



**PIARC Technical Committee 1.4:  
Planning the Resilience of Road Networks – Climate Change and Other Hazards  
Paris, France,  
Stuart Woods, New Zealand Transport Agency  
Shafiq Alam, Queensland Transport and Main Roads  
12 - 14 February 2024**

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### **Executive Summary:**

The kick-off meetings (KOM) for the 2024-2027 cycle for all Technical Committees of the World Road Association (PIARC) were held in Paris, France in January and February 2024. Stuart Woods (NZ Transport Agency) and Shafiq Alam (Queensland Department of Transport and Main Roads) attended meetings as part of Strategic Theme 1: Road Administration from 12th to 14th February; specifically participating in meetings of Technical Committee (TC) 1.4: Planning the Resilience of Road Networks – Climate Change and Other Hazards. Shafiq Alam is the appointed Chair of TC 1.4, and Stuart Woods is the appointed Technical Committee English-Speaking Secretary.

In this cycle, the TC 1.4: Planning the Resilience of Road Networks – Climate Change and Other Hazards will be addressing two issues, per the PIARC 2024-2027 Strategic Plan:

- 1.4.1: Development of All-Hazards Resilience Framework for Road Networks
- 1.4.2: Best practice in Organisational Resilience for Enhancing Road Networks

The main objectives of this meeting were to:

- Provide new members with an overview of PIARC and its operations
- Meet fellow Technical Committee members
- Present and review the Terms of Reference
- Finalise Technical Committee organisation (establish working groups, appointments, meeting schedule, seminar planning)
- Commence initial work group scoping
- Finalise Technical Committee Work Plan

The main activities of the kick-off meeting were to:

- Participate in a plenary session led by Patrick Mallejacq (PIARC Secretary General), Robin Sebille (PIARC Deputy Secretary General) and Miguel Caso Florez (PIARC Technical Director).
- Provide presentations on the activities and production of past PIARC work cycles.
- Discuss the objectives, outputs, work methods, and organization of the Work Program as proposed in the current 2024-2027 Strategic Plan.
- Establish Working Groups and assign individual members to Working Groups for each of the issues listed above.
- Appoint Working Group leaders and all committee contact positions.
- Undertake preliminary planning for subsequent meetings and Seminars.

The next TC 1.4 meeting is anticipated to be in Delft, The Netherlands in September 2024

### **Background:**

The World Road Association (PIARC) was established in 1909 as a non-profit association to promote global cooperation on road and road transport related issues. It is an international road organisation that has 127 Member National Governments. A Strategic Plan is prepared every four years, with the activities in the plan

to be delivered by a series of committees comprised of representatives from member countries. The new 2024-2027 plan is categorised into four Strategic Themes:

1. Road Administration
2. Road Mobility
3. Safety and Sustainability
4. Resilient Infrastructure

Works in the Road Administration Strategic Theme over the 2024-2027 period will be undertaken by five Technical Committees and one Task Force:

- Technical Committee 1.1 – Performance of Transport Administrations
- Technical Committee 1.2 – Contribution of Roads to Economic and Social Development
- Technical Committee 1.3 – Finance and Procurement
- Technical Committee 1.4 – Planning the Resilience of Road Networks - Climate Change and Other Hazards
- Technical Committee 1.5 – Disaster Management
- Task Force 1.1 – HDM-4

Shafiq Alam (Department of Transport and Main Roads, Queensland) is the Australian member and TC Chair and Stuart Woods (NZ Transport Agency) is the New Zealand member and English-Speaking Secretary.

### Work Program:

In this cycle, the work of TC 1.4: Planning the Resilience of Road Networks – Climate Change and Other Hazards will be addressing the following two issues as per the PIARC 2024-2027 Strategic Plan:

- 1.4.1: Development of All-Hazards Resilience Framework for Road Networks
- 1.4.2: Best practice in Organisational Resilience for Enhancing Road Networks

The purpose of Issue 1.4.1 is to develop the work undertaken in previous cycles covering resilience approaches for climate change and extend it in an updated version of the PIARC Climate Change Adaptation Framework for Road Infrastructure (2000-2023 cycle) to include all hazards and changing risk issues. It is noted that malevolent or man-made threats such as, cyber-security, cyber-physical, chemical impacts and terrorism events are outside the scope of this Committee. This work is important to road organisations because it will provide a comprehensive process to guide improvements to the resilience of road transportation assets by addressing both climatic and non-climatic hazards as a holistic approach. It will help improve service levels of all types of road organisations in the event of a hazard emergency with higher effectiveness and public confidence.

The purpose of Issue 1.4.2 is to explore and report on organisational resilience as an essential characteristic to organise, resource, promote and maintain a resilient transport system, serving users and the necessary movement of goods, services and people. The purpose of the work is to assess how resilience is understood, implemented, measured and evaluated in road organisations. This involves identification of institutional attributes such as governance structures, financing, digital and security, operations, maintenance processes, national and international (cross border) regulatory frameworks, available technical, human or natural resources, and all the interdependencies of these elements with each other that can make an organisation adaptive enough to respond to changes over time to address the climatic and non-climatic threats.

The outputs and their expected deadlines for each of the issues in TC 1.4 are described in the Strategic Plan and summarised below:

Issue	Type of deliverable/Target activity	Delivery date
<b>Working Group 1:</b> Issue 1.4.1 Development of All-Hazards Resilience Framework for Road Networks	Risk, issue and opportunity assessment	May 2024
	Finalization of study methodology	May 2024
	Setting boundary for Literature review	May 2024
	Completion of Literature review	October 2025
	Collection and review of Case studies	October 2025
	Compilation of data, information and other attributes for framework development (Roundtable/Workshop)	October 2025
	Concept Framework to be shared with the internal Stakeholders for feedback	January 2026

	Concept Framework to be presented at Chambéry Winter Congress	January 2026
	Updated Framework to be shared with PIARC GS for review	October 2026
	Finalized Framework (English version) for publication	December 2026
	Progress Report, to be shared with the TC1.4, WG 1 members and PIARC GS	Plenary meeting times (Twice each year)
<b>Working Group 2:</b>	Risk, issue and opportunity assessment	June 2024
Issue 1.4.2: Best practice in Organisational Resilience for Enhancing Road Networks	Finalization of study methodology and including possibility of case study process	June 2024
	Decision on Outsourcing option	June 2024
	Completion of initial Literature review	March 2025
	Request and collate case studies	July 2025
	Draft initial report to be shared with TC Management Team	November 2025
	Initial draft to be presented at Chambéry Winter Congress	January 2026
	Draft report to be shared with PIARC GS for review	October 2026
	Finalized report (English version) for publication	December 2026
	Progress Report, to be shared with the TC1.4, WG 2 members and PIARC GS	Plenary meeting times (Twice each year)
	General Progress Report, to be shared with the TC1.4 members and PIARC GS	Plenary meetings

TC 1.4 has formed into two Working Groups – one to address each issue as outlined in the Strategic Plan. Members expressed preferences for which of the Working Groups they wanted to contribute to, although several wished to participate and contribute to the work of both Working Groups. Stuart and Shafiq are not specifically aligned to either Working Group and will oversee and support both Groups.

Much of the discussion in the meeting on the issues/work groups was related to the clarification of some of the details of the work as described by the Strategic Plan, particularly the Issue 1.4.2 related to understanding and exploring the intent and boundaries of Organisational Resilience. There have been several follow-on meetings further exploring these matters since the KOM as part of the finalisation of the TC Work Programme.

### Meeting outputs:

The KOM provided the committee its first opportunity to meet to discuss the committee's Terms of Reference as outlined in the PIARC Strategic Plan. Additionally, an intangible output was that KOM provided members new to PIARC the opportunity to learn about PIARC and to understand their roles and responsibilities over the coming four-year cycle.

As this was the initial meeting of the TC, one of the key outputs of the meeting was to assign roles within the Committee. The roles of the Chair and language Secretaries were determined by PIARC General Secretariat prior to the meeting as follows:

Chair – Shafiq Alam (Australia)  
English Secretary – Stuart Woods (New Zealand)  
French Secretary – Marie Colin (France)  
Spanish Secretary – Juan Fernando Mendoza (Mexico)

The leaders and co-leaders for Working Group 1 were chosen as follows:

Working Group 1 Leader – Ying'en Ge (China)  
Working Group 1 Co-Leader – Christopher Gichuki (Kenya)  
Working Group 1 Co-Leader – Dmitriy Bessanov (Kazakhstan)

There were no committee members willing to accept leadership roles for Working Group 2, so in the interim a leads group with no leader was accepted as a temporary arrangement until a resolution could be reached about filling the WG roles

Working Group 2 Lead – Thomas Bles (Netherlands)  
Working Group 2 Lead – Mark Corbin (United Kingdom)

Working Group 2 Lead – Laura Parra (Spain)  
 Working Group 2 Lead – Marie Colin (France)  
 Working Group 2 Lead – Rob Kafalenos (USA)  
 Working Group 2 Lead - Philippe Sohounou (France)

The roles of contact members were allocated at the meeting as follows:

Webmaster – Christopher Gichuki (Uganda)  
 Terminology Correspondent – Ying'en Ge (China)  
 Communication Correspondent – Mark Corbin (United Kingdom)  
 Corresponding Members Coordinator – Gary Donaldson (United Kingdom)  
 Partnership Contacts – Yinghao Miao (China) and Phillippe Sohounou (France)  
 Gender Inclusion and Diversity – Sandra Urlich (Austria)

The meeting also initiated the arrangements for subsequent meetings over the cycle. Although options were raised, the table below is indicative and only Meeting 2 is confirmed so far. Provisional details of all meetings across the cycle are detailed on the table below. TC 1.4 will participate in the Chambéry Winter Congress, and it is proposed to explore holding parallel TC Meetings with other TC if opportunity arises, particularly around possible seminars. The World Road Congress will take place in Vancouver, Canada 4-8 October 2027.

Meeting/event	Date	Location
TC Meeting 2	September 2024	Delft, Netherlands
TC Meeting 3 & Seminar	February 2025	Mexico
TC Meeting 4	Late 2025	Balkans
TC Meeting 5 & Winter Congress	9-13 March 2026	Chambéry, France
TC Meeting 6 & Seminar	Late 2026	Kenya
TC Meeting 7	Early 2027	Chile
TC Meeting 8 & World Road Congress	4-8 October 2027	Vancouver, Canada

### Emerging issues:

There are three intersecting key issues that exacerbate each other, and which will need monitoring and attention:

- We have a large committee of 99 members.
- The committee is made up largely of members new to PIARC, with no experience of previous products, practices or PIARC work culture.
- The few committee members with experience of PIARC are hesitant to take up leadership or contact roles, at least in part due to the workloads involved despite being willing to assist.

This has resulted in one Working Group being led by new members from China, Kazakhstan and Kenya, and the other Working Group being lead in a loose collective arrangement. These issues at best are likely to cause slow and at times frustrated progress with high risks of outputs being missed or mis-directed.

### Learnings for Australia and New Zealand:

Participation in the Technical Committee meetings provides opportunities to share learnings to and from Australia and New Zealand. For example, the outputs of the working group reports will assist in informing Austroads members for input to AustRoads projects such as 'Incorporating Climate Change in Asset Management', or supporting and informing Enterprise Climate Risk Assessments (from Issue 1.4.2 Organisational Resilience). More generally the work being undertaken across the PIARC committee and strategic plan fulfil key strategic direction for all Austroads members with issues such as diversity, inclusion and improving our people's capabilities and conversations around gaps in the market and resource capability of our sector at a national level and continue to be at the forefront of actions to be addressed for agencies across the public sector.

Already a think piece on what is inside and outside to the concept of organisational resilience as part of overall transport system resilience has been developed and used as a focus paper to assist the development of the Issue 1.4.2 work programme and scope.

## **Dissemination:**

Participation in the committee work, the developed network of colleagues in the committee and PIARC in general provides a reciprocal benefit mechanism, which is disseminating the excellent work in New Zealand and Australia in transport system resilience to climate change throughout the committee work and PIARC in general, as well as incorporating our learnings and findings from overseas expertise and experiences into our organisations' practices through project and programme advice as well as presentation content internally and across the transport sectors with which we interface.

## **Conclusions and recommendations:**

The Kick Off Meetings set the platform for the delivery of the TC 1.4 Work Programme for the 2024-2027 cycle. Australia and New Zealand is well positioned to contribute and learn from the Natural Hazard including Climate Change Adaptation Work Programme with the issues being highly relevant to an Australasian transport agency context. There was a small number of continuing members from the previous TC 1.4 as well as a significant number of new members from a wide range of countries (several new to the committee). In the meeting there was high levels of contributions and early enthusiasm from all participants which should hold the Group in good stead for the work cycle.

### **Stuart Woods (English Speaking Secretary)**

Lead Advisor – Resilience  
New Zealand Transport Agency

### **Shafiq Alam (Chair)**

Manager, Climate Transition Engineering  
Department of Transport and Main Roads

12 April 2024





PIARC TC 1.4 Meeting Photo Day three (February 2024)



PIARC TC 1.4 Committee Dinner Day two (February 2024)