



Department of Highways



Roads Association of Thailand



World Road Association

# First Announcement



**The 5th International Conference  
on Highway Engineering 2024  
"Future-Proofing Roads for Asia and Beyond"  
&  
PIARC International Seminar  
on the Transport Agency of the Future  
&  
PIARC Workshop on Road Safety**

**Bangkok International Trade & Exhibition Centre (BITEC), Thailand  
Wednesday 4 – Friday 6 September 2024**

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## **A: BRIEFING**

**The 5th International Conference on Highway Engineering 2024  
"Future-Proofing Roads for Asia and Beyond"  
&  
PIARC International Seminar on the Transport Agency of the Future  
&  
PIARC Workshop on Road Safety  
4<sup>th</sup> – 6<sup>th</sup> September 2024  
Bangkok International Trade & Exhibition Centre (BITEC), Thailand**

The 5th International Conference on Highway Engineering (iCHE2024) and PIARC International Seminar on the Transport Agency of the Future is a free-to-attend concurrent event for those involved in the roads and road transport sector. The conference comprises of executive meeting, plenary session, technical presentation, workshop, panel discussion, technical visit, and exhibition. It will be held on 4 – 6 September 2024 at BITEC, Bangkok, Thailand.

### **CONFERENCE THEME**

The event is organised under the theme “Future-Proofing Roads for Asia and Beyond” comprising four main tracks. Participants can join in these tracks according to their area of interest.

**Track A:** Efficient, Inclusive and Safe Road Management

**Track B:** Smart Mobility, Digital Technology and Innovation for Roads

**Track C:** Sustainability and Resilience of Road Networks

**Track D:** PIARC International Seminar on the Transport Agency of the Future

### **HIGHLIGHTS**

#### **Technical Session**

The conference has three technical parallel sessions under three topics. In this forthcoming insightful technical sessions, academics, and practitioners will gather to share and exchange their wealth of knowledge and experience.



#### **Forum & Workshop**

Aside from the conference programme, attendants can participate in the forum and workshop sessions.



#### **Exhibition & Networking**

The iCHE2024 offers the opportunity to network with over 1,000 professionals, policy makers and academics in road and transport sector and related fields. It presents an opportunity to showcase and promote the company's product brand and network.



## **B: DETAILS**

**The 5th International Conference on Highway Engineering 2024  
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&  
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&  
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### **1. ABOUT THE CONFERENCE**

At present, the world is undergoing rapid changes, encompassing issues such as climate change, new technologies, urbanisation, demographic changes, and various global mega trends. As stewards of road infrastructure, we must contemplate how to plan, design, construct, maintain, and manage roads in various aspects to effectively address the challenges posed by these swiftly evolving trends that are approaching in the near future.







Highway construction technology and incident management have experienced significant advancements, particularly with the integration of AI technology. The exponential growth in computational capacity raises concerns among engineers, scientists, and technology developers about the sustainability of current technologies for future generations. Questions arise regarding the lifespan of highway structures, the environmentally responsible recycling of construction materials, and the need to address global warming concerns by promoting sustainable economic growth with controlled greenhouse gas emissions.

Ensuring a safe road environment for everyone and enhancing productivity for both public and private sectors are paramount. Striking a balance between technological innovation and environmental stewardship is crucial for the well-being of current and future generations. As we embrace advanced technologies, it becomes imperative to design and implement solutions that not only enhance mobility and safety but also contribute positively to economic growth while maintaining neutrality in greenhouse gas emissions.

The theme of the conference, 'Future-Proofing Roads for Asia and Beyond', makes a timely and crucial call to action. The iCHE2024, organized by the Department of Highways (DOH) and the Roads Association of Thailand (RATH), in concurrence with PIARC International Seminar on the Transport Agency of the Future is pushing the boundaries of 21st century roads and road transport, preparing them for the challenges and opportunities, and shaping the future of road transportation. This concurrent event aims to foster engagements of specialists, professionals, decision-makers, and industry leaders, as well as to help building resilient, adaptable, and future-proofing roads for Asia and beyond.

Professionals and academia are cordially invited to share their knowledge, experience, and insights in cutting-edge advancements for efficient, smart, and sustainable roads and road transport. The event program encompasses plenary sessions, technical presentations, executive meetings, workshops, and exhibition.

## 2. CONFERENCE PROGRAMME

Day 1: Wed 4 Sep 2024					
Start from 8:00	Registration				
09:00 – 09:30	[GH 203] Opening Ceremony				
09:30 – 10:15	[GH 203] Signing Ceremony with PIARC				
10:15 – 11:00	[GH 201-202] Opening of Exhibition (Coffee break)				
11:00 – 12:00	[GH 203] Keynote Session : Green Roads for All: Building Equitable Road Infrastructure for Sustainable Future (TBC)				
12:00 – 13:00	Lunch Break				
13:00 – 14:30	[GH 201] <b>Track A:</b> Efficient, Inclusive and Safe Road Management	[MR 211-212] <b>Track B:</b> Smart Mobility, Digital Technology and Innovation for Roads	[MR 222-223] <b>Track C:</b> Sustainability and Resilience of Road Networks	[MR 214-215] <b>Workshop 1:</b> PIARC TC 3.1 : Road Safety 	
14:30 – 15:00	Coffee Break				
15:00 – 16:30	[GH 201] <b>Track A:</b> Efficient, Inclusive and Safe Road Management	[MR 211-212] <b>Track B:</b> Smart Mobility, Digital Technology and Innovation for Roads	[MR 222-223] <b>Track C:</b> Sustainability and Resilience of Road Networks	[MR 214-215] <b>Track D:</b> PIARC International Seminar (Innovation) 	[MR 224] <b>Workshop 2:</b> Smart Tolling Hosted by FETC (TBC)
16:30 – 18:00	Networking Reception				
Day 2: Thu 5 Sep 2024					
09:00 – 10:00	[GH 203] Keynote Session : Roads to Resilience: Adapting Infrastructure to Changing Climate (TBC)				
10:00 – 10:30	Coffee Break				
10:30 – 12:00	[GH 201] <b>Track A:</b> Efficient, Inclusive and Safe Road Management	[MR 211-212] <b>Track B:</b> Smart Mobility, Digital Technology and Innovation for Roads	[MR 222-223] <b>Track C:</b> Sustainability and Resilience of Road Networks	[MR 214-215] <b>Track D:</b> PIARC International Seminar (Creating a future focused workforce) 	[MR 224] <b>Workshop 3:</b> BIM Hosted by TCA
12:00 – 13:00	Lunch Break				
13:00 – 14:30	[MR 223] <b>Track A:</b> Efficient, Inclusive and Safe Road Management	[MR 211-212] <b>Track B:</b> Smart Mobility, Digital Technology and Innovation for Roads	[MR 222] <b>Track C:</b> Sustainability and Resilience of Road Networks	[MR 214-215] <b>Track D:</b> PIARC International Seminar (Public Value Creation by Transport Agencies) 	[MR 224] <b>Workshop 4:</b> Green & Sustainable Hosted by DOH
14:30 – 15:00	Coffee Break				
15:00 – 16:30	[MR 223] <b>Track A:</b> Efficient, Inclusive and Safe Road Management	[MR 211-212] <b>Track B:</b> Smart Mobility, Digital Technology and Innovation for Roads	[MR 222] <b>Track C:</b> Sustainability and Resilience of Road Networks	[MR 214-215] <b>Track D:</b> PIARC International Seminar (Envisioning the TA of the Future) 	[MR 224] <b>Workshop 5:</b> Road Safety Hosted by..... (TBC)
18:00 – 20:30	[GH 203] Gala Dinner & Cultural Show				
	**Technical Visit: M-Flow (Thu, 5 Sep 2024, 14:00 - 16:00) 				
Day 3: Fri 6 Sep 2024					
09:00 – 10:30	[GH 201] <b>Track A:</b> Efficient, Inclusive and Safe Road Management	[MR 211-212] <b>Track B:</b> Smart Mobility, Digital Technology and Innovation for Roads	[MR 222-223] <b>Track C:</b> Sustainability and Resilience of Road Networks		[MR 224] <b>Workshop 6:</b> Energy Saving LED Hosted by ... (TBC)
10:30 – 12:00	[GH 201] Public Forum : CAV Friendly Road Infrastructure Hosted by ITS Thailand & iTIC (TBC)				
12:00 – 13:00	Lunch Break				
13:00 – 14:30	[GH 201] Public Forum : Future-Ready Roads for EV Hosted by EVAT (TBC)				
14:30 – 15:00	Coffee Break				
15:00 – 16:00	[GH 201] Outstanding Paper Awards & Closing Ceremony				
16:00	End of the Conference				

### 3. PIARC EVENTS

#### About PIARC

PIARC stands for Permanent International Association of Road Congresses, which is the new name for the World Road Association. PIARC established in 1909 as a non-profit, non-political association aims to develop international cooperation and foster progress in the area of roads and road transport. It comprises of 125 member governments as well as private sector companies, universities, regions, individuals from high-income to low- and middle-income countries. PIARC is the world leader in the exchange of knowledge on roads and road transport policy and practices. The Association mobilizes the experience and knowledge of 1,200 experts from more than 80 countries in 20+ Technical Committees and Task Forces.

#### PIARC exists to serve all its members by:

- being a leading international forum for analysis and discussion of the full spectrum of transport issues, related to roads and road transport,
- identifying, developing and disseminating best practice and giving better access to international information,
- fully considering within its activities the needs of developing countries and countries in transition,
- developing and promoting efficient tools for decision making on matters related to roads and road transport.

#### About Technical Committee 1.1 - Performance of Transport Administrations

The arrival of the 4th Industrial Revolution and the rapid development and fusion of multiple disruptive and innovative technologies are changing the behaviour and the expectations of customers and stakeholders all over the world. At the same time demographic, economic, development, environmental, technological, and other trends are changing the demand for moving people and freight; the mobility options available to serve our customers; and the capacity of Transport Administrations to carry out their mission.

During the 2020-2023 Cycle, PIARC's Technical Committee (TC) 1.1 "Performance of Transport Administrations" explored topics on Customer Experience, Public Value Creation, Emerging and Disruptive Technologies, Workforce, and issues on Diversity, Equity, and Inclusiveness. One of the common threads identified among these topics was how Road and Transport Agencies will need to evolve in the future to address the challenges brought forward by the many externalities.

#### About Technical Committee 3.1 - Road Safety

Fatal and Serious Crashes continue to be a problem for countries of all sizes. Countries are working to effectively address locations that are experiencing or have risk factors that are likely to lead to crashes. Technical Committee 3.1 "Road Safety" provides key resources for safety practitioners. As vulnerable road users are an important part of the transport system, and efforts to address the safety of these individuals are critical to the success of any safety program. WG1 addresses this issue. The Safe System Approach is now widely accepted; however, low- and middle-income countries experience greater difficulties in securing funding, developing the knowledge base, and understanding the first steps towards Safe System Implementation. This gap is assigned to WG2. Road safety requires the assessment of safety data, such as crash information, roadway geometrics, roadside conditions, and human factors, to effectively select strategies to reduce crash potential. A report is being developed by WG3. The Road Safety Manual is a premier PIARC online reference for safety professionals. Updating and providing requested materials are important to those using this reference. In this cycle, the effort will also incorporate parts of the PIARC 1st Edition worksheets and tools by WG4.

#### The following PIARC events will be held:

- 1) PIARC International Seminar on the Transport Agency of the Future (during 4<sup>th</sup>-6<sup>th</sup> Sept) organized by TC 1.1.

**Theme:** Transport agency of the future, public value creation by transport agencies and strengthening workforce through modernizing skills, enhancing diversity, equity, and inclusion.

**Session topics:** “Innovation”, “Creating a stronger future focused workforce”, “Public Value Creation by Transport Agencies” and “Envisioning the TA of the Future”

**Objectives:** Over the last decade, there have been unprecedented and disruptive changes in transportation with the rise of new technological and service models, new pressures such as climate change, and the evolution of a complex mobility and transport ecosystem at a fast pace. Additionally, the transport sector is facing important challenges originated from the systemic changes taking place in society, the economy and the environment including new skills and the need to better identify the value created through by our transport systems and activities.

These sessions will engage the audience and share with them the challenges, drivers, thinking and actions that will need to be considered in the Transport Agency of the Future as each session unpacks and seeks to understand specific lines of enquiry within each area of interest.

**Targeted audience:** These sessions will be of benefit to all future leaders and practitioners from disciplines including human resources, people and culture, economics, engineering and technical, management and those interested in innovation and possible future directions.

2) PIARC Workshop on Road Safety (Sept 4<sup>th</sup> ) organized by TC 3.1.

**Theme: Future-Proofing Road Safety for Asia and Beyond**

**Objectives:** The future-proofing road safety for Asia and all regions of the world requires fully understand how or why countries make progress in road safety for all road users. Many high-income countries (HICs) with a mature road safety approach are using a Safe System Approach, which deals with proactive safety approach to reduce fatal and serious crashes and to develop transport systems that support safe road user behaviours and to reduce large crash forces that often lead to less than acceptable safety outcomes particularly with vulnerable road users. Road safety in many low- and middle-income countries (LMICs) are challenged with the implementation of the Safe System Approach because of the lack of governance/leadership, funding, expertise, political will, enforcement etc.

LMICs can learn from HICs, understanding that successful safety strategies must consider the difference in local contexts, safety culture and road user mix. Successful strategies consider local contexts and characteristics, funding challenges, and recognize that priorities must be set to achieve the greatest benefit for the safety investment. In meeting these challenges, LMICs are strongly encourage to invest in local capacity building to create effective road safety professionals and communities that enhance the knowledge of all key stakeholders.

**Targeted audience:** These sessions will be of benefit to all safety leaders and practitioners who plan, design and operate transport systems, particularly those wishing to move towards the Safe System Approach.

#### 4. TECHNICAL VISIT

The iCHE2024 offers the opportunity to visit “M-Flow.” You can join the programme when registered.





### **What is M-Flow?**

In a strategic initiative aimed at mitigating traffic congestion at toll plazas, the Ministry of Transport in Thailand has successfully deployed an innovative electronic tolling system known as M-FLOW (Multi-Lane Free Flow). M-Flow seamlessly integrates cutting-edge technologies, incorporating transponders and automatic license plate recognition (ALPR), to adeptly identify vehicles and streamline transaction processing. With an impressive throughput capacity, the M-Flow system effortlessly accommodates 2,000 – 2,500 vehicles per hour per lane, achieving speeds up to five times faster than traditional barrier-based tolling methods.

Motorists now experience a seamless traverse through toll plaza areas, eliminating the need for halting or deceleration, thereby significantly reducing delays—a long-standing challenge contributing to travel time inefficiencies. This groundbreaking system optimises toll payment processes and directly addresses a substantial component of travel time delays encountered at toll plazas.

In February 2022, the Department of Highways (DOH) achieved a significant milestone by inaugurating its first M-Flow implementation on the M9 motorway. This accomplishment involved transforming four toll plazas—Tap Chang 1, Tap Chang 2, Thanya Buri 1, and Thanya Buri 2—into a hybrid system, combining partial M-Flow tolling with conventional barrier-based tolling methods. Presently, the M-Flow system boasts 590,000 registered members and approximately 760,000 registered vehicles. The user base has witnessed a remarkable increase from 57,000 vehicle/days in the first month to 127,000 vehicles per day as of December 2023, constituting 40 percent of motorway users, with this proportion continuing to rise. Total transactions have surpassed 71 million to date.

M-FLOW has proven instrumental in reducing traffic queue lengths at toll plazas from 4 kilometres to 0.5 kilometres during peak times. Furthermore, the system's benefits evaluation demonstrates a reduction in travel time delays by over 3.3 million hours annually, a decrease in gas consumption by more than 14 million liters per year, and a notable contribution to environmental conservation—reducing carbon dioxide (CO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) emissions by 37,000 tons/year and 150 tons/year, respectively.

With these considerable benefits, the Ministry of Transport aims to extend M-FLOW implementation across the DOH' motorways and EXAT's expressways within the next five years. This will involve a hybrid system applied to currently operational motorways, including M7, and expressways such as Chalong Rat Expressway, Burapha Withi Expressway, Si Rat Expressway, Si Rat–Outer Ring Road Expressway, Chaloem Maha Nakhon Expressway, and under-construction motorways, namely M6 and M81. Additionally, fully open-road tolling systems will be implemented on the presently under construction motorway M82, and the Rama III – Dao Khanong-Outer Ring Road Expressway M82, and upcoming motorway M5 and M9 Bang Khun Tien – Bang Bua Thong. The successful implementation of M-FLOW represents a substantial leap forward in enhancing toll collection efficiency and reshaping the driving experience on Thai motorways and expressways.

## **5. LOCATION and ACCESS**

Bangkok International Trade & Exhibition Centre (BITEC)

<https://www.iche2024.com/transportation/>

## **6. REGISTRATION and FEES**

All the events are free to attend.

Each participant should register via <https://www.iche2024.com/registration/>

## **7. LANGUAGE**

Thai and English (Translation will be provided)

## **8. GETTING AROUND**

### **Welcome to Bangkok**

Bangkok is a city of vibrant colour and excitement, renowned for its bustling atmosphere with people from various nationalities. The chaotic traffic and the ever-increasing number of towering skyscrapers define its dynamic landscape. Additionally, Bangkok is replete with tourist attractions and numerous relaxing retreats, making it an exceptionally diverse capital that caters to the needs of all visitors.

The diversity of Bangkok spans across arts, culture, temples, extensive shopping centres that include major department stores, and the renowned Chatuchak Weekend Market. You can also take part in a scenic cruise along the Chao Phraya River to witness breathtaking landscapes. The city boasts a multitude of culinary delights, offering a wide range of exquisite flavours.

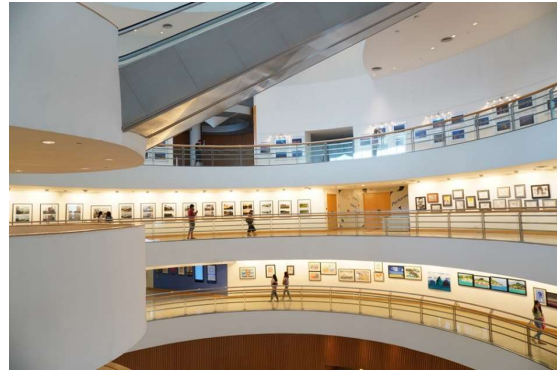
We are delighted to invite you to experience everything that Bangkok and its surrounding areas have to offer. This city is a harmonious blend of tradition and modernity, promising an unforgettable journey. Join us in September 2024 for iCHE2024, and we eagerly anticipate welcoming you to this captivating destination.



## Interesting Tourist Attractions



*The Grand Palace and The Temple of The Emerald Buddha*



*Bangkok Art and Culture Centre*



*Khon, masked dance drama in Thailand*



*Yaowarat Night Market (China town)*

## 6. ACCOMODATION



*Novotel Bangkok Suvarnabhumi Airport Hotel*



*Mii Hotel Srinakarin*

[More accommodation...](#)

## 7. CONTACT INFORMATION

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## Partners

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