



World Road Association (PIARC)
TC 3.3: Asset Management
Hybrid Meeting, 8-10 June 2022



Executive Summary

The fifth meeting in the 2020-2023 cycle of the World Road Association (PIARC) was held in person and online from the 8th to the 10th of June 2022 in conjunction with the 11th International Conference on Managing Pavement Assets (ICMPA) held in Chicago, USA, from the 7th to the 10th of June.

Most participants joined the meeting sessions online, but around twenty members attended in person.

General news reported at the meeting included:

- An announcement of the new Executive Committee (2022 – 2024) under the new President of PIARC, Mr Nazir Alli from South Africa. One of the new Vice-Presidents is Dr Geoff Allan, the Chief Executive, Austrroads.
- Two new Taskforces have been created:
 - TF 1.3 *Well-Prepared Projects for LMIC* under the Road Administration theme
 - TF 2.1 *New Mobility and its Impact on Road Infrastructure and Transport* under the Safety and Sustainability theme.
- Upcoming Major PIARC events include:
 - SURF 2022 – 9th Symposium on Pavement Characteristics, Milan, Italy, 12-14 September 2022
 - 7th Regional Conference for Africa & PIARC International Seminar, Cape Town, South Africa, 18-20 October 2022
 - 2nd PIARC International Conference on Road Tunnel Operations and Safety, Grenada, Spain, 25-28 October 2022
 - 27th World Road Congress, Prague, Czech Republic, 2-6 October 2023



The objectives of the meeting and the key decisions to be taken included the following:

1. Technical Committee coordination and organisational matters, including the ICMPA 2022 sessions.
2. Review of timeframes and Working Groups progress on deliverables
3. Report on the joint AASHTO/PIARC Knowledge Exchange Meeting
4. Committee planning for: Working Group goals and future meetings.

Background

The World Road Association (PIARC) was established in 1909 as a non-profit association to promote global cooperation of road and road transport related issues. 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 2020-2023 plan is categorised into four Strategic Themes:

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

Works in the Safety and Sustainability Strategic Theme over the 2020-2023 period are undertaken by four Technical Committees and one Task Force:

- TC 3.1 – Road Safety
- TC 3.2 – Winter Service
- TC 3.3 – Asset Management
- TC 3.4 – Environmental Sustainability in Road Infrastructure and Transport
- TF3.1 – Road Infrastructure and Transport Security.

In previous cycles the Asset Management Technical Committee has been part of Infrastructure-related themes, but in this cycle has been placed in the Safety and Sustainability theme. The reason for this was said to be to develop a more ‘management-focussed’ approach rather than an ‘asset-focussed’ approach.

The Asset Management Technical Committee has four Working Groups (WG) addressing four issues:

- WG 1 – 3.3.1 Innovative approaches to Asset Management Systems
- WG 2 – 3.3.2 Measures for improving resilience of road network.
- WG 3 – 3.3.3 Renewal and rejuvenation of aging infrastructure.
- WG 4 – 3.3.4 Update of the Asset Management Manual.

Ulysses Ai (ARRB) is the Australian member on TC3.3 and WG1, and David Jansen (Department of Transport, Vic.) is a corresponding member of TC3.3 for Australia.

Work Program

Technical Committee 3.3 is focussed on collating the latest knowledge on emerging processes and technologies and extending products developed in the previous cycle to disseminate best-practice knowledge in the area of asset management.

One of the main activities of the latest meeting was an update on progress from each of the Working Groups on progress and outputs. The outputs, their reported progress, and the expected deadlines for each of the issues in Technical Committee 3.3 are summarised below:

3.3.1. Innovative approaches for asset management systems (WG 1)

Strategies/Objectives	Outputs	Status	Due Dates
<ul style="list-style-type: none"> • Develop a guideline for implementing Asset Management Systems in the road sector according to ISO 55001, taking in account different road organizations and at different maturity levels. • Incorporation of life-cycle management and risk management approach. • Improve and innovate managing assets approach by taking into consideration of a triple bottom line of sustainability (PPP, i.e., profit, people, planet). • Investigate the use of BIM (Building Information Model), by using a standard format, in conjunction with current AMSs used by road owners and operators. • Investigate the use of Digitalization in Asset Management. 	State of the Art review	<ul style="list-style-type: none"> • The survey to learn about state of the art approaches (ISO 55000) was released at the end of June 2021. Responses were received from over 100 respondents (although only one from Australia) 	COMPLETED
	Collection of case studies	<ul style="list-style-type: none"> • Case studies have been collated 	COMPLETED
	Webinar	<ul style="list-style-type: none"> • <i>Innovative approaches for Asset Management Systems</i> • Delivered 28 October • Well-received 	COMPLETED
	Briefing note	<ul style="list-style-type: none"> • Briefing Notes on Life Cycle management, Risk management, in progress (~65%) • Briefing Note on BIM & Digitisation completed 	April 2022 COMPLETED
	Guideline for Asset Management Systems	<ul style="list-style-type: none"> • In progress as based on above • Will propose an article for Route and Roads 	Draft September 2022

3.3.2. Measures for improving resilience of road network (WG 2)

Strategies/Objectives	Outputs	Status	Due Dates
3.3.2. Measures for improving resilience of road network (WG 2)			
<ul style="list-style-type: none"> Identify and quantify the risks and global losses associated to damages of transportation system and to establish efficient risk mitigation strategies within a holistic approach on road infrastructure. Overview of existing PIARC reports on this matter. Identify best practices and approaches of Road Asset Management measures to improve the resilience of the road infrastructure. 	Case Studies	<ul style="list-style-type: none"> Case studies are part of the materials for the Asset Management Manual 	Ongoing
	Roads/Routes articles	<ul style="list-style-type: none"> Two papers provided. See special issue on Road Resilience (N° 389, 2nd Quarter 2021 / June) 	COMPLETED
	Calgary Conference	<ul style="list-style-type: none"> 4 Papers presented at the Calgary Winter Conference 2022 in February 	COMPLETED
	Webinar	<ul style="list-style-type: none"> <i>Measures to improve resilience of road networks</i> Attendance was lower than expected, only 70 out of 297 registrations. 	COMPLETED
	Full Report	<ul style="list-style-type: none"> This working group has not been adversely affected by COVID-19 and the work plan is on track. Addressing resilience with pertinent practices and case studies Incorporation of Resilience approach in Asset Management Draft chapters expected end of July 2021, Final chapters by December 2021 	Draft June July 2022 Final November 2022

3.3.3. Renewal and rejuvenation of aging infrastructure (WG 3)

Strategies/Objectives	Outputs	Status	Due Dates
3.3.3. Renewal and rejuvenation of aging infrastructure (WG 3)			
<ul style="list-style-type: none"> Collect and disseminate information on available innovative management, design, and construction methods that can potentially accelerate the renewal and modernization of existing road infrastructure. Identify best practices and approaches of road asset management that support the renewal and modernization of aging road infrastructure, including the management of road renewal backlogs. Take in account the emerging vehicle and infrastructure technologies. 	Survey	<ul style="list-style-type: none"> Survey has been released - Currently promoting Analysis, findings and follow up to occur over remainder of 2022 	COMPLETED Q3 Q4 2022
	Case Studies	<ul style="list-style-type: none"> Interviews and case studies in progress 	Q2-Q3 2022
	Roads/Routes article	<ul style="list-style-type: none"> Articles have been finalised and issued. The articles are with PIARC for subsequent publishing 	COMPLETED
	Webinar	<ul style="list-style-type: none"> To be informed by survey results Delayed to Q4 2022 (or early 2023) 	Q3-Q4 2022
	Full Report	<ul style="list-style-type: none"> Literature review completed Case studies being incorporated Draft currently in development Final Draft expected in early 2023 	Draft Sep/Oct 2022 Final December 2022-Q1 2023

3.3.4. Update of the Asset Management Manual (WG 4)

Strategies/Objectives	Outputs	Status	Due Dates
3.3.4. Update of the Asset Management Manual (WG 4)			
<ul style="list-style-type: none"> Upgrade the content of the Road Asset Management Manual Extend the education and dissemination section of the Road Asset Management Manual 	Translation into French and Spanish	<ul style="list-style-type: none"> Translation of Manual into French and Spanish are in progress Translation of body text completed Table text and figures translation by September 2022 	October 2021 September 2022
	Upgrade content	<ul style="list-style-type: none"> Working on increasing the number of case studies. Revision of <i>Cross Asset Allocation</i>, and <i>Costs of Lifecycle Planning</i> New sections on <i>Resilience Management and Risk Management</i>, and <i>Integration of BIM approaches to TAM systems</i> 	Draft New Content March 2022
	Education and Dissemination	<ul style="list-style-type: none"> Education and Dissemination section – materials have been arranged, corrected and reformatted. Webinars and Seminars are still to be confirmed 	December 2022

ICMPA Sessions

As part of the ICMPA 2022 conference, joint sessions with Technical Committee 4.1 Pavements were presented. These sessions were part of the conference program on Days 2 and 3, and involved a total of eight presentations, three of which were from TC3.3 members.

Session	Author(s)	Paper Title
PIARC PMS Session I <i>Pavement Management</i>	Gerardo Flintsch* Margo Briessinck	Introduction to PIARC and Its Reports
	Kristina Bayraktarova Christian Honeger	Pavement Data – A Valuable Asset in the Asset Management System
	Fernando Varela*	Pavement Management Methodology on Multi-Lane Roads
	Curt Turgeon	Collection of Performance-Related Data during the Asphalt Paving Process
PIARC PMS Session II <i>Big Data and Pavement Management</i>	Gerardo Flintch*	Big Data For Pavement Management – Challenges and Opportunities
	Mehis Leigri	PIARC's Technical Committee 4.1's Literature Review on Big Data
	Tim Massart* Jacopo Alaimo	Data Collection of the Future
	Leif Sjogren	BD-Pave (Big Data Pavement Management Initiative)

* TC 3.3 Member

Meeting outputs

The meeting also discussed the arrangement of subsequent meetings and seminars over the cycle.

The Technical Committee is required to organise two seminars in low and middle income countries (as defined by the World Bank) to coincide with meetings of the Committee. One of these has been organised for late 2022, with another to be organised for early 2023.

The current meeting schedule is as follows:

Meeting Date	Location and format	Seminar/Workshop
September 15-16, 2022	Milan, Italy – following SURF 2022 conference Hybrid meeting	-
Week of October 10-15, 2022	Mexico City, Mexico Hybrid meeting	3 day Seminar on Building Information Systems (BIM) covering the themes of: <ul style="list-style-type: none">• Conceptual Framework• Digital twins for infrastructure assets• Implementation strategies Day 4 Technical visit to Mexican Institute of Transport
First half of 2023	TBC, options include: <ul style="list-style-type: none">• Colombia• Ghana• Senegal	Seminar topic TBC
2-6 October 2023	Prague, Czech Republic – 27 th World Road Congress	-

Emerging issues

No major issues have emerged from these meetings so far. The impact of Covid-19 on the TC's operation has been minimal given the ready access to online meeting platforms.

Learnings for Australia

The work program for this committee parallels efforts within Australia and by Austroads specifically to improve high-level guidance on best practice in asset management, to maintain an understanding of how new approaches can continue to be incorporated, and to consider questions of risk and resilience in light of climate change.

Progress in the areas of BIM and digitisation for Transport infrastructure should be noted as this is an area of emerging development for Australia.

Dissemination

Upcoming Webinars:

- Late 2022 – *Renewal and Rejuvenation of Aging Infrastructure* (to be accompanied by a survey)
- Early 2023 – *Asset Management Manual*

Upcoming Articles in Routes/Roads:

- Gerardo Flintsch, Pascal Rossigny – Editorial
- Gerardo Flintsch, Matt Haubrich, Katie Zimmerman – *Recent Advances in Asset Management in the US and the Recently Published AASHTO Manual*

- Darko Kokot – *CODEC Project: a Successful Implementation of BIM principles within the European Highway Industry (Freeing and Enriching Data Flow to and from Asset Management Systems)*
- Ricardo Solorio Murillo – *Implications of the Network Level Approach for Various Asset Management Processes*
- Mario D'Apuzzo – Case Study (Details TBC)
- Two other articles planned by Committee Members

Benefits from other associated activities

Meetings of the Technical Committee will endeavour to coincide with other events. Those currently being planned for include:

- The 9th Symposium of Pavement Surface Characteristics (SURF 2022) to be held in Milano, Ital September 12-14, 2022.
- The World Road Congress will take place in Prague, in the Northern Autumn of 2023.

Conclusions and recommendations

The meeting provided an update on the progress in this cycle of a diverse and relevant work program that will be of value to Australian road agencies and departments of transport. There appeared to be a keenness to discuss and collaborate on shared issues through the work program, with a growing number of members from additional countries quick to offer their assistance and experience to all members.

As the cycle progresses there will be further opportunities for knowledge exchange with committee members who are experts in areas of value to Australia.

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