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## **Executive Summary**

Work on the World Road Association (PIARC) 2016–2019 strategic plan is underway, and technical committees (TC) have met for the fifth time.

Michael Moffatt (Australian Road Research Board, ARRB) attended the fifth meeting for TC D.2 during 4–6 May 2018 in Brisbane, Australia. The meeting was well attended, with 16 committee members present. The meeting was immediately preceded by the 8<sup>th</sup> International Symposium on Pavement Surface Characteristics (SURF2018). Held in Australia for the first time, SURF2018 was a great success with 150 delegates from 20 countries. The organisation of the symposium was one of the key work items for the TC.

Austroads hosted a dinner for TC members at a local Brisbane restaurant.

Work is well advanced in accordance with the following three topic areas identified in the PIARC strategic plan, with reports on track for release at the 26<sup>th</sup> Abu Dhabi (October 2018):

- Issue D.2.1 – Green paving solutions and sustainable pavement materials
- Issue D.2.2 – Low-cost pavement systems
- Issue D.2.3 – Non-destructive pavement monitoring and testing techniques

It is believed that the planned work program has solid links to Austroads activities and projects and is of current relevance to Austroads members (e.g. non-destructive pavement monitoring). Work on green paving solutions is becoming more relevant to Austroads members.

The expressed desire of committee members to share experiences, including those outside the scope of the planned works presents significant additional opportunities to Austroads members.

The next meeting of the technical committee will be in October 2018 in Durban, South Africa. As well as the technical meeting, the TC members will also be jointly hosting a multi-day international seminar.

## **Background**

The World Road Association 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 WRA member countries. Michael Moffatt (ARRB) is the Australian/New Zealand member on TCD.2, and Cassandra Simpson (VicRoads) is a corresponding member.

## **Work Program**

In accordance with the PIARC 2016–2019 strategic plan, TC D.2 is concluding studies into green paving solutions and materials, low-cost pavements (with a focus on developing countries and countries in transition) and with the rapidly developing technology surrounding road condition monitoring. In addition, the TC was charged with organising the 8<sup>th</sup> International Symposium on Pavement Surface Characteristics (SURF2018) in 2018.

## 2016 – 2019 PIARC Strategic Plan for Road Pavements

Strategies	Outputs
<b>Issue D.2.1 – Green paving solutions and sustainable pavement materials</b>	
Investigate the challenges and incentives used in different countries to encourage the use of methods and materials that minimise the use of natural resources, reduce energy consumption and emissions, and improve safety (recycling, low temperature mixes/warm mix asphalt, new binders/aggregates).	State of practice report and recommendations on the use of green solutions, challenges faced, and incentives implemented to encourage use by member countries.
<b>Issue D.2.2 – Low cost pavement systems</b>	
Evaluate available technologies and practices for better sustainability and management of pavements.	Report on best practices that can be applied in all countries, with special consideration of low and middle-income countries.
<b>Issue D.2.3 – Non-destructive pavement monitoring and testing techniques</b>	
Review use of technology such as laser, image processing and others in pavement monitoring and evaluation techniques.	Hold symposium SURF 2018 and produce state of the art report on road condition monitoring and road/vehicle interaction.

The committee has formed three working groups to address the three issues. Michael Moffatt is a member of working groups D.2.1 and D.2.3 and is also the co-leader of working group D.2.3.

### **Issue D.2.1 – Green paving solutions and sustainable pavement materials (WG Chair: Gina Ahlstrom, USA)**

The working group is preparing a state-of-the-art report documenting best practices, new and emerging technologies and challenges for green pavement technologies. The report is planned to include consideration of the following phases:

- Pavement design
- Materials selection
- Construction
- Use phase & maintenance (with links to work of TC E2)
- End of Life

Online structuring and the preparation of the table of contents has been completed, and a questionnaire to identify successful techniques and incentives has been prepared and completed for some countries.

Some draft sections of the report have been prepared, but progress is significantly behind the planned schedule. The previous TC meeting, held in Mexico, was poorly attended, and little progress has been made since the March 2017 meeting.

A separate report documenting the state-of-the-art and assessment of the current level and incentives for green (pavement) public procurement is being planned. A draft is planned for late 2018. The report is expected to include recommendations, case studies and reference works.

### **Issue D.2.2 – Low cost pavement systems (WG Chair: Cheolwoo Park, South Korea)**

Progress for this working group was hampered by the very low attendance of members. The group are planning a report documenting low cost pavement systems, and, in line with the strategic plan, are primarily focussed on low and middle-income countries.

### **Issue D.2.3 – Non-destructive pavement monitoring and testing techniques (WG Chair: Margo Briessinck, Belgium)**

During the previous work cycle (2012-2015) the TC had produced a [state of the art report on road condition monitoring](#). Work in the current cycle is building upon this previous work and will address new and emerging techniques and new case studies. The WG formulated a table of contents for the new report. Significant additions will be:

- An increased focus on road/vehicle interaction, including portable friction testers and winter friction testing, rolling resistance assessment and analysis and the OBSI method for noise assessment.
- Expanded structural assessment material, including more detailed discussion of traffic speed deflection measurement systems and light weight deflection testers.
- Equipment used as reference devices in quality assurance of road condition monitoring equipment.

The preparation of the document is on schedule. Work continued during the TC meeting, and peer-reviewers and translators for the final document were agreed.

A significant component of the workgroup's previews activities had been in planning the 8<sup>th</sup> International Symposium of Pavement Surface Characterises (SURF2018). Organised by the Australian Road Research Board, SURF2018 took place at the Brisbane Convention Centre on 2-4 May 2018.

With Vehicle to Road Connectivity as the central theme of the Symposium, discussions focused on how improvements can be made to the quality of road infrastructure through effective management of road infrastructure assets in accordance with user expectations and managers' requests. The symposium presenters, delegates, as well as local motorsport legends Allan Moffat and Peter Boylan, discussed five key areas:

- Smart surfaces
- Vehicle-road interaction
- Data collection with a purpose
- Safer road performance
- Sustainable and recyclable wearing courses

### **Meeting and Seminar Timetable**

The next meeting of the technical committee will be in October 2018 in Durban, South Africa. In addition to the meeting, TC members will also be jointly hosting a multi-day African regional seminar. The program for the seminar was discussed at the meeting, and a preliminary seminar program was agreed.

It was also agreed that the following meeting will take place in Belgium in early 2019.

### **Meeting Outputs**

The most significant output of the meeting was the delivery of the 8<sup>th</sup> International Symposium of Pavement Surface Characteristics. Significant progress was made on two reports (*Green paving solutions and sustainable pavement materials* and *non-destructive pavement monitoring and testing techniques*). In addition, the scope of the October 2018 region seminar to be held in Durban was agreed.

### **Emerging Issues**

Progress in two work areas is behind schedule. A significant amount of work must be undertaken by committee members prior to the October 2018 meeting.

### **Learnings for Australia and/or New Zealand**

The work program for the committee has strong potential links to recent, current and future Austroads work. Recent Austroads work in harmonising road condition monitoring processes, and data reporting is of direct relevance to the works of the committee. The examination of procurement of green pavement technologies ought to provide input into policies and processes for Austroads members. Given the focus on procurement hurdles and incentives it is hoped that this work will be adaptable for encouraging other innovative practices beyond the specific green pavement topic.

## Dissemination

Regular updates are provided to Austroads members three times a year to the Austroads Pavements Task Force and the Pavement Structures Working Group. However, the TC D.2 work program does have elements of interest to the wider Austroads Assets Program.

The successful 8<sup>th</sup> Symposium on Pavement Surface Characteristics in Brisbane presented an excellent opportunity for additional information exchange between Austroads members and the PIARC TC.

## Benefits from Associated Activities

Beyond the work program, a strong presence on the technical committee presents the opportunity for issues beyond the work program to be raised and discussed. Informal conversations with committee members all highlighted common challenges, but also a firm desire to learn from the experience of others. Committee members' assistance has been sought for some issues raised by Austroads member organisations and similarly members have assisted other countries by providing information or contact to Australasian expertise.

## Conclusions and Recommendations

Much of the work of the technical committee will be of interest to member agencies. Additionally, the communication between technical experts with a wide range of experiences presents an opportunity for seeking advice on subjects outside the work program.

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