

## Executive Summary

The World Road Association (PIARC) launched a new strategic plan defining the direction for the next four years. The 2020-2023 strategic goals and the work program are organised across four Strategic themes. Kick-off meetings for all strategic themes were held in Paris during January February 2020.

Didier Bodin (Australian Road Research Board, ARRB) attended the kick-off meetings of the Technical Committee TC4.1 'Pavement' on the 12-14 February 2020. The first day, all technical committees in the strategic Theme 4 'Resilient Infrastructure' joined for the plenary sessions. Patrick Mallejacq (PIARC General Secretary), Claude Van Rooten (PIARC President) and PIARC office members presented PIARC and its mission, the new strategic plan, the organisation within the technical committees and PIARC dissemination targets.

Meeting of the *Technical committee TC4.1 'Pavement'* was held on the following days and gathered 34 delegates from 27 countries. The technical committee is chaired by Margo Briessinck (Belgium).

The *TC4.1* members discussed the objective and the tasks for the next four years. The work is structured under the five topic areas identified in the strategic plan,

- Issue 4.1.1 – Recycled road pavements
- Issue 4.1.2 – Innovative pavement maintenance and repair strategies
- Issue 4.1.3 – Road monitoring and management based on Big Data and Data Analytics
- Issue 4.1.4 – Measures for improving resilience of pavements
- Issue 4.1.5 – Carbon footprint of road pavements

This meeting was focused on administrative tasks, and organising the work for the first deliverables. The work program reveals an overarching theme of resilience. Collaboration between Technical committees is encouraged with many linkages on the topics of road infrastructure sustainability and resilience.

A literature review on '*Recycled Road Pavement*' is expected to be finalised by the end of 2020 and will be followed by a collection of case studies on the same topic mid-2021.

The next meeting of the technical committee will be in August 2020 in Chicago, US. It was proposed to have a joint meeting with TC 3.3 Asset Management.

## Background

The world road association (PIARC) aims to encourage knowledge sharing and international collaboration around roads and road transport issues. PIARC started a new work cycle in line with the [strategic plan](#) for 2020-2023. Various aspects of road transport are covered across four strategic themes:

- *Strategic Theme 1 – Road Administration*
- *Strategic Theme 2 – Mobility*
- *Strategic Theme 3 – Safety and Sustainability*
- *Strategic Theme 4 – Resilient Infrastructure (ST4)*

Activity of the strategic theme 'Resilient Infrastructure' is organised under four Technical committees:

- TC 4.1 Pavement
- TC 4.2 Bridges
- TC 4.3 Earthworks
- TC 4.4 Tunnels

This report covers the first meeting of the Technical committee TC4.1 'Pavement' which was held in Paris during the 12-14 February 2020.

Didier Bodin (ARRB) is the Australian member on TC4.1, Arthur Apostolopoulos (Department of Transport – VIC) and Richard Wix (ARRB) are corresponding members for Australia.

## Work Program

TC 4.1 is focused on sharing knowledge and promoting good practice in pavement technologies. As presented in the table below, there are many linkage opportunities with other TCs across the work program around the topics of Asset Management, Sustainability and Infrastructure Resilience. The four-year program of work and targeted deliverables are planned as follows:

Strategies / Objectives	Outputs	Date
<b>4.1.1 Recycled Road Pavements</b>		
<ul style="list-style-type: none"> <li>General description of state of the art of the existing technologies and new technologies for recycling pavements.</li> <li>Evaluate the use of these techniques in the world, separating by type of road, traffic flow, type of pavement, type of recycling, etc. taking into account the regulations and whether or not there are incentives.</li> <li>Identify successful pavement recycling projects.</li> <li>Encourage coordination with other TCs and TFs, such as T.C. 3.3 - <i>Asset management</i> and T.F. 4.1 – <i>Road Design Standards</i></li> </ul>	Literature review	Dec. 2020
	Collection of Case Studies	June 2021
	Briefing note	Sept. 2021
<b>4.1.2 Innovative Maintenance and Repair Strategies</b>		
<ul style="list-style-type: none"> <li>Identify innovative pavement maintenance and repair strategies of pavements in motorways, urban roads and rural roads.</li> <li>Pay attention to innovative mechanization or even robotics.</li> <li>Encourage coordination with other TCs and TFs, such as T.C.2.2 – <i>Accessibility and Mobility in Rural Areas</i> and T.C.3.3 – <i>Asset Management</i>.</li> </ul>	Collection of case studies	June 2022
	Briefing note	Sept. 2022
<b>4.1.3 Road Monitoring and Management Based on Big Data and Data Analytics</b>		
<ul style="list-style-type: none"> <li>Investigate the use of Big Data for monitoring the condition of roads.</li> <li>Encourage coordination with other TCs and TFs, such as TC 3.3 – <i>Asset Management</i></li> </ul>	Literature Review	Dec. 2021
	Briefing note	March 2022
<b>4.1.4 Measures for Improving Resilience of Pavement</b>		
<ul style="list-style-type: none"> <li>Identify materials and construction and maintenance techniques for enhancing the resilience of pavements.</li> <li>Encourage coordination with other TCs and TFs, such as T.C.1.4 – <i>Climate Change and Resilience of Road Network</i>, T.C. 3.2. <i>Winter Service</i>, T.C.4.3 – <i>Earthworks</i> and T.F.4.1 <i>Road Design Standards</i>.</li> </ul>	Literature review	June 2022
	Full Report	Dec. 2022
<b>4.1.5 Carbon Footprint of Road Pavements</b>		
<ul style="list-style-type: none"> <li>Collection of practice-ready tools for analyzing the carbon footprint of road pavements.</li> <li>Investigate the use of road pavements with low carbon footprint (material, construction, maintenance, reuse).</li> <li>Encourage coordination with other TCs and TFs, such as T.C. 3.4 – <i>Environmental Sustainability in Road Infrastructure and Transport</i>.</li> </ul>	Literature review	June 2022
	Full Report	Dec. 2022

Strategies / Objectives	Outputs	Date
<b>4.1.6 9<sup>th</sup> Symposium on Pavement Surface Characteristics (SURF2020)</b>		
<ul style="list-style-type: none"> <li>Organize in conjunction with a PIARC National Committee and the Secretariat General the 9th Symposium on Pavements Surface Characteristics SURF 2022.</li> <li>Prepare the technical program for the Symposium.</li> </ul>	Symposium	2022

#### **Task 4.1.1 Recycled Road Pavements**

The second deliverable due for the *Task 4.1.1 Recycled Road Pavements* is a collection of at least 12 case studies. Members are asked to prepare case study suggestions. Submission due by 15 August 2020 and a short 5 minutes presentation will be required for each case studies to be presented at the next TC meeting (26-28 August 2020).

#### **Task 4.1.4 Resilience**

A Briefing Note from *TC 1.4 'Uniform and holistic methodological approaches to Climate Change and other Hazards Resilience'* will be finalised mid-2020 and should inform TC 4.1. The TC aims to initiate the collection of case studies.

### **Meeting Outputs**

One important output of the meeting was to discuss tasks and assign roles within the TC members. Chair and secretary were appointed before the meeting as follows:

- Chair: Margo BRIESSINCK (Belgium)
- English-speaking Secretary: Gina AHLSTROM (USA)
- French-speaking Secretary: Aïda BERGAOUI SRIHA (Tunisia)
- Spanish-speaking Secretary: José del CERRO GRAU (Spain)

Margo BRIESSINCK will take the role of Webmaster.

Five Correspondents (terminology, workspace, communication, partnerships, corresponding members) were appointed:

- Terminology Correspondent: Aida Bergaoui Sriha (Tunisia)
- Partnerships Correspondent: Margo Briessinck (Belgium)
- Workspace: Margo Briessinck: (Belgium)
- Communication and Promotion: Petra Klansek (Slovenia)
- Corresponding Members: Gina Ahlstrom (US)

Appointment of TC representative for two *Special Projects*:

- '*Overweight Vehicle Impacts on Road Infrastructure and Safety*'  
Eugenia Correia (Portugal) is TC4.1 representative (Project timeline is February 2020-September 2020)
- '*Road-Related Data and How to Use Them*'  
Curt Turgeon (US) will be TC 4.1 representative

The TC also appointed editors, reviewers (quality and language), translators for the TC outputs. For this first meeting, priority was given to the 2020 deliverables:

Task	Editor in Chief	Language Reviews	Quality Reviewers
4.1.1 Recycled Pavements	Emanuele Toraldo (Italy) Didier Bodin (Aus)	EN- Curt Turgeon (US) FR- Thierry Sedran (Fr) ES- Francisco Jose (Esp) and Mario Jair (Arg)	Mario Krmek (Austria) and Pahirangan Sivapatham (Germany)
4.1.2 Innovate Pavement Maintenance and Repair	Eugenia Correia (Portugal) Nicolas Buche (Swiss)		
4.1.3 Big Data	Mehis Leigri (Estonia) and Serge Krafft (France)		
4.1.4 Resilience	Venkat Lakkavalli (Canada)		
4.1.5 Carbon Footprint	Eugenia Correia (Portugal) Ivan Drouadaine (Fr)		

Next TC meetings for the cycle are scheduled as follows:

<b>Year 2020:</b>	
Paris (France): Kick-off meeting	12-14 February 2020
Chicago (USA): TC meeting & ICMPTA (23-26 August 2020)	26-28 August 2020
<b>Year 2021:</b>	
Tunis (Tunisia): TC meeting and Workshop	Spring 2021
Buenos Aires (Argentina): Meeting and Seminar	Sept. 2021
<b>Year 2022</b>	
Calgary (Canada): TC meeting & Winter congress (8-11 Feb. 2022)	Sept. 2022
Italy: TC meeting & SURF 2022	Sept/Oct. 2022
<b>Year 2023</b>	
Kuala Lumpur (Malaysia): TC meeting & Seminar	Spring 2023
Prague (Czech Republic): TC meeting World Road Congress	2-6 October 2023

## Emerging Issues

This first meeting of the TC was primarily focused on introductory and organisational tasks, and did not bring new emerging issues to note.

## Learnings for Australia and New Zealand

The work plan for the TC4.1 is relevant to Australiasia and the Austroads Asset Program. The selected topics such as recycling, innovative road maintenance, Big Data and infrastructure resilience are well aligned with current priorities of the Pavement Task Forces and show clear linkages with the Asset Management. The expected international knowledge-sharing and collaboration around these topics are expected to be valuable.

## **Dissemination**

This report is recommended for communication to the Austroads Pavement Task Force.

## **Conclusions and Recommendations**

This first TC meeting sets the solid foundations for a fruitful and productive cycle. The Committee's objectives are clearly defined as well as the work program for the next four years.

A mix of new members and representatives from previous cycles provides an inclusive, engaging and collaborative environment. The TC had a very positive start and we can expect great outcomes from the apparent synergy between all the experts involved.

Austroads members are encouraged to propose case studies (recycling and/or resilience) which provides a great opportunity for dissemination of the Australian and New Zealand best practice or strategic directions in the field of infrastructure sustainability and resilience. This point is proposed for discussion with the Austroads Pavement Task Force.

***Dr Didier Bodin***  
***Principal Professional Leader***  
***Australian Road Research Board***  
***February 2020***