may be submitted in English, Spanish and French, which are the official languages of the Congress. Please note that the English version will be used for the evaluation; it is therefore requested that you attach this version (possibly with the help of an automated tool). Abstracts should not exceed 400 words.

All papers must be original and authorized for publication. Proposals that have already been published will not be accepted. Any reference of a political, commercial or advertising nature is excluded from the papers, as is the indication of a trademark in the title or summary.

The papers should present case studies, research results and/or practical experiences related to the topics of this call.

Papers will be reviewed by PIARC Technical Committees. Papers that are accepted will be published in the Congress proceedings and will provide input into the Congress sessions. All authors of accepted papers will present their work and results at interactive poster sessions. Some outstanding contributions will be selected for an oral presentation during the Congress.


## KEY DATES

Call for papers	From September 2024
Deadline for authors to submit abstracts	31 January 2025
Notice of acceptance of abstracts	15 April 2025
Deadline for authors to submit full articles	15 July 2025
Notice of acceptance of full articles	31 October 2025
17 <sup>th</sup> World Winter Service and Road Resilience Congress – Chambéry 2026	10-13 March 2026

## PIARC PRIZES 2026

Prizes will be awarded to the best papers among individual contributions as a result of the call for papers. More information will be released on the Congress website later.

## CONTACT INFORMATION

 <https://abstracts-chambery2026.piarc.org>  
 [paperschambery2026@piarc.org](mailto:paperschambery2026@piarc.org)  
[www.piarc.org](http://www.piarc.org)

# THEME WINTER SERVICE



## TOPIC 1

### Management of Human Resources in Winter Service

Winter Service needs Human Resources. The topic deals with how to manage to have enough, motivated and good staff. That means good educated and well-trained persons. The same applies for contractors. It is very important to attract people for the job, especially young people and women to increase the number of operators and their knowledge.

#### Including:

- Measures for attracting people for the job
- Education and Re-Education
- Training in the job
- Access to knowledge
- Staff Motivation
- Contracting in Winter Service
- Staff Safety
- Organization of on-call-service
- Promote gender and diversity



## TOPIC 2

### The impact of climate change and extreme weather on Winter Service (WS) as well as WS environmental aspects and decarbonization

Nature and the environment can have a big influence on WS. So, it is essential to be prepared for extreme situations. There is also a task to reduce the negative impact of WS on the environment, especially through decarbonization.

#### Including:

- Decarbonization in Winter Service
- Environmental aspects of WS
- Influence of WS on the infrastructure
- Measures to reduce the influence on the environment and the infrastructure
- Climate change and its effects on WS and its organization
- Management of Extreme weather situations

## THEME **WINTER SERVICE**



### **TOPIC 3**

#### **Road Weather Information and Forecast for Winter Service**

Good and efficient Winter Service needs a good weather information and good forecasts, their professional analysis and implementation in the practical Winter Management. The topic deals with the knowledge, the technique and the methods of Road Weather Information Systems.

##### **Including:**

- Forecasts for Winter Service
- Road Weather Information Systems
- Implementation of RWIS in Winter Maintenance
- Maintenance Decision Support Systems



### **TOPIC 4**

#### **Implementation of new technologies and methods in winter operation**

There are many new and changing tasks and requirements for winter service, its management and staff. New or further developed technology and methods can meet these requirements and can help to solve the issues.

##### **Including for example:**

- Driver Assistance Systems
- Automatic Spreading and Plowing Systems
- Spreading Technologies and Spreading Agents
- Snow or Ice Removal Systems
- All fields and tasks of WS can be included here

## THEME **WINTER SERVICE**



### **TOPIC 5**

#### **Winter Maintenance Management**

The time and intensity of winter service operations cannot be planned for long times. However, the organization must be ready at all times to make fast and efficient operations. This topic deals with all measures to organize and prepare winter maintenance operations.

##### **Including:**

- Winter Service Guidelines
- Operation Planning, Route Planning
- Strategies for Use of spreading agents, Regulations for the spreading densities
- Connection between Winter Service and traffic safety and economy
- Control operations management
- Winter Maintenance Equipment Management, Fleet Management
- Quality Management
- Public Relations and communication in Winter Maintenance



### **TOPIC 6**

#### **Communication and use of Data from cars and roads for Winter Service**

With modern cars having more connectivity power and sensors, how can we use the information received to help make better winter maintenance decisions? How can these data be combined with data of roads, of service operations and of RWIS? In addition, how can we use the connection to send live updates to cars which are travelling on the roads?

##### **Including:**

- Ways and systems of communication between cars and infrastructure for winter service
- Analyzing and using data for winter maintenance
- Distribution of data for road users
- Data Exchange with other partners (e.g., Public Transport)
- Data Quality Management

## THEME **WINTER SERVICE**



### **TOPIC 7**

#### **Winter Service in Urban Areas**

Winter Service in urban areas has special tasks and requirements. On the main roads we have very high traffic volumes with many junctions. For pedestrians there special winter service operations must be conducted, and public transport has high priority. Plants and trees in the cities must be specially protected. Large amounts of snow must be transported away.

##### **Including:**

- Guidelines for winter service in urban areas
- Plans for priority areas for Winter Service (e.g., hospitals, schools ...)
- Expectation of the citizens
- Use of spreading agents in urban areas
- Winter Service for pedestrians
- Requirements of people with disabilities in winter
- Requirements of public transport for winter maintenance
- Protection of the environment in urban areas
- Snow removal and snow transport in urban areas
- Special Urban Road User Information Systems



### **TOPIC 8**

#### **Winter Service on bicycle infrastructure**

Winter cycling becomes more and more popular, hence winter service on bicycle infrastructure has to keep up with that demand. While most bikeways are within cities, there are also some interurban bikeways connecting towns.

##### **Including:**

- Guidelines for winter service on bicycle infrastructure
- Equipment used for winter service on bicycle infrastructure
- Winter Maintenance on bicycle paths

## THEME RESILIENCE



### TOPIC 9

#### Improved Planning for Resilience of Road Networks and Road Organisations

The growing challenges and risks from natural hazards demand improvements to resilience management of road networks as well as resilience of the organisations which own and manage the networks. In general, road networks and organisational systems have developed some resilience to natural hazards as part of business-as-usual development and maintenance initiatives. However, the accelerated demand of hazard management due to climate change impacts requires improved planning methodologies to maintain network resilience. The emerging expectations around sustainable development, climate impact adaptation, carbon emission reduction, environmental impact management, nature positive solution and so on also need to be considered in the process.

As part of a simplified and wholistic approach of hazard planning, the climate change related hazards can be addressed along with other natural hazards such as earthquakes, volcano eruption, tsunamis, land movement etc. Accordingly, improvement actions need to be designed for targeted resilience outcomes in a changing context and with a middle/long-term perspective.

We are calling for papers based on technical studies, best practices, lessons learned, review reports on methodologies, or programmes and approaches. The aim of the papers must be to improve network resilience planning frameworks for addressing all hazards including climate change, and / or exploring organisational resilience opportunities to achieve network resilience.



### TOPIC 10

#### Management and Resilience Building for Disasters

Extreme weather events and their consequences, like higher temperatures, heavy rainfall, snowfall, landslides and rockslides, droughts, and forest fires are increasingly severe and frequent globally, posing significant challenges for road management. In supply chains, efficient logistics infrastructure, primarily roads, are crucial for uninterrupted product delivery. Roads are essential for disaster response, enabling access for rescue operations and emergency supplies. To maintain connectivity amidst disasters, road administrators must enhance resilience in road infrastructures and implement agile management systems capable of swift disaster response.

#### **We are calling for papers addressing the following topics:**

- Coping with extreme weather  
Share your world-wide case studies to identify improvement strategies for responding to and coping with extreme weather disasters and building resilience into road networks.
- Social resilience within communities and public authorities  
Share your experience on social resilience in road administrations, focusing on collaboration among road managers, users, communities, and authorities, especially on the preparedness through education, training, and community involvement in response activities.
- Infrastructure resilience for supporting supply chain  
Share your practices related to the preparedness, mitigation, response, and recovery measures for securing resilience of road networks to support supply chain continuity, such as the practices in the areas of training, technologies, tools, and management strategies/actions.

## THEME RESILIENCE



### TOPIC 11

#### Rural Roads Resilience in a Changing Climate

Rural roads in PIARC member countries have different definitions, construction methods and functions.

For the majority of low- and middle-income countries, rural roads play an important role in economic development in that they not only enable people to move between localities, but also transport agricultural produce to major urban centres for marketing.

Considering these essential functions, it is alarming to note that climate change is significantly affecting the sustainability of rural roads, preventing them from effectively fulfilling their roles. Authors are invited to present an overview of its existing rural roads, the construction techniques and procedures used, and the impact of climate change on the sustainability of these rural roads and the solutions being considered.

#### We encourage articles that address the following topics:

- Rural road´s construction and maintenance techniques:
  - Graveling using locally available materials
  - Sealing of low volume roads
  - Routine, Periodic Maintenance
  - Emergency Maintenance
- Analysis of the impact of climate change on the sustainability of rural roads:
  - Erosions and slope protection measures
  - Rural road Safety Concerns Due to Climate Change-Induced Weather Events
  - Strengthening road resilience
  - Rural roads design upgrade to meet standards of national paved roads
  - Nature-based solutions to enhance road durability and environmental sustainability



## THEME RESILIENCE



### TOPIC 12

#### **Resilience of road freight traffic facing adverse situations: foresight, modelling, response and lessons learnt**

Natural disasters, including weather events but also major disruptive events such as bridge collapse or strikes, demonstrations, or geo-political conflicts, can cause disruptions to the multimodal freight network and industry supply chains. These disruptions impact communities, businesses and the overall economy. When large-scale events disrupt freight systems, supply chains can fail, and populations are at risk of losing access to basic necessities and critical supplies needed to support recovery. Emergency response and recovery activities are dependent on the expeditious movement of utility service vehicles and trucks carrying emergency supplies, medicine, food, fuel, and infrastructure repair materials to the affected area. Freight system resilience, the ability of the system to resist and rebound from disruptions, is essential to ensure the reliability of economically important supply chains and, the timely distribution of critical resources and services. Multimodal freight transportation system resilience depends on the collaboration between public sector infrastructure owners and operators and privately-owned modes, carriers and shippers.

Papers should address examples of such disruptions either from actual case study (lessons learnt) or from foresight study. They should highlight how to build resilience into the multimodal transportation infrastructure, structures and tunnels, planning, design, management, and operations to mitigate the impact of major disruptive events and maintain or restore services during and after major disruptive events.

Among topics to be considered are data and analysis to facilitate identification of threats and risk factors that disrupt multimodal freight transportation system operations, metrics to measure the resilience of the freight transportation system, investment to build resilience in the freight transportation system, response planning to support remediation of infrastructure damage, effective restoration of services, strategies to improve freight transportation network resilience, strategies to mitigate supply chain disruptions, best practices in freight transportation and supply chain resilience, and the role of road authorities.

## THEME RESILIENCE



### TOPIC 13

#### Improving Road Safety Resilience through the Safe System Practices

Road Safety continues to be a leading cause of death and serious injuries worldwide. Road crashes also create significant impacts to transport leading to non recurrent congestion and loss of efficiency, making for a less resilient system for all road users. Road safety policies that reduce crashes also are investments that provide for a more resilience system by removing unexpected blockages and secondary crashes. Safety for all road users is a necessary component of a resilient transport system as not all have access to equal means of transportation as can be shown in the vulnerable road user statistics for low and middle income countries.

#### Papers related to the following areas are requested:

- Providing resilient transport options by ensuring road safety of Vulnerable Road Users
- Increasing resiliency in transport through proactive approach to road safety improvements
- Speed management to provide for a more resilient and safe transport system
- Diagnosing Road Safety Problems and Opportunities



### TOPIC 14

#### Asset Management Measures for reducing risks and improving the resilience of road networks

This call for papers will contribute to building the body of knowledge on how to manage transportation infrastructures assets with the goal to increase the resilience of road networks to climate change and other stressors.

It is important to expand current approaches in asset management decision-making to incorporate risk- and resilience-based approaches, in the face of various threats to transportation infrastructure. Proven approaches can help road asset managers best focus risk and resilience aspects to enhance road preservation and renewal decisions.

We are looking for case studies with best practices and approaches of Asset Management to improve the resilience of the road infrastructures.

Experiences from low, middle and high income countries are all welcome.

## THEME RESILIENCE



### TOPIC 15

#### How can the resilience of aging bridges be improved in the context of climate change?

The resilience of bridges relates to ability of infrastructure to resist, absorb, accommodate and recover from the effects of an event or hazard in a timely and efficient manner, including preservation or restoration of its essential service and function. Resilience has become more prominent over the decades, with bridges more frequently and more severely impacted by climate related events, such as flooding, tidal surges, storms, and fires. At the same time, bridges are aging and experiencing increases in traffic load and intensity. In addition, the majority of existing bridges were not designed to accommodate these changes and they are continuing to age and deteriorate with time.

Structural redundancy is an important feature to understand and incorporate when considering resilience and the continuity of service that is expected by the communities and economies that use highway bridges. As a result, this session will discuss bridge resilience in the face of climate change, aging, and increasing traffic demands, with a particular focus on structural redundancy and robustness.

#### Papers are invited on the following topics:

- Emergency response examples, including bridge recovery after the occurrence of sudden events or hazards
- Mitigation to accommodate effects due to sudden events or hazards for road bridges
- Measures and considerations for increasing resilience
- Effects of resilience, redundancy, and robustness on bridge design and maintenance

## THEME RESILIENCE & DECARBONIZATION



### TOPIC 16

#### How to apply innovative ITS technologies delivering decarbonised and climate resilient network operations

All governments are developing Net Zero strategies and action plans to decarbonise our transport and infrastructure. Stakeholders from both government and industries are all rethinking the transport network and systems to support the decarbonisation and sustainability. There are enormous opportunities to reduce transport sector emissions by promoting better network operations planning, shifting to more sustainable or low emission ways of moving goods and people, and increased use of innovative ITS (intelligent transport systems) technologies such as digital communication, big data models, optimised network management, congestion mitigation, incident management and traffic controls, etc.

At the same time, climate resilience of our road network operations is also critical as the impacts of climate change and extreme weather conditions continue to worsen (e.g. floods, heat, storming, fire etc.). ITS technologies and toolkits are often used to provide agile, effective and economic forecasts, prevention, interventions and warnings.

#### We are calling for innovative research, best practice and impact assessment papers addressing:

- Adopting emerging ITS and digitisation technologies to detect, track, measure, manage and improve the network decarbonisation
- Development and applications of ITS related tools for climate resilient transport operations



### TOPIC 17

#### Earthworks & Earth Structures faced with climate changes

Earth structures are the most sensitive to climate change, which poses real challenges in terms of stability for existing structures, but also for the design of new structures. Because of the materials they are made of, earth structures are particularly sensitive to variations in rainfall, drought or other meteorological factors, which can accelerate deterioration, ageing and instability. Current standards therefore need to be completely revised. The earthworks industry needs to adapt to these changes and reduce its impact on the climate, with new management practices for earthworks, new methods such as resilience, and the need to decarbonise works.

We call for papers from diverse stakeholders in the earthworks sector (contractors, project owners, managers, design offices) describing examples, references, case studies and best practice **in these three themes:**

- Earthworks asset management (maintenance, planning, monitoring, small repair, etc.)
- Resilience and
- Decarbonisation of works

## THEME **DECARBONIZATION**



### **TOPIC 18**

#### **Strategic Road Investments: Contributions and Impacts on National Decarbonization Plan**

Roads are an integral part of national infrastructure. This call for papers seeks to explore how roads can support carbon reduction goals and promote environmental sustainability. This topic aims to promote an in-depth understanding of how road investments and road and motorway planning policies can be aligned with national decarbonization policies by providing a platform for sharing knowledge and best practices among researchers, practitioners and policymakers.

#### **Topics of interest include:**

- Investment Models: Analysis of road investment strategies in national plans for decarbonisation, and role of road investments specifically targeted to reach the GHG reduction targets (type of roads, lanes for public transport, IT systems, intermodal hubs...)
  - Decarbonization Policies: Integration of road policies with national decarbonization goals
  - Decarbonization Policies: Use of pricing schemes to be applied to roads based on “pay per pollute” criteria and generally aimed at reducing through economic and financial tools the GHG emissions generated by the use of roads
  - Socioeconomic Impacts: Assessment of economic and social effects of sustainable road investments caused by the digital economy, post-pandemic economy and estimation tools to measure socioeconomic impacts, and broader economic and social impacts. This can also include broader economic and social impacts such as the effects of road construction and operation on equity, economic systems and gender inclusion and diversity
- Socioeconomic impacts: Assessment of the effects of the foreseen increase of CO2 emissions in the “do-nothing” scenarios and comparison of different scenarios with analysis of the social and economic consequences
  - Socioeconomic impacts: Analysis of the equity issues related to the expected migration to Electric Vehicles: opportunities and constraints
  - Case Studies: Successful experiences and lessons learned from different nations

## THEME **DECARBONIZATION**



### **TOPIC 19**

#### **Road solutions for the decarbonization in Urban and Periurban areas**

This topic addresses planning in uncertain times when different kind of crisis is triggering significant changes in cities. An immediate crisis can cause further long-term changes and increase the impact of other major trends, such as climate change. Managing such fundamental change processes is a key challenge for road administrators and urban mobility practitioners to integrate into their plans for urban and metropolitan areas.

**Papers shall deal with (but not only) the following topics:**

- Better cooperation between transport modes in urban and peri-urban areas, promote multimodality to make mobility system flexible, resourceful, inclusive and with zero or low emissions.
- Urban Vehicle Access Regulations (UVARs) for reducing greenhouse gases from the road sector and responding to increased resilience and sustainability request of city and metropolitan areas
- New road solutions and new guidelines of improving secure and safe mobility for all vulnerable road users (including new mobilities) for the decarbonization of cities



### **TOPIC 20**

#### **Electric Road Systems: The Next Step for Electric Vehicle Charging?**

Reducing carbon pollution from the road transport sector is a critical step towards net zero goals for countries around the world. Biofuels, hydrogen, e-fuels, and electricity will all play a role in the energy transition, but electrification is expected to be the most widely applicable. Continuous in-road charging, or electric road systems (ERS) has the potential to remove barriers to further integration of electric vehicles (EVs) in the road transport sector. ERS also has the potential to change how roads and EVs are designed (e.g., smaller batteries) to further reduce environmental impacts of transport.

We call for papers on the latest advances in ERS design methodologies, optimization strategies, and integration techniques to enhance energy efficiency and sustainability. Research results, case studies, and implementation examples are encouraged to share both opportunities and challenges with ERS.



### **TOPIC 21**

#### **Measures to reduce the carbon footprint of pavements**

Pavements produce several GHG emissions during the different stages of their life cycle: i.e., during the production of the construction materials, during the construction of the pavement itself, or during its use stage including maintenance.

Papers dealing with this issue can present case studies or research projects on calculation methods of the carbon footprint of a project, how to introduce carbon footprint in the tender phase of a project, how to reduce the carbon footprint during the pavement life cycle, etc.

## THEME **DECARBONIZATION**



### **TOPIC 22**

#### **Decarbonisation of road construction and maintenance**

Decarbonisation of road construction and maintenance is one of the biggest challenges in the road industry.

Articles should focus on current strategies, programs, tools and trends in decarbonising road construction and maintenance. The goal of decarbonisation efforts should be to significantly reduce greenhouse gas emissions.

#### **Topics:**

- Strategies and programs for decarbonisation in road design, construction and maintenance.
- Planning, coordinating and supervising the activities related to the delivery of materials, equipment and workforce required for the road construction project in terms of carbon dioxide emissions
- Designing road infrastructure with consideration of decarbonisation at the construction and maintenance stage
- Measures and methods of road decarbonisation in road construction and maintenance
- Selection of the type of equipment (conventional and special) and related work categories in road construction and maintenance decarbonisation
- Decarbonisation from the perspective of contracts, financing and incentives
- Indicators in road construction and maintenance decarbonisation
- Monitoring of decarbonisation strategies, programs and actions
- Carbon footprint calculators in road construction and maintenance



### **TOPIC 23**

#### **Comparative Analysis of the Evolution of Road Statistics**

The world of road infrastructure consists of several key elements that have evolved over time.

We are calling for articles that examine some of the indicators related to the evolution of one or more elements of the road network. The proposed indicators will be presented and compared on a national and international scale.

Accordingly, the proposed indicators could be made on a country's infrastructure as a whole (evolution of overall statistics on existing road infrastructure), studies of traffic trends at the national road network level (passenger or freight), evolution of environmental impacts of a country's traffic on the air quality (according to the different components), evolution of safety statistics on the accidents at a country's scale, or combination of several types of indicators. Indicators could be quantitative or qualitative like road policies.

The proposed indicators can be cross-referenced with socio-demographic, economic, and environmental factors. The study will include data sources and indicators' definitions, as well as the quality and reliability of the data collection. It is possible to integrate indicators from several data sources, present survey tools that measure the evolution of indicators over time, and innovative data collection typologies.

## CONTACT

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