REAAA Newsletter

REAAA Newsletter 2025-2
Published on 1 April 2026
For Members Only

REAAA President Handover Ceremony

Table of Contents

Table of Contents

Publisher

The Road Engineering Association of Asia & Australia
46 B, Jalan Bola Tampar 13/14, Section 13, Shah Alam,
Selangor, Malaysia

REAAA Governing Council: 2025 - 2029

Office Bearers

President
Mr. Richard Jen-Chuen Moh
Taiwan

Immediate Past President
Dr. Sung Hwan Kim
Korea

Past President
Hon. Romeo Salazar Momo
Philippines

Vice President
Dr. Richard Yeo
National Transport Research Organisation
Australia

Vice President
Dr. Ir. Roy Rizali Anwar ST, MT
Ministry of Public Works Republic of Indonesia

Vice President
Mr. Hirotsugu Doi
Japan Road Association

Vice President
Dato' Sri Ir. Roslan Bin Ismail
Public Works Department of Malaysia

Honorary Secretary-General
Ir. Mohd Shahrom Bin Ahmad Saman

Honorary Treasurer-General
Ms. Lydwina Marchiela Wardhani

COUNCIL MEMBERS

Australian Chapter
Dr. Michael Moffatt

Public Works Department, Brunei
Ir. Norazmi Othman

Express Highway Research Foundation of Japan
Mr. Toru Suzuki

Korea Expressway Corporation
Mr. Cho, Nam-Min

Road Engineering Association of Malaysia (REAM)
Ir. Atikah binti Zakaria @ Ya

REAAA New Zealand Chapter
Mr. Simon John Hunt

REAAA Brunei Chapter
Ir. Mat Darus Abu Bakar

Indonesian Road Development Association (IRDA)
Dr. Ir. Hedy Rahadian

REAAA Philippines Chapter
Mr. Willy T Go

Land Transport Authority (LTA), Singapore
Mr. Alvin Chia

REAAA Korean Chapter
Mr. Jong Gon Park

Malaysian Highway Authority (MHA)
Dato' Ir. Sazali bin Harun

Roads Association of Thailand (RaTH)
Dr. Montri Dechasakulsom

New Zealand Transport Agency (NZTA)
Ms. Rochelle Leach

Road Engineering Association of the Philippines (REAP)
Mr. Ronnie Vicente Lagnada

China Road Federation,(CRF). Taiwan
Mr. Chen Wen-Jue

Moh & Associates, Taiwan (MAA)
Dr. Jaw-Chang Laiw

CO-OPTED COUNCIL MEMBERS

Mr. Kieran Sharp, Australia

Dr. James Grenfall NTRO, Australia

Mr. Johan Ariffin PT .Adhi Persada Beton, Indonesia

Ir. Heddy Rohandi Agah Indonesian Road Development Association (IRDA)

Dr. Koji Kuroda Japan

Dr. Keizo Kamiya Japan

Mr. Lee Woo-Je Ministry of Land, Infrastructure and Transport (MOLIT)

Mr. Moon-Kyu Choi Hanshin Engineering & Construction Co. Ltd

Dr. Kyu-Young Hwang Kunhwa Engineering & Consulting Co., Ltd

Dato' Ir. Dr. Dennis Ganendra, Minconsult, Malaysia

Prof. Dr. Wong Shaw Voon, Malaysia

Prof. Madya Ts. Dr. Siti Zaharah binti Ishak
Malaysian Institute of Road Safety Research (MIROS)

Assoassoc. Lt. Col.(CD), Ir. Ts. Dr. Muhammad Marizwan bin Hj Abdul Manan, Malaysia

Mr. Kuo Cheng-Chang
Freeway Bureau, Ministry of Transportation and Communications, Taiwan

Prof. Jia-Ruey Chang
National Ilan University, Taiwan

Message from the President

Richard Moh
18th Term President

Towards a New Chapter of Innovation, Fellowship, and Enduring Collaboration

Dear REAAA Members and Colleagues,

I am honored to address you for the first time as President of REAAA. I would like to express my sincere appreciation to our colleagues in Korea for successfully hosting the 17th REAAA Conference last October. It was a major effort, and we are grateful for their dedication.

Since assuming office, I have seen many members contributing actively for the advancement of our shared mission. At the same time, I would like to emphasize that holding a position in REAAA comes with responsibility. I encourage all members to stay engaged, be responsive, and focus on the bigger picture rather than individual roles.

Over more than fifty years, REAAA has built a strong foundation for road engineering across Asia-Pacific. Our founders and early members worked under very different conditions, but with a clear sense of commitment. Their spirit was practical and forward-looking, grounded in the fundamentals established during the post-war reconstruction era.

Today, despite the rapid changes driven by digital technologies, AI, and climate challenges, these fundamentals remain relevant. REAAA's continued success lies in its unique combination of professional friendship, diversity, and technical collaboration. To move forward, we must maintain these values while ensuring that our actions are aligned with the long-term development of the profession.

REAAA brings together members from different countries, cultures, professional backgrounds, and generations. The diversity is one of our greatest strengths. Different perspectives challenge us to think differently, improve our understanding and strengthen professional exchange. To make this effective, participation must be active, open, and constructive.

We are now in what I would call an Age of Transformation. Our direction is guided by capacity sustainability, supported by flexibility, adaptability, and collaborative efforts. In this regard, we are focusing on three main areas:

- Enhancing the TCs, including the formal establishment of six TCs
- Revitalizing YEP under a new framework
- Revisiting and involving REAAA policies and procedures to improve effectiveness

Since October, we have not stopped our efforts. We have held a series of meetings, including Steering Committee sessions for strategic planning, as well as regular engagements with the Technical Committees, the YEP, and the Secretariat to ensure alignment and progress. Key outcomes include the reactivation of the Technical Committees, progress on the REAAA Journal, and the strengthening of the YEP platform. The Council Meeting format has also been adjusted to allow more time for discussion, planning, and active member participation.

Our goal is to strengthen REAAA's unique role when working with other international organization. At the same time, we are preparing key deliverables for the coming four years, including technical

compendiums, newsletter, journals, state-of-the-art reports in road engineering, YEP exchange programs, and the REAAA 50th Anniversary publication.

This newsletter also reflects our progress. I would like to thank all contributors for their efforts. The inclusion of technical papers and expanded content adds value and strengthens knowledge sharing within the Association.

From 21st to 24th April 2026, we will convene the 126th REAAA Council Meeting in Taipei. The program will include Technical Seminars and TC meetings aligned with industry trends, a technical visit to the Tamkang Bridge, and YEP activities to support the next generation of engineers. More importantly, this meeting will provide time for discussion and coordination, which are essential for our future development.

Looking ahead, the next four years will require clear work plans, defined schedules, and efficient coordination across all levels of the Association. With alignment and active participation, we can ensure steady progress toward our shared goals.

I would like to express my sincere appreciation to our VPs, TC leaders, YEP leaders, the Secretariat, CRF, and CRF Council Members for their continuous contributions and hard work.

Finally, I would like to welcome all of you to Taiwan, the Beautiful Island of Formosa, and look forward to meeting you in Taipei.

Richard Moh

18th Term President

REAAA 50th Anniversary: The Journey Continues

Foreword

As we commemorate the 50th Anniversary of the Road Engineering Association of Asia & Australasia (REAAA), we celebrate this golden jubilee by reflecting on a half-century of progress achieved through regional partnership.

The inception of REAAA was rooted in the visionary leadership of its founding members, whose initiative established a robust foundation for regional cooperation in road engineering and transportation. Taiwan, as one of the founding members, shares this historical connection and continues to play an active role in international exchanges while demonstrating its longstanding commitment to the REAAA family.

As part of this commemorative feature, the China Road Federation (CRF) is pleased to present reflections from two distinguished leaders: former CRF Presidents Mr. Shih-Yi Chen and Dr. Chia-Juch Chang. Their accounts trace Taiwan's evolution from an early participant to a mature strategic partner, highlighting a legacy of professional dedication and international contribution.

This feature goes beyond merely documenting a fifty-year journey; it serves as a bridge between "Legacy and Vision." We hope this retrospective highlights the vital role of infrastructure in promoting regional prosperity and inspires the next generation of engineers to carry forward the REAAA spirit, joining hands as we embark on the next fifty years.

China Road Federation (CRF)

The China Road Federation (CRF), established in 1961, is a professional, non-profit organization dedicated to the development of road infrastructure and transportation systems. Originating from collaboration with the International Road Federation (IRF), CRF has been actively engaged in international cooperation and became a member of REAAA in 1973.

For over 60 years, CRF has played a key role in advancing Taiwan's road engineering through knowledge exchange, professional development, and project implementation. These efforts have contributed to the development of a comprehensive national road network incorporating safety, sustainability, and intelligent transportation systems.

CRF also serves as an important platform for international engagement, supporting technical collaboration and promoting Taiwan's participation in global transportation initiatives.

Taiwan's Role in REAAA

Taiwan has been actively involved in the REAAA since its early years. A key figure in its foundation was Dr. Za-Chieh Moh, Co-founder of REAAA, who also served as Honorary Treasurer General from 1978 to 2000, making him one of the longest-serving officers in the organization's history. His dedication helped strengthen Taiwan's engagement with the regional engineering community and contributed to the growth of REAAA during its formative years.

Taiwan's engagement in REAAA has also been reflected in its leadership within the Association. Mr. Arthur Chen was elected the 8th President of REAAA, further demonstrating Taiwan's active role in supporting the organization's development.

Over the years, Taiwan has hosted major REAAA events, including the 3rd REAAA Conference in 1981 and the 8th REAAA Conference in 1995, both held in Taipei. Taiwan has also hosted a number of REAAA Council Meetings, including the 21st, 92nd, and 110th sessions, and will welcome delegates again for the 126th Council Meeting from 21–24 April 2026. Looking ahead, Taiwan is also scheduled to host the 18th REAAA Conference in 2029.

Currently, Mr. Richard Moh currently serves as REAAA President for the 2025–2029 term, reflecting Taiwan's continued commitment to the Association. Taiwan's long-term participation highlights its role in promoting professional exchange and regional cooperation.

The 1st REAAA Conference, Bangkok, Thailand, 1973

The 3rd REAAA Conference, Taipei, Taiwan, 1981

The 3rd REAAA Conference, Taipei, Taiwan, 1981

110th REAAA Council Meeting, Taipei, Taiwan, 2019

110th REAAA Council Meeting, Taipei, Taiwan, 2019

Interview 1: Former CRF President, Mr. Shih-Yi Chen

Mr. Shih-Yi Chen, President of the CRF (1999–2003), is a senior transportation official who has dedicated over 40 years to Taiwan's highway development. He served as Deputy Director General of the Taipei DORTS, Director General of the Taiwan Provincial Highway Bureau (1990–1997), and Deputy Minister (first appointed in 1997 and reappointed in 1999) and Acting Minister of the Ministry of Transportation and Communications (MOTC, March-May 2000). He played a key role in advancing major infrastructure, including National Freeway No. 3 and the development of an integrated north–south freeway and east–west expressway network, significantly improving national mobility and logistics efficiency. His contributions also include early development of Taipei MRT systems, implementation of computerized traffic control, and oversight of major projects such as the Hsuehshan Tunnel.

Dr. Za-Chieh Moh's Visionary Leadership

Reflecting on REAAA's origins, Mr. Chen pays tribute to the foresight of Dr. Za-Chieh Moh. At a time when Asia lacked a unified regional body, Dr. Moh leveraged his academic prestige and extensive network to rally nations together. This platform not only facilitated regional growth but also established strategic links with the IRF and PIARC, opening a crucial window for Taiwan to engage in global dialogue.

From Aid Recipient to Localized Innovation

Mr. Chen recalls the post-WWII era when Taiwan's roads were often rudimentary cobblestone paths. In the 1960s, through IRF scholarships, Taiwan sent talented engineers to the United States to acquire advanced knowledge. These experts returned to become the backbone of the "Ten Major Construction Projects," fueling the nation's modernization during the global oil crisis.

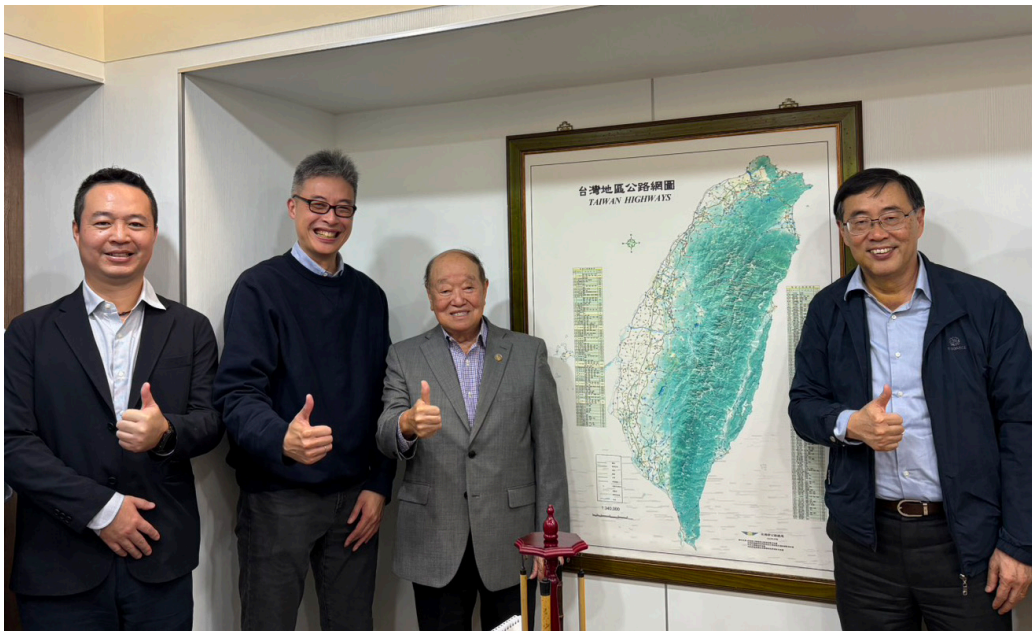
However, technology transfer was about adaptation, not just adoption. Citing the Taipei MRT as an example, Mr. Chen recalls insisting on station restrooms despite foreign consultants' objections. This decision exemplifies the Taiwan engineering community's ability to refine international standards to meet local cultural and user needs.

Expectations for the Next Generation

Mr. Chen encourages young engineers to "go global" to prevent their vision from becoming isolated. He envisions REAAA deepening its ties with ITS societies and other international bodies. In the coming years, he sees Taiwan leading REAAA exchanges in engineering digitalization and AI applications, continuing to drive regional innovation.

Mr. Shih-Yi Chen (left) and Dr. Za-Chieh Moh (right) at the 10th REAAA Conference, Tokyo, 2000

Mr. Shih-Yi Chen



From left to right: Mr. Yuan-Sheng Lin, Mr. Richard Moh, Mr. Shih-Yi Chen, and Dr. Jaw-Chang Laiw

Interview 2: REAAA Honorary Member, Dr. Chia-Juch Chang

Dr. Chia-Juch Chang, President of the CRF (2007–2011) and REAAA Honorary Member (2013), is a transportation engineer, policymaker, and industry leader. He served as Director General of the Institute of Transportation (1987–1995), Administrative Deputy Minister of the Ministry of Transportation and Communications (MOTC, 1995-2005), and Minister of Economic Affairs (2013–2014), and later held leadership positions at China Steel and China Airlines. He contributed to major infrastructure development, including the Taiwan High-Speed Rail (HSR), National Freeways No.3 and No.5, and the early implementation of electronic toll collection (ETC), playing a key role in advancing Taiwan's modern transportation system.

A Half-Century Journey of Participation

Dr. Chang categorizes Taiwan's engagement with REAAA into distinct phases. In the 1960s and 1970s, Taiwan relied on international loans and technical aid to build its first freeways. By the 1980s, the focus shifted toward a booming domestic market. Today, as Taiwan's infrastructure has reached full maturity, its contribution has evolved into "Soft Power"—sharing expertise in transport services and management as a "contributor" rather than a "learner."

Governance, From Chaos to Order

Dr. Chang describes Taiwan's transport evolution as a journey "unlicensed private buses to a modern freeway transportation system". In the early years, surging demand led to the proliferation of unlicensed private transit. Dr. Chang was personally involved in the challenging process of legalizing these services and establishing modern regulatory frameworks. These hard-won lessons in transitioning from chaos to order provide a valuable blueprint for developing economies today.

Sharing the Responsibility, The Spirit of Mutual Aid

"Having benefited from REAAA in the past, Taiwan now has a duty to give back," Dr. Chang asserts. He champions the spirit of "We share the responsibility," inviting fellow members to co-develop frameworks tailored to their unique environments. This vision ensures that the core values REAAA has upheld for 50 years remain vibrant and sustainable.

Dr. Chia-Juch Chang (left) and REAAA Vice President (right) at the 92nd REAAA Council Meeting, Taipei, Taiwan, 2011

Dr. Chia-Juch Chang

From left to right:Mr. Yuan-Sheng Lin, Dr. Chia-Juch Chang, Mr. Richard Moh, and Dr. Jaw-Chang Laiw

Epilogue: Paving the Way Ahead

Taiwan's journey in transportation development is a compelling narrative of transformation, evolving from an "aid recipient" to a global "contributor." What began as rudimentary paths in the post-WWII era matured through the 1960s into the "Taiwan Model"—a cornerstone of Taiwan's national progress.

In terms of governance, Taiwan has witnessed a parallel advancement, progressing from an era of unregulated transit into a sophisticated freeway network underpinned by seamless technological integration. As Taiwan's domestic infrastructure reaches full maturity, Taiwan stands ready to champion the spirit of "We share the responsibility." Through the REAAA platform, Taiwan aspires to export its expertise in digital engineering, AI-driven solutions, and low-carbon, sustainable smart transportation systems.

Looking ahead, Taiwan will continue to serve as a pivotal bridge for technology and governance—transforming fifty years of resilience and accumulated wisdom into a synergistic force that propels transportation progress across the Asia-Australasia region for the next century.

Interviewed and prepared by Chia-Ren Liu, Moh and Associates, Inc., Taiwan

Development of New Test Method Applying Pore Water Pressure for Evaluating Interlayer Bonding Properties of Asphalt Pavement[1]

Hiroki Takebayashi
Nippon Expressway Research Institute Co. Ltd, Japan[2]

Shigeki Takahashi
Nippon Expressway Research Institute Co. Ltd, Japan

Koki Bamba
Nichireki Co. Ltd, Japan

Toshiyuki Chikamatsu
Nichireki Co. Ltd, Japan

Introduction

The total length of expressway network managed by the three NEXCO companies in Japan (East Nippon Expressway, Central Nippon Expressway, and West Nippon Expressway Company Limited) exceeded 9,000 km in 2019; approximately 5 million vehicles use the network daily. Many of the Japanese expressways were constructed during the period of Japan's rapid economic growth and they are now aging. More specifically, by 2020, approximately 4,700 km and 700 km of the network have been in service for over 30 years and 50 years, respectively (see Figure 1).

It has been observed that damage to expressway pavements is occurring in the deeper layers underneath the surface course, necessitating repair to bit the surface course and upper basecourse.

No detailed surveys of the condition of expressway pavements had been performed until 2012. Since then, however, nationwide surveys involving cutting the pavement for examination have been performed (NEXCO RI 2019; Takahashi 2017).

[1] This paper received a Katahira Award for the best paper at the 16th REAAA Conference, Manila, Philippines, in March 2021.
[2] h.takebayashi.aa@ri-nexco.co.jp.

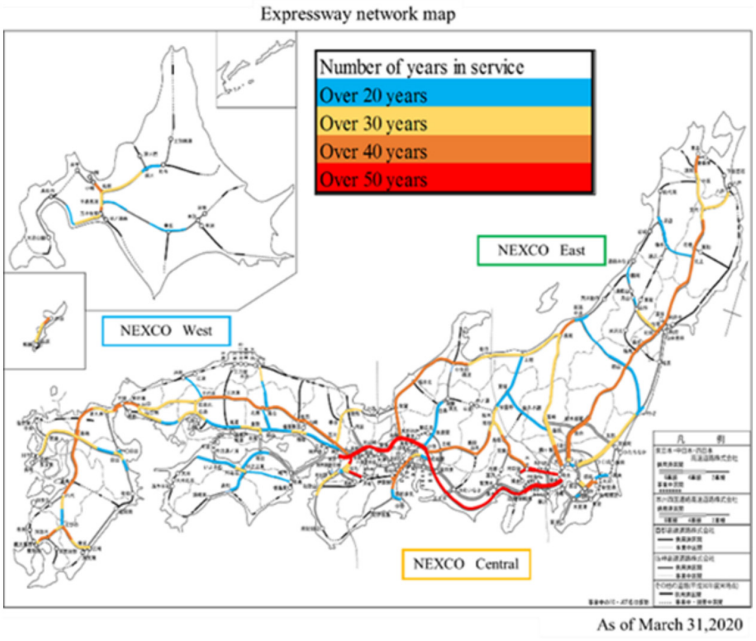


Figure 1: Japanese expressway network and number of years in service

In the surveys, the pavement was cut, by a drum cutter, into blocks for use as test specimens. As shown in Figure 2, the section of the block taken from a damaged area of pavement showed delamination between layers and very small horizontal cracks running in the horizontal direction between the binder course and upper basecourse. These cracks were only observed in the wheelpaths (see Figure 3).

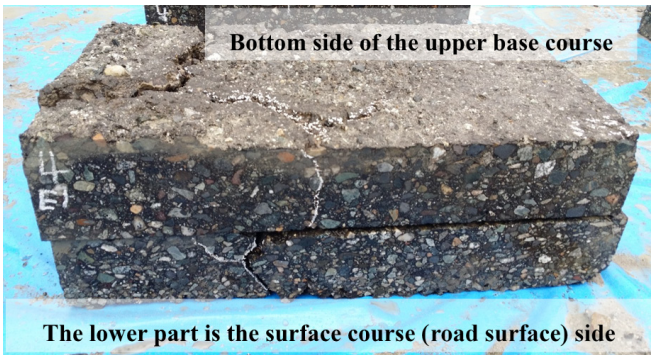


Figure 2: Block of pavement separated into two (upper and lower) layers

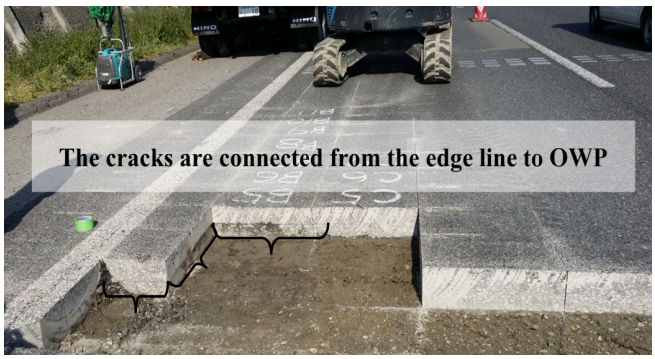


Figure 3: Horizontal cracks developed between binder course and upper basecourse

In addition, where an area of a pavement having alligator cracks was cut out, some horizontal cracks were observed between the binder course and the upper basecourse in the wheelpath, despite the fact that no repair work had been performed there.

Figure 4 shows where the survey was conducted at a site where it had rained the day before. Although a dry cutter was used, it was observed that rainwater had penetrated into the pavement through the cracks which had developed vertically along the boundary between a lane line and the pavement. The water was then spreading along the interface between the binder course and upper basecourse.

Figure 4: Rainwater penetrated into pavement through a crack

In terms of the directions of the crack formation on the cross-section of the pavement where a wide crack extending in the vertical direction developed on the road surface (see Figure 5), it was observed that the crack initiated at the road surface and, soon after running through the first and second layers, horizontal cracks developed between the second and third layers. The (wide) crack then extended through the third layer and cracking developed between the third and fourth layers.

The field surveys showed that seepage water, when pressurized by traffic loads, can crack the interlayers of the asphalt pavement over decades.

A conventional method used to bond the interlayers is to apply a tack coat. To test the bonding strength, tests are carried out, such as the tensile or shear test, to evaluate the bonding strength. However, these tests do not consider the effect of water which was observed in the field. Therefore, a new test was developed which repeatedly applies pore water pressure between the layers of the asphalt mix.

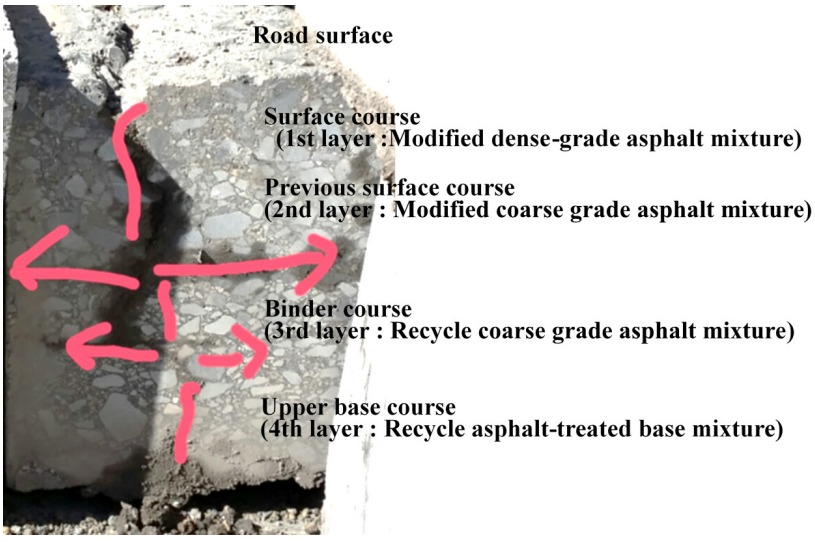


Figure 5: Progression of crack formation and horizontal cracks

Evaluation of Adhesiveness of Tack Coats Between Interlayers)

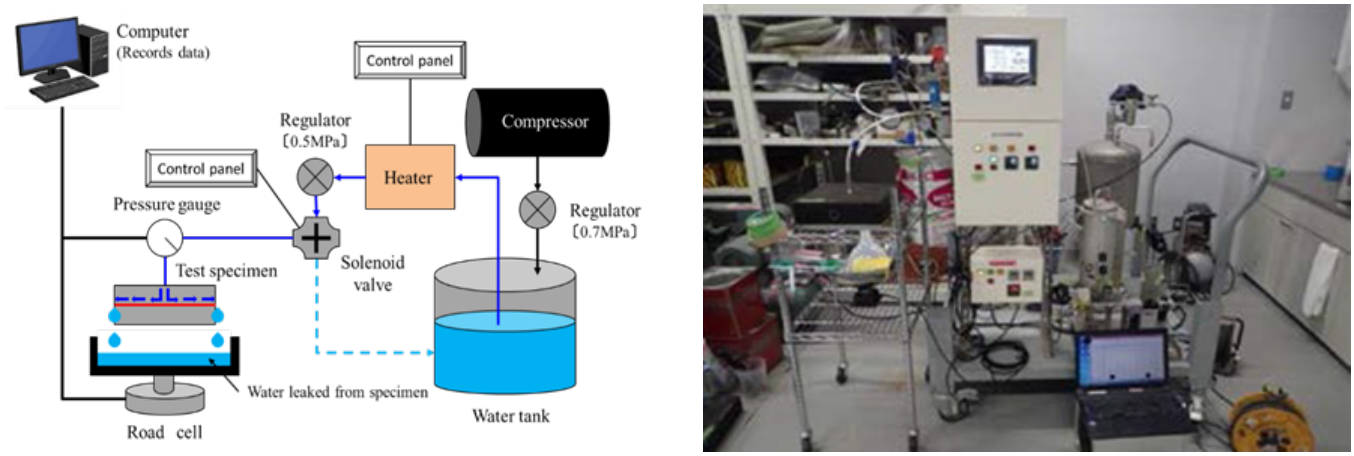
Overview

As a way of evaluating the adhesiveness of tack coats between asphalt interlayers, a test that applies loads to the mix, such as the tensile adhesion test or shear test, is often used (e.g. see Al-Qadi et al. 2012; McDaniel, Shah & Lee 2018; Bahia et al. 2019). However, in the case of a mix containing a binder with a low softening point, if the test temperature is high, a cohesive failure of the mix itself may occur, especially during the summer. It is therefore difficult to assume that the tack coat's adhesive strength has been properly evaluated. Taking this into consideration, test equipment and methods that repeatedly apply water pressure between the layers of asphalt mixes and reproduce the adhesion to evaluate the adhesiveness of the tack coat applied between the interlayers were developed. The test, hereinafter, is referred to as the 'Repeated Pore Pressure for Interlayer' test.

Repeated Pore Pressure for Interlayer Test

Overview of testing apparatus

A conceptual diagram and eternal view of the test apparatus is shown in Figure 6. The apparatus was designed to generate pore-water pressure by intermittently injecting pressurized water between the layers of test specimens by opening and closing a solenoid valve.



(a) Conceptual diagram (b) External view

Figure 6: Conceptual diagram and external view of new test apparatus

The main parts of this test apparatus are as follows.

- Compressor for applying pressure to water stored in the tank.
- Tank that stores water for applying water pressure to the specimen.
- Regulator for regulating the pressure in the water tank.
- Heater for adjusting water temperature.
- Regulator for adjusting the water pressure applied to the specimen.
- Solenoid valve for switching the supply of water to repeatedly apply pressure to the specimen.

- Test specimen.
- load cell for measuring the amount of water leaked from the specimen
- pressure gauge for measuring the water pressure applied to the specimen
- control panel for controlling each device and a computer for storing data.

The specification for the test equipment is shown in Table 1.

Table 1: Specification for test equipment

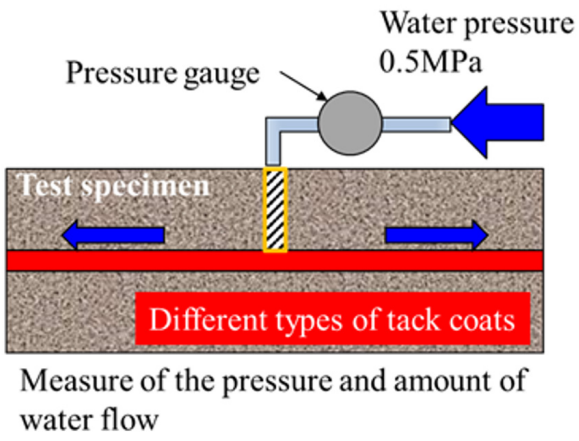
Item	Specification
Water pressure	0 – 0.6 MPa
Water tank capacity	30 L
Water temperature	23 – 60°C
Range of leaked water measurement	0.001 – 10 kg

The test procedure is as follows:

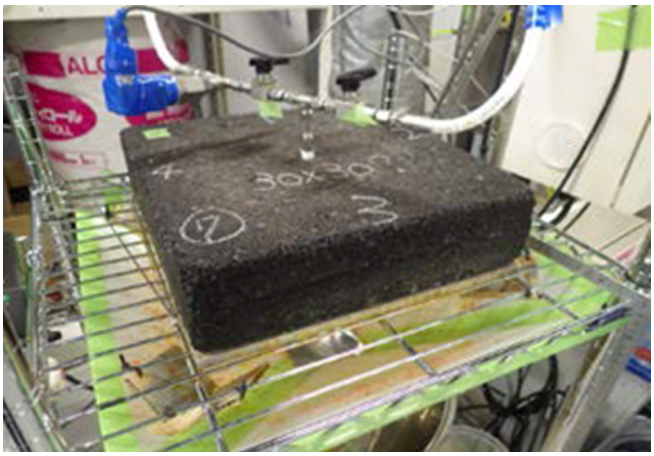
1) Set the specimen in place.
2) Put water in the water tank and use the regulator to adjust the pressure (0.7 MPa) in the tank so that it is higher than the pressure applied to the specimen.
3) Turn on the various control panels and set test conditions (water pressure, pressurization cycle, etc.).
4) Turn on the operation switch of the solenoid valve control panel and start the test.
5) Check if the data recorded by the measurement software looks appropriate.

During the test, the computer that records the data logs the time, the number of pressure cycles, the volume of water leakage, and the measured values of the pressure applied to the specimen.

The conceptual diagram of the test specimens and the state of the test specimen placed in the equipment is shown in Figure 7. The test intermittently injects water into the interface of the asphalt layers, which causes a breakage of the adhesion between them; eventually the water leaks out from a side surface of the test specimen. For the test, a solution that emits light when irradiated with black light was added to the water to make its flow path more visible.



Conceptual diagram



State of test specimen placed

Figure 7: Set up of test specimens

Specimen preparation

The test specimen was prepared as follows:

- A water pipe (inner diameter: 15 mm) for water injection was installed at the center of a block of asphalt (hereinafter, referred to as the 'mixture'),which was 300 mm long x 300 mm wide x 40 mm thick. This was the upper layer.
- Before stacking the upper layer mixture on top of the lower layer, various types of tack coats were applied.
- A 40 mm thick block was laid as the lower layer.

Note that, to make sure that both the upper and lower layers maintained a high water-tightness, NEXCO's mixture for the surface course used in snowy regions (finer-graded dense-graded asphalt) was used.

As the binder of the mixture – a modified asphalt for very heavy loads used in port applications (hereinafter referred to as 'super heavy load type'), a type of SBS base binder – was used. The test was initially carried out using commonly-employed modified asphalt. However, this mix significantly deformed during testing, as shown in Figure 8.

Since it was thought that the adhesive strength of the interlayers could not be properly evaluated if such deformation occurred, it was decided to use the super heavy load type of mix. The specifications for the super heavy load type binder is shown in Table 2.

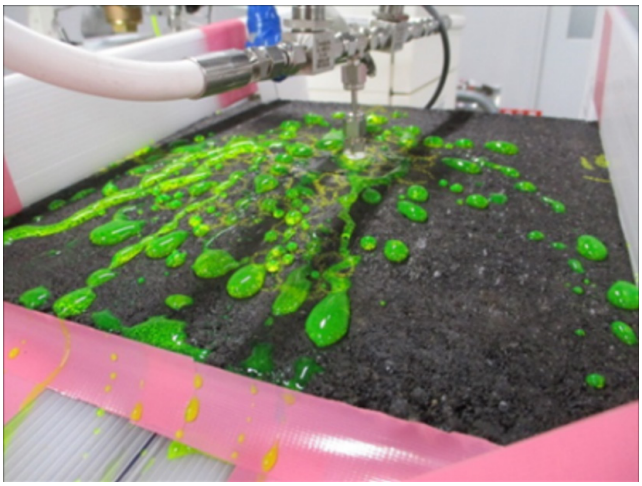


Figure 8: Deformation of test specimen (modified Type II binder)

Table 2: Specification for super heavy binder used in testing

Test item	Super heavy load type	Test item
Penetration (25°C)	1/10 mm	Penetration (25°C)
Softening point	°C	Softening point
Ductility (15°C)	cm	Ductility (15°C)
Flash point	°C	Flash point
Rate of thin-film mass change by heating	%	Rate of thin-film mass change by heating
Residual penetration ratio after heating the thin film	%	Residual penetration ratio after heating the thin film
Toughness (25°C)	N · m	Toughness (25°C)
Tenacity (25°C)	N · m	Tenacity (25°C)
Fraas breaking point	°C	Fraas breaking point
Stripped area ratio of coarse aggregate	%	Stripped area ratio of coarse aggregate
G*/sin δ	kPa	1.5 or more

Interlayer adhesive to be evaluated

The different types of tack coats used as adhesives between the layers, and the amount of each tack coat applied, are shown in Table 3. Three types of tack coats, namely PK-4, SBS modified asphalt emulsion (PKM-T), and a quick-breaking type of SBS modified asphalt emulsion (PKM-T-Q) were selected for the test. The test was performed using four different scenarios, more specifically, three cases with these tack coats and one case with no tack coat application.

In general, the standard amount of PK-4 and PKM-T applied is 0.4 L/m2 and this application rate was used in the testing. PKM-T-Q has the same basic properties as PKM-T (Japan Road Association 2019). In addition, a feature of PKM-T-Q is that the construction time is short. For the PTM-T, an application rate of 0.8 L/m2 was adopted for the purpose of reducing the penetration of water from surface ponds and surfaces where porous asphalt is used as the surface course. In this situation, PKM-T-Q is considered to have advantages over other tack coats.

Table 3: Type of tack coat and application rates

Type	Application rate (L/m2)
Plain	0 (no tack coat)
PK-4	0.4
PKM-T	0.4
PKM-T-Q	0.8

Test conditions

The test conditions are shown in Table 4. The water pressure was set to 0.5 MPa with reference to the conditions of the Water Resistance test II. The value of 0.5 MPa is based on the tyre mounting pressure of heavy vehicles (Japan Road Association 2007). The pressure application cycle was set to 1 cycle/second; and the loading time was set to 0.3 seconds, the shortest possible time the tester can provide 0.5 MPa based on its performance capability, and 0.7 seconds with no pressure application mechanically.

Table 4: Test conditions

Item	Specification
Water temperature	23°C
Pressure	0.5 MPa
Pressure application cycle	1.0 seconds (0.3 seconds with pressure application →0.7 seconds, reset time interval without pressure application)

Method of evaluation

As a method for evaluating the interlayer adhesiveness, the tensile adhesion test, or shear test, are methods used to evaluate the adhesion of a specimen after testing. However, if the layers are broken, the adhesive strength of the interlayers will be lost and these tests cannot be performed. Therefore, the following three methods were used in the evaluation:

- the relationship between the number of repetitions and the amount of water
- the relationship between the number of repetitions and the pore water pressure
- the presence, or absence, of flow paths in the test specimen.

In this test, it is possible to measure the amount of water flow – induced by the number of times pore water pressure is applied – from the test specimen layers. The relationship between the number of repetitions and the amount of water flowing from the interface between the test specimen layers (hereinafter, referred to as the 'amount of water flow') is shown in Figure 9a.

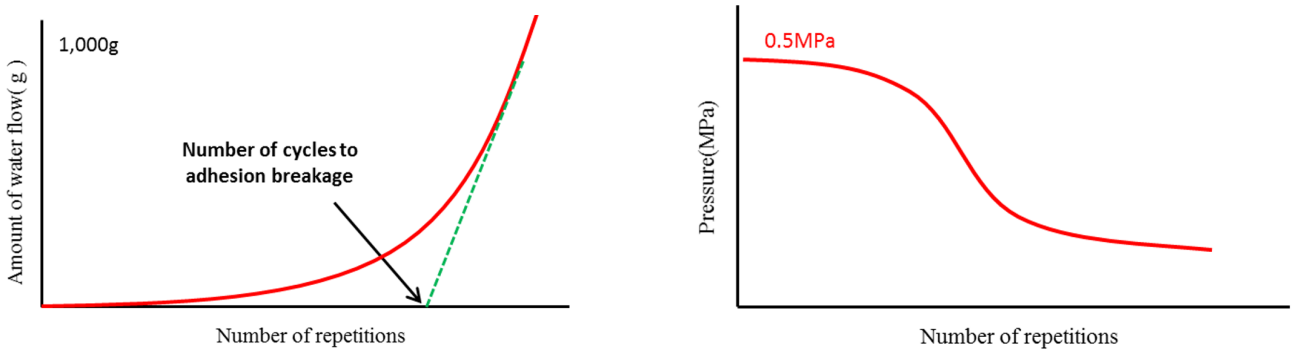
The test commences when there is no water leaking from the layer, then water starts to leak from the layer and gradually increases. The leaking eventually develops into a large flow of water. In the preliminary confirmation testing, when the water flow rate from the layers reached 1,000 g, a large amount of water was flowing due to the lack of adhesive force.

The point where a tangent line on the graph at the point where the amount of water flow reached 1,000 g intersects with the axis of the horizontal line (abscissas) (Figure 9a) was defined as the 'number of cycles to adhesion breakage'. Resistance to the breaking of the adhesion between the interlayers was evaluated based on the differences in the number of cycles to adhesion breakage.

Pore water pressures at different elapsed times were also measured. The relationship between the number of repetitions and pore pressure is shown in Figure 9b.

When the interlayers are completely adhered, the pressure does not decrease because there is no way for the pressure to escape. However, when water begins to flow between the layers, a pressure escape is created and the pressure drops. When water begins to leak outside the specimen, the pressure drops significantly.

Whether this pore pressure could be used as an evaluation item was examined, and whether the level of adhesiveness could be evaluated by the presence, or absence, of flow paths in the test specimen, i.e. whether the interlayers split after the test was completed, was also examined.



(a) amount of water flow (b) pore water pressure

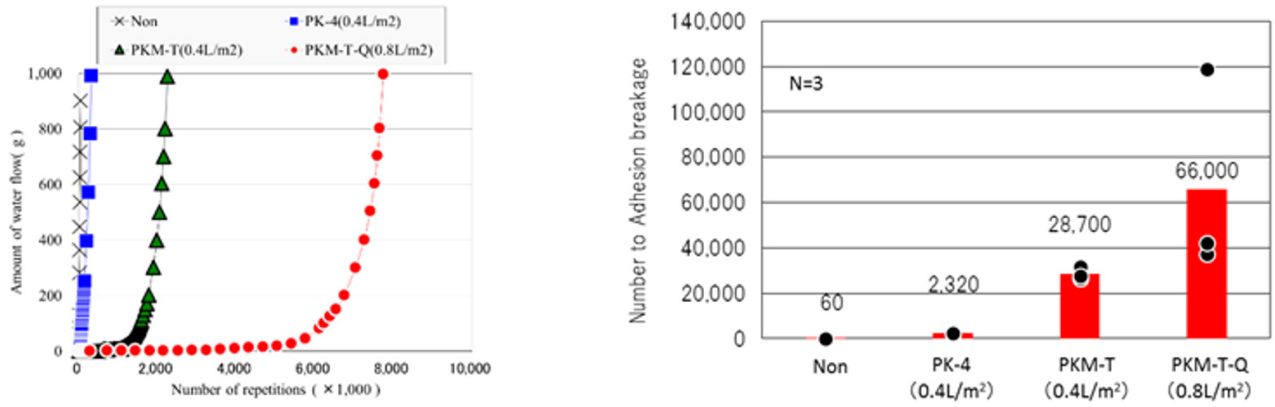
Figure 9: Relationship between number of repetitions and amount of water and pore water pressure

Results

Relationships between Number of Repetitions and Amount of Water Flow

An example of the relationship between the number of repetitions and the amount of water flow obtained in the tests with different materials is shown in Figure 10a. In the case of no tack coat and PK-4, water leakage started from the layers within 30 minutes of applying pressure, and the amount of water flow increased sharply after water leakage began. On the other hand, with PKM-T and PKM-T-Q, except for some specimens, water leakage from the layers commenced when the load was applied tens of thousands of times or more, and then water flow increased sharply.

The number of cycles required for adhesion breakage was the smallest in the case of no tack coat application, followed by PK-4 and PKM-T. PKM-T-Q took the longest number of repetitions (Figure 10b). PKM-T and PKM-T-Q have high adhesive strengths, and in the current tensile adhesion test, they aggregate fractures in the mixture. As a result, the interlayer adhesive strength of the tack coat cannot be evaluated (Hiraoka, Iitaka & Sawa 2018). By using this test equipment and method, it was possible to confirm the differences in the levels of adhesiveness depending on the type of tack coat.



(a) amount of water flow (b) pore water pressure

Figure 10: Relationship between the number of repetitions and:
(a) amount of water flow, (b) adhesion breakage

Relationship Between Number of Repetitions and Pore Water Pressure

An example of the relationship between the number of repetitions and pore water pressure is shown in Figure 11. The number of repetitions until the pressure started to drop was shorter in the no tack coat application, PK-4, PKM-T, and PKM-T-Q.

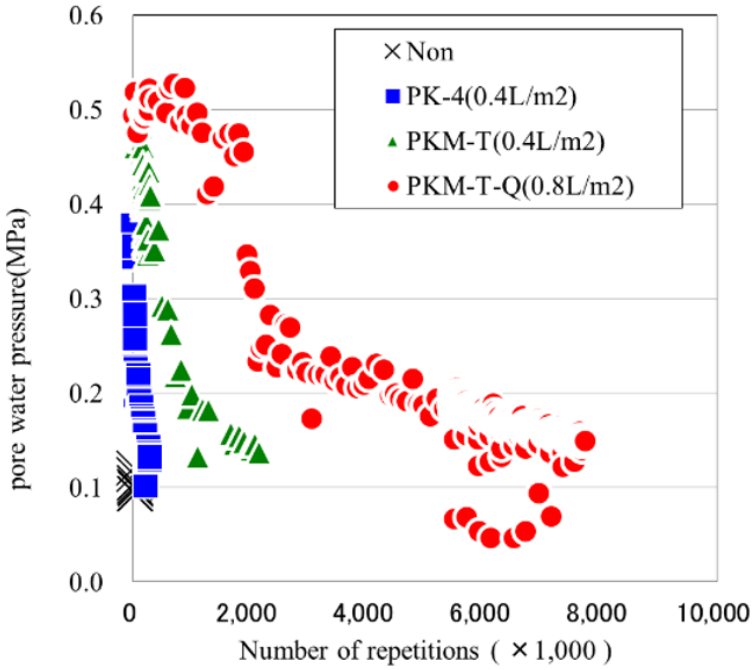
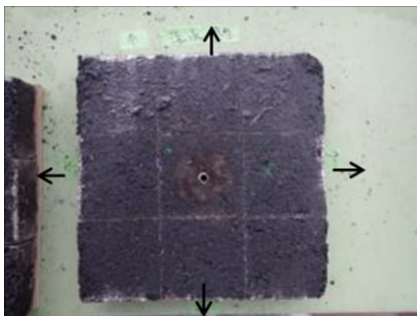


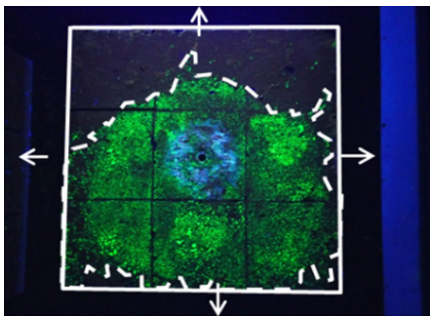
Figure 11: Relationship between number of repetitions and pore pressure

Confirmation of Flow Path Results

The flow path results were confirmed by splitting the specimen between interlayers after the completion of the test. Figure 12 shows a situation where the split surface is irradiated with black light. There were some tests when the flow path of the water to the edge of the specimen could not be confirmed, even though the water was flowing out from the side of it. This indicates that the test water that passed through the layers passed through the inside of the mixture instead of between the layers, resulting in water leakage from the side of the specimen.



(a) After splitting



(b) During black-light irradiation

Figure 12: Results from review of water flow path (PK-4; 0.4 L/m^2)

Conclusions

This paper has described new test equipment and a test method which reproduces adhesion breakage caused by water in the field. The adhesiveness of the tack coat used between the construction layers has been evaluated using this equipment and test method. Different results were obtained depending on the type of tack coat used. It was difficult to evaluate the difference in adhesion by confirming the flow path after the test. However, from the number of cycles to adhesion breakage obtained from the relationship between the amount of water flow and test time, it was confirmed that the adhesive strength of interlayers differs due to differences in the materials.

Plans are in place to improve the test method to reduce inconsistencies in the results. The next step will be to determine the optimal material and amount of application under different test conditions, including temperature and the degree of surface roughness of the mixes on which the tack coat is applied.

An effective way to extend the life of asphalt pavements is to increase the interlayer adhesive strength (Chabot et al. 2016; Molenaar 2016; Partl 2016). Work will continue to try to define what properties are needed to obtain a sufficient adhesive strength of interlayers and to develop an optimal method which takes this into consideration.

References

Al-Qadi, IL, Hasiba, KI, Salinas Cortina, A, Ozer, H, Leng, Z, Parish, D & Worsfold, S 2012, 'Best practices for implementation of tack coat', Civil Engineering Studies, Illinois Center for Transportation Series, No. 12-004.

Bahia. H, Sufian, A, Swiertz, D, Mohammad, L & Akentuna, M 2019, 'Investigation of tack coat materials tracking performance', Wisconsin Highway Research Program, No. 0092-17-06.

Chabot, A, Buttlar, WG & Eshan V, Petiti, D & C & Tebaldi, G 2016, '8th RILEM International Conference on Mechanisms of Cracking and Debonding in pavements', RILEM Book Series, Springer.

Hiraoka, T, Iitaka, H & Sawa, T 2018, 'Performance and construction examples of emulsified asphalt of quick braking type with the ability to suppress tire adhesion', Emulsified asphalt for road work & others, No. 205.

Japan Road Association 2007, 'Bridge deck slab waterproofing handbook' (in Japanese).

Japan Road Association 2019, 'Handbook of pavement investigation and examination method' (in Japanese).

McDaniel, RS, Shah, A & Lee, J 2018, 'Tack coat installation performance guidelines', Joint Transportation Research Program Publication, No. FHWA/IN/JTRP-2018/18.

Molenaar, AAA 2016, 'Cracking the past, the present and the future: a never ending story', Keynote lecture to 8th RILEM International Conference on Mechanisms of Cracking and Debonding in pavements, Nantes, France.

NEXCO RI 2019, 'How to create long-life pavements' (in Japanese).

Partl, MN 2016, 'Detection of debonding phenomena in asphalt pavement and on concrete bridge decks', Keynote Lecture to 8th RILEM International Conference on Mechanisms of Cracking and Debonding in pavements, Nantes, France.

Takahashi, S 2017, ' Field survey project to identify the important key factors for long term durability of asphalt pavement on the expressways in Japan.' Proceedings 7th European Asphalt Technology Association (EATA) Conference, Switzerland.

Reshaping Urban Mobility: The Evolution of AI-Driven Traffic Signal Control in New Taipei City

Ming-Shi Zhong
Transportation Department, New Taipei City Government[1]

Introduction: The Challenge of the Ring City

As urbanization accelerates globally, traffic congestion remains one of the most intractable challenges in modern city governance. New Taipei City (NTPC), the densely-populated municipality that encircles Taipei City, faces unique pressure. It serves as a massive residential hub with heavy cross-district commuting flows. It also hosts popular tourist destinations that generate unpredictable surges in holiday traffic. Traditional 'fixed-time' traffic signals can no longer cope with these complex and highly volatile patterns. To address this, the New Taipei City Transportation Department has aggressively adopted Intelligent Transportation Systems (ITS) since 2018, launching the 'Dynamic Signal Control Plan for Transportation Corridors'. This article analyzes how NTPC utilizes AI and big data to reshape the city's traffic pulse through strategic evolution, technological application, and tangible outcomes.

Strategic Evolution: From Commuter Corridors to Comprehensive Coverage

The development the strategy for traffic signal control on the transportation corridors in New Taipei City is shown in Figure 1.

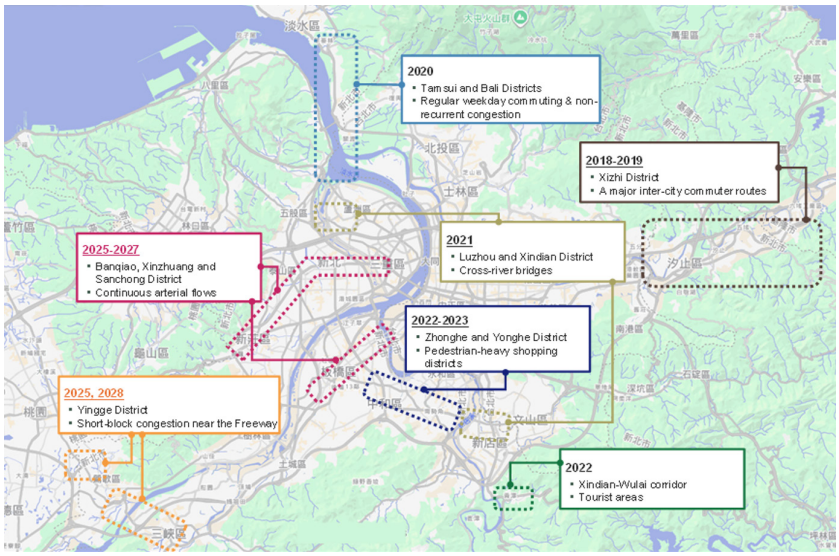


Figure 1: Development strategy for traffic signal control on transportation corridors in New Taipei City

[1] an5591@ntpc.taipei.gov.tw.

A review of the developmental trajectory from 2018 to 2024 revealed that NTPC's signal control strategy had undergone a clear evolution of objectives. What began as a targeted solution for specific corridors has evolved into a comprehensive governance model:

- Phase 1 (2018-2019): The initiative initially focused on Xizhi District, a key corridor connecting the port city of Keelung to the Greater Taipei area. The primary goal was to mitigate congestion on major inter-city commuter routes.
- Phase 2 (2020): With maturing data capabilities, the scope expanded to the Tamsui and Bali districts, coastal areas famous for tourism. This marked a strategic shift from managing regular weekday commuting to alleviating irregular, non-recurrent congestion caused by holiday tourists.
- Phase 3 (2021-2024): The focus widened further to include cross-river bridges (critical bottlenecks in the region), mountainous roads in Xindian-Wulai corridor, and pedestrian-heavy shopping districts in Banqiao. This evolution demonstrates that dynamic signal control is no longer just about vehicle speed; it now encompasses tourism support and 'people-oriented' safety needs.

Core Technologies: Three Pillars of Context-Aware Control

NTPC's success stems from moving beyond a monolithic 'one-size-fits-all' philosophy to a context-aware framework. As illustrated in the architecture diagram shown in Figure 2, three distinct control strategies are deployed, each tailored to specific road geometries and traffic characteristics.

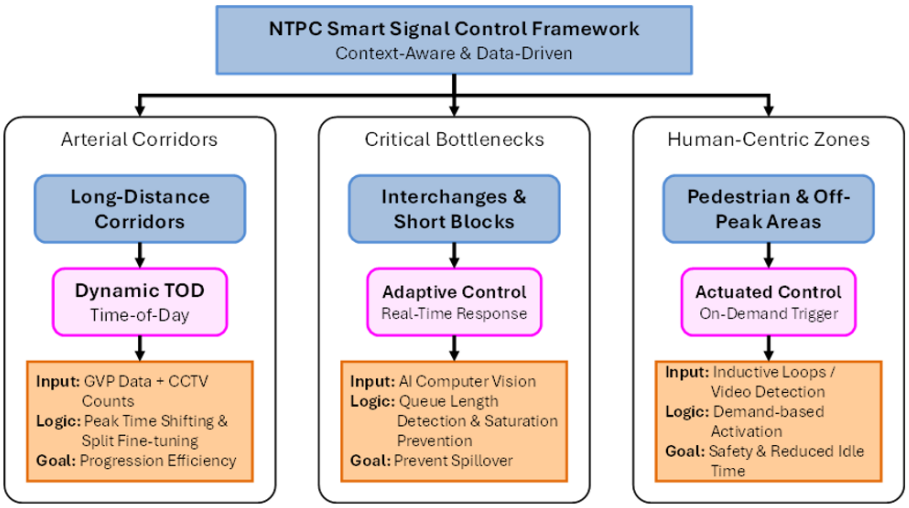


Figure 2: NTPC smart signal control framework

Arterial Corridors: Dynamic TOD (Time of Day)

Designed for long-distance arteries such as the New Taipei Boulevard, this strategy focuses on 'temporal flexibility'. By integrating GPS-based Vehicle Probe (GVP) data with real-time CCTV traffic counts, the system monitors travel speeds to detect traffic patterns. Unlike rigid schedules, it dynamically identifies if peak hours are shifting (e.g. starting earlier) and switches timing plans accordingly. Furthermore, within specific time blocks, it fine-tunes the 'split' (green time allocation) based on the volume ratio between that on the main road and that on side streets, maximizing progression efficiency and minimizing arterial delay.

Critical Bottlenecks: Adaptive Control

For areas with explosive and unpredictable flows – such as freeway interchanges (e.g. Yingge) or short city blocks – static parameters are often obsolete. Here, the system employs AI-powered computer vision to detect 'queue length' in real-time. The control logic centers on saturation management: if a queue approaches a critical threshold that threatens to spill over into upstream intersections, the system immediately extends the green time for that direction in the next cycle. This rapid response mechanism effectively prevents gridlock chains before they form.

Human-Centric Zones: Actuated Control

Prioritizing safety and efficiency in pedestrian-heavy areas such as the Banqiao District, this strategy utilizes inductive loops or video detection to implement 'on-demand' control. During off-peak hours, the signal allocates green time to side streets or crosswalks only when vehicles or pedestrians are physically detected. This approach secures safe crossing environments for pedestrians while ensuring that main road traffic is not disrupted by empty signal phases, balancing safety with operational efficiency.

Tangible Outcomes: Governance Value Behind the Data

Statistical analysis from 2018 to 2023 highlights significant quantitative benefits and economic impact. Across various projects, average delay was reduced by 4% to 44%, while travel time improved by 1% to 75%. Operational visibility plays a crucial role in sustaining these figures; for example, the Traffic Control Center dashboard for the Xindian-Wulai corridor (as shown in Figure 3) visualizes the adaptive control logic in action. By monitoring real-time queue lengths and signal adjustments along this mountainous tourist route, the system ensures optimal flow even under constrained road conditions.

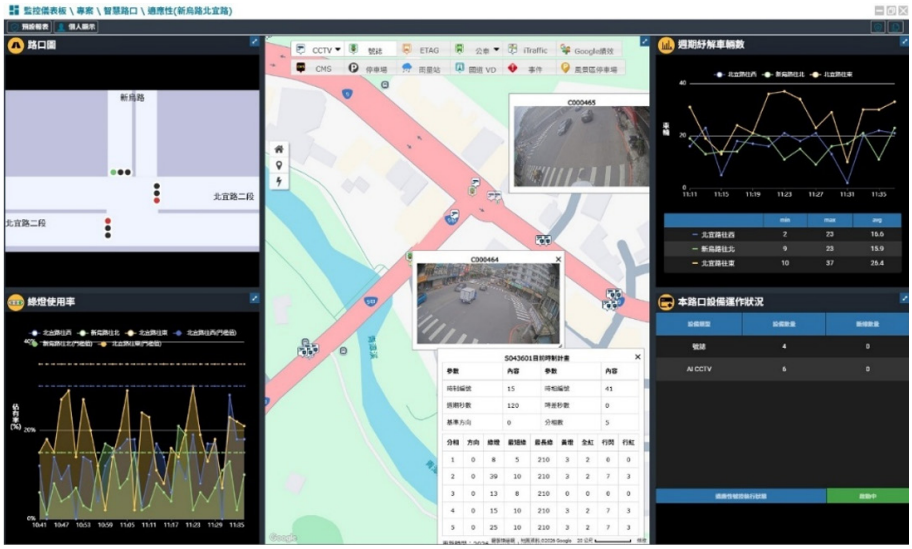


Figure 3: Adaptive Control Dashboard of Xindian-Wulai Corridor

The most striking result occurred in 2020 in the Tamsui and Bali tourist zones, where travel times dropped by up to 75% during peak holiday seasons. This generated an estimated annual economic benefit of approximately 16.8 million NTD[2](monetized value of time saved), proving the immense potential of dynamic control in managing leisure traffic surges.

Future Outlook: Precision Deployment in 2026

As shown in Figure 4, the current traffic landscape presents two distinct challenges that NTPC aims to resolve in the 2026 expansion. The imagery highlights the heavy, and sustained, congestion along the extensive New Taipei Boulevard corridor (connecting Xinzhuang and Sanchong) in contrast with the severe vehicle backlog and spillover within the short blocks of the Yingge ceramic district. To address these bottlenecks, the plan applies the proven success models described earlier. 'Dynamic TOD' will be utilized to optimize the continuous arterial flows along the long corridor, while 'Adaptive Control' will be applied to prevent gridlock near the Freeway No. 2 Yingge Interchange.

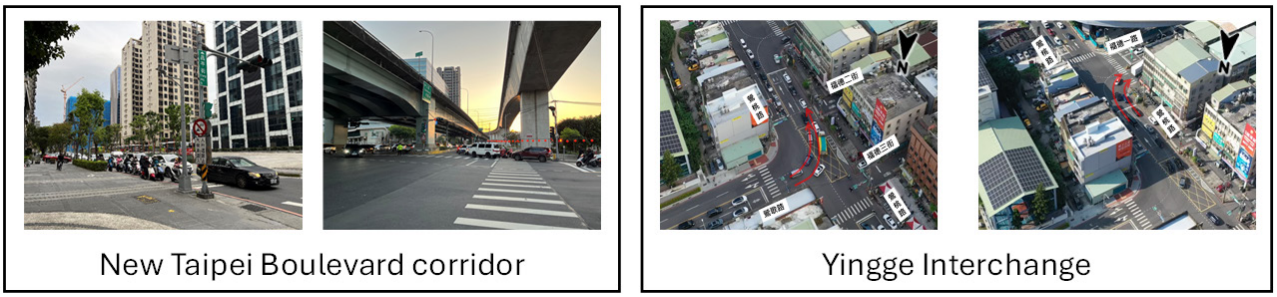


Figure 4: Current traffic bottlenecks showing sustained congestion on the New Taipei Boulevard corridor and acute spillover in the Yingge short-block district

Conclusion

New Taipei City's dynamic signal control on transportation corridors has evolved from simple timing adjustments to a multi-faceted smart management mode integrating e-Tag sensors, AI-based CCTV, and GPS-Based Vehicle Probe (GVP) data. This represents more than a technological upgrade; it is a transformation in governance mindset – shifting from passive reaction to active 'dancing' with real-time data, ensuring that limited road resources deliver maximum efficiency.

[2] New Taiwan dollar. 16.8 million NTD ≈ USD530,000.

A New Strategic Solution for Road Marking Asset Management

Dr. Auckpath Sawangsuriya
Roads Association of Thailand

Thammavich Boonrak
Asia Testing Equipment Co. Ltd

Overview

The RetroTek-D Mobile Retroreflectometer Unit (MRU), developed by Reflective Measurement Systems Ltd, is designed to provide a comprehensive solution for road-marking condition asset management. It is the only third-generation MRU capable of surveying all lane markings, including longitudinal edges, centerlines, and in-lane markings / symbols , in a single pass day or night. The system is ideal for road agencies and road marking contractors seeking to maintain safer roads through accurate night-time visibility measurements.

RetroTek-D

Features of the Retro Tek-D

Operational Efficiency and Safety

In terms of operational efficiency and safety, the main features are as follows.

- **One Pass survey:** all road markings across a full lane width in one pass are measured, eliminating the need for multiple runs.

- **Traffic safety:** surveys are conducted at all normal traffic speeds without requiring lane closures or specialized traffic management.
- **Vehicle design:** the unit is securely fitted to the front of the vehicle with no protrusions from the side, ensuring safe operation in traffic & motorcycles.
- **Operator focus:** the system is designed to allow the operator to focus on the road ahead & driving rather than monitoring in-vehicle displays for precision lane positioning to cover a line.

Key Technical Capabilities

The key technical capabilities are as follows.

- Continuously measures retroreflectivity (R_L) and day contrast (weber) ratios for all markings within the field of view.
- Automatically detects line types (single- skip/continuous & double lines) and colour (white or yellow).
- Automatically records the presence or absence of RPMs.
- High-speed performance: operates at speeds up to 120 km/h with no minimum speed requirement.
- Features a wide measuring field of view width of approximately 4.88 m.

Technical Specifications

System Overview

- Device category: third generation mobile retroreflectometer unit (MRU)
- Primary function: measures night-time visibility (r_l) of all road markings to help deliver safer roads.
- Core capability: can survey all lane markings, including longitudinal edges, centerlines, and in-lane markings/symbols, in a single pass.

Measurement Performance

- Operating speed: evaluated for operation at speeds up to 120 km/h.
- No minimum speed requirement.
- Monitors the area 12 m in front of the vehicle.
- Field of view width: covers a measuring width of approximately 4.88 m.
- RL accuracy: typically ±5%.
- RL repeatability: typically ±3%.

Technical and Hardware Data

- Light source: customized LED projectors.
- Image capture: equipped with an HD colour video camera
- Camera rate: operates at 20 frames per second
- Processing power: capable of 50 lines per frame, totaling 1,000 lines per second.

- GPS/navigation: multi-constellation GNSS (GPS, GLONAS, Galileo, Baidu) with UDR for tunnel accuracy.
- Environmental protection: rated IP66 for dust and waterproofing.

Physical and Environmental Specifications

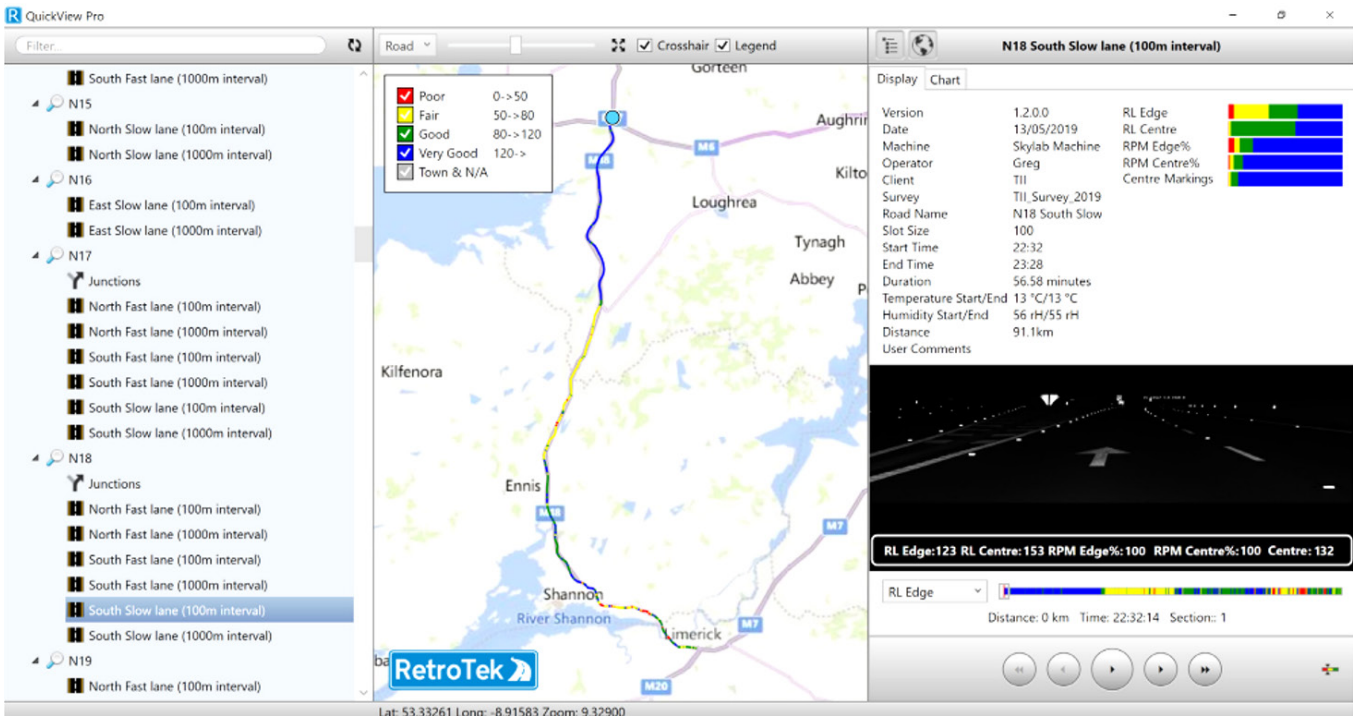
- Operating temperature: 0°C to 55°C.
- Storage temperature: –15°C to 60°C.
- Humidity range: up to 85% non-condensing.
- Unit weight: approximately 25 kg.
- Dimensions: ~1070 x 220 x 360 mm.
- Vehicle mounting: attaches via a standard 2" square tow hitch
- Ground clearance: ~180 mm during survey; ~280 mm when not in use.

Standards and Data Outputs

- Compliance: conforms to CEN EN1436, ASTM E1710, and ASTM E3320.
- Geometry: 30 m measuring geometry.
- Data formats: results can be exported as GPS-tagged CSV, KML, SHP, PDF, and video files.
- Software integration: works with QuickView-Pro for visualization and RetroTek-QuickTracker for US Federal Highway Administration (FHWA) compliance management.

Software and Compliance

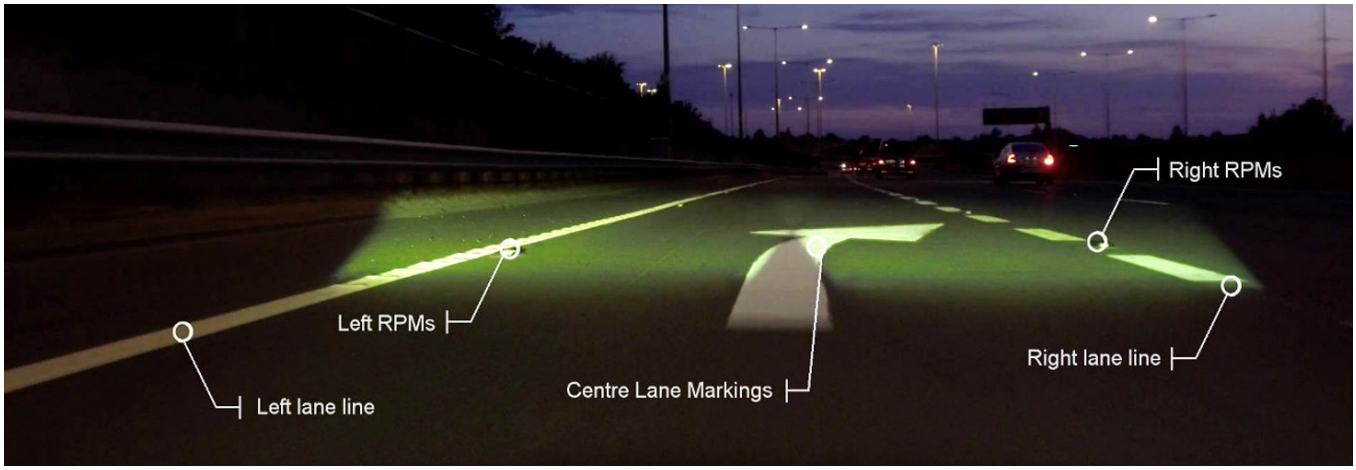
- QuickView-Pro: An interactive visualization and reporting tool that provides GPS-tagged mapping and integral survey video.
- RetroTek-QuickTracker: Planning software designed to manage data and demonstrate compliance with the mandatory FHWA minimum retroreflectivity requirements effective September 2026.



QuickView-Pro

Asset Management Benefits

The data collected allows maintenance managers to identify high priority stretches of road and allocate budgets where the need is greatest. Furthermore, the records enable the validation of contractor work; they also provide a means to predict future maintenance based on the degradation of road markings over time.



Pavement marking

Compendium on Pavement Maintenance and Rehabilitation Practices

The rehabilitation of damaged pavements in urban or rural areas is an important issue for each member country. The purpose of the latest study conducted under the auspices of the REAAA Pavement Technology Committee (PTC) was to investigate the challenges faced, and practices used, in member countries to improve the life of damaged pavements, with the focus placed on factors such as structure, mix design, materials, repair techniques, etc. Members were invited to submit case studies of practices that have been used, or trialled, to rehabilitate damaged pavements in urban and rural areas so that experiences and knowledge on pavement maintenance and repair practices in REAAA member countries could be shared.

REAAA Technical Report TC-13, 'Compendium on Pavement Maintenance and Rehabilitation Practices', is now available on the REAAA website. The report was prepared by the Working Group/Review Panel on QA of Pavement Structures and the REAAA PTC on behalf of the REAAA Technical Committee, which is chaired by Dr James Grenfell of the National Transport Research Organisation (NTRO) in Australia.

Dr. Keizo Kamiya from NEXCO, Japan, the Chair of the PTC, and Mr Kieran Sharp, the ex-officio Chair of the Technical Committee, and REAAA's Technical Editor, compiled the report based on the information received from members.

The following three topics were the focus of the compendium: (1) pothole technology; (2) recycling technology, and (3) pavement resilience.

The report presents the following 11 papers submitted by authors from six REAAA member countries in support of this initiative.

Pothole Technology

- Hot-in-place recycling patching technology in Taipei City
  by Jia-Ruey Chang, Kun-Hu Lin, Po-Sen Yang and Su-Wun Chou, Taiwan
- Malaysia national case study: cold mix standard for pothole patching
  Hamzah Bin Hashim, Malaysia
- All-weather, highly-durable cold asphalt mix for pavement repair
  Akihito Hirota, Hiromi Murai and Tsutomu Gento, Japan

Recycling Technology

- Use of steel slag aggregates and crumb rubber in asphalt mixes
  Than Than Nyunt, Singapore
- Study of the effects of repeated recycling for asphalt pavements in Japan
  A Kawakami, H Nitta, Y Kawashima and M Yabu, Japan

- Excellence in pavement recycling and stabilization in local government In Australia

  Nick Ryan, Australia

Pavement Resilience

- Pavement resilience of National Highway No. 117: Nakornsawan – Nongtao,

  Auckpath Sawangsuriya, Manoth Chaosuan, Lee Ching Hua, Sathapat Daolert and Apiniti Jotisankasa, Thailand

- Development of a new test method applying pore water pressure for evaluating interlayer bonding properties of asphalt pavements

  Hiroki Takebayashi, Shigeki Takahashi, Koki Bamba and Toshiyuki Chikamatsu, Japan

- Reformation of bridge slab maintenance: development of specialized waterproofing materials for manual pavement work

  Gaku Suzuki and Yuki Hiramatsu, Japan

- Foamed asphalt pavement recycling in Canberra, Australia

  Alvaro Amorim and Davina Smith, Australia

The input from the member countries who provided the information is gratefully acknowledged.

Dr. Keizo Kamiya, Chair, REAAA Pavement Technology Committee

REAAA Technical Report TC-15: Resilience and Disaster Management – iCHE2024 Thailand

The REAAA Climate Change, Resilience and Disaster Management Working Committee (CCRDM) is one of three sub-committees reporting to the REAAA Technical Committee, which is currently chaired by Dr James Grenfell. It was established at the 108th Governing Council meeting in Brisbane, Australia, in May 2020. The objective of the Committee is to address issues of concern to REAAA member countries in the area of climate change, resilience and the disaster management of roads. The Committee has published several articles for the REAAA Newsletter and has contributed to international seminars in cooperation with the World Road Association (PIARC). Both REAAA and PIARC are represented on the committee so that collaborative activities of mutual interest to both Associations can be addressed.

Road owners and operators are increasingly required to manage many threats, including climate change and extreme weather, natural disasters, and man-made events. These have significant impacts on the availability and functionality of roads, the safety of its users, and communities. Consequently, owners and operators must address these challenges and provide accessibility and mobility of goods, services and people, whilst minimizing these impacts in the most efficient way possible.

In September 2024, the Department of Highways (DOH), Ministry of Transport, the Kingdom of Thailand, in collaboration with the Roads Association of Thailand (RATh) hosted the 5th International Conference on Highway Engineering 2024 (iCHE204): Future-Proofing Roads for Asia and Beyond. As part of this event, REAAA was invited to organize a session hosted by the REAAA CCRDM Working Committee.

The REAAA session at iCHE2024 focused on increasing the resilience of roads and recovering from disasters. The session provided an overview of the key actions being undertaken by the REAAA CCRDM Working Committee, and collaborative activities with other road associations such as PIARC. The session highlighted activities in REAAA member countries being used to improve the resilience of roads through adaptation solutions, best-practice learnings to recover from earthquakes, and effective ways to manage disasters.

REAAA Technical Report TC-15 is structured to provide summaries of four presentations delivered at the REAAA session, a summary of the panel discussion, a wrap up, and recommendations. The aim was to share best practices and lessons learned from the REAAA region on activities and responses to extreme weather events affecting road networks. Details of the four presentations are as follows.

<u>Activities of REAAA</u>

- Overview of REAAA Climate Change, Resilience and Disaster Management Working Committee activities:
  - Caroline Evans, Australia

<u>Enhancing the resilience of roads</u>

- Experience in nature-based solutions for erosion control and slope stabilization for highway slopes in Thailand:
  - Dr. Apiniti Jotisankasa, Thailand
- Disaster response of expressways in Kumamoto

Prefecture, Japan, due to the torrential rain in July 2020:

- Keijiro Tsurukawa, Japan

- Slope failure cases related to roads in Java, Indonesia:
  - Prof. Agus S Muntohar, Indonesia.

A series of articles were also published in the REAAA Newsletter (Issue 2024-2, April 2025[1]) covering the topic of climate change impacts on road engineering and management. The REAAA CCRDM Working Committee has addressed three major issues: planning for resilience, designing for resilience, and the technology and tools available to address these issues. The articles are supported by several case studies addressing examples of how to reduce the impacts of climate change on road infrastructure assets. Some of these case studies were showcased at the iCHE2024 REAAA special session.

The input from the member countries who provided the information presented in the report is gratefully acknowledged. The report is available on the REAAA website.

Caroline Evans and David Rolland, Co-Chairs of REAAA Climate Change, Resilience and Disaster Management Working Committee

Dr. Auckpath Sawangsuriya, Member of REAAA Climate Change, Resilience and Disaster Management Working Committee, Department of Highways, Thailand

[1] REAAA Newsletter, Issue 2024-2: https://tin.al/sEJqUQ

17th REAAA Conference and Associated Events: Goyang, Korea, 2025

REAAA Korea Chapter

Introduction

The 17th REAAA Conference was held from 26th-31st October 2025 amid the vibrant autumn season in Goyang, Korea. The conference was hosted by the Korea Expressway Corporation, Goyang Special City, and organized by the Korea Road Association The theme of the conference was 'Future Roads: Hyper-Connection'. The Conference provided a platform for collective dialogue on policy directions and technological pathways to address the pressing challenges of climate change and digital transformation. In particular, the coming together of the three leading international road organizations – REAAA, the World Road Association (PIARC), and the International Road Federation (IRF) – in one venue marked a highly symbolic achievement, reflecting the global road community's progress toward deeper and more structured international cooperation.

A total of 3,743 delegates from 48 countries attended the conference. During the Conference, delegates engaged in extensive discussions on key issues facing the road sector, including climate change adaptation, digital transformation, the application of artificial intelligence, infrastructure resilience against disasters and extreme weather events, and sustainable financing and procurement models. The knowledge and experience shared throughout the sessions are expected to serve as a solid foundation for advancing sustainable road development across the Asia-Australasia region.

As well as knowledge exchange, the Conference played an important role in further strengthening mutual trust and cooperation among member countries. The Organizing Committee believes that the outcomes of this Conference will contribute to reinforcing collaboration among REAAA, PIARC, and the IRF, and to advancing a shared vision toward safer, smarter, and more sustainable roads.

Program

October 26 (Sun) / 10.26 (일)

Venue / 장소 Time / 시간	403
9:30 – 10:00	PIARC National Committee Meeting* PIARC 국가위원회 회의
10:00 – 11:00	
11:00 – 12:30	
12:30 – 14:00	Lunch 오찬
14:00 – 15:00	PIARC National Committee Meeting* PIARC 국가위원회 회의
15:00 – 16:00	
16:00 – 17:00	
17:00 – 18:00	
18:00 – 19:00	
19:00 – 20:30	PIARC National Committee Dinner* PIARC 국가위원회 만찬 | **Off-site**

October 27 (Mon) / 10.27 (월)

Venue / 장소 Time / 시간	301	405A
9:00 – 10:00	PIARC Council Meeting* PIARC 이사회 회의	PIARC Technical Committee 1.3 Meeting* PIARC 기술분과위원회 1.3 회의
10:00 – 11:00		
11:00 – 12:00		
12:00 – 12:30		Lunch 오찬
12:30 – 13:00	Lunch 오찬	
13:00 – 14:00		PIARC Technical Committee 1.3 Meeting* PIARC 기술분과위원회 1.3 회의
14:00 – 15:00	PIARC Council Meeting* PIARC 이사회 회의	
15:00 – 16:00		
16:00 – 17:30		
17:30 – 18:00		
18:00 – 19:00	PIARC Council Dinner* PIARC 이사회 만찬 | **401+402**	
19:00 – 20:00		

* Members Only

October 28 (Tue) / 10.28 (화)

Venue / 장소 Time / 시간	Hall 7	301	405A	303+304	305~308	408B
8:30 – 9:00		PIARC Council Meeting* PIARC 이사회 회의				
9:00 – 10:00			PIARC Technical Committee 1.3 Meeting* PIARC 기술분과위원회 1.3 회의			IRF Global Workshop IRF 글로벌 워크숍
10:00 – 11:00	ROTREX 2025 2025 도로교통박람회			Plenary Session 1 주요세션 1		
11:00 – 12:00						
12:00 – 12:30						
12:30 – 13:00						
13:00 – 14:00	Lunch 오찬					
14:00 – 15:00	REAAA Opening Ceremony 개막식 | Hall 6					
15:00 – 16:00	ROTREX Opening Ceremony ROTREX 개막식	ROTREX 2025 2025 도로교통박람회			Technical Session 기술세션	
16:00 – 17:00				The 14th HORA Meeting 제14차 도로기관장 회의		
17:00 – 18:00						
18:00 – 19:00	Welcome Reception 환영리셉션 | Hall 6					
19:00 – 20:00						

October 29 (Wed) / 10.29 (수)

Venue / 장소 Time / 시간	Hall 6	Hall 7	301	303+304	305~308	405	406	Off-site
8:30 – 9:00								Technical & Cultural Visits 기술시찰 및 문화탐방
9:00 – 10:00							The 2nd Korea-Germany Bilateral Meeting* 제2회 한-독 도로협력회의	
10:00 – 11:00		ROTREX 2025 2025 도로교통박람회	PIARC TC International Workshop PIARC TC 국제 워크숍		Technical Session 기술세션	The 28th YEP Meeting* 제28차 YEP 회의		
11:00 – 12:00								
12:00 – 13:00								
13:00 – 14:00	Lunch 오찬							
14:00 – 15:00	Special Session 특별세션	ROTREX 2025 2025 도로교통박람회	PIARC TC International Workshop PIARC TC 국제 워크숍	The 13th Business Forum 제13차 비즈니스 포럼				
15:00 – 16:00								
16:00 – 17:00								
17:00 – 18:00								

* Members Only

Program Overview 행사개요 **Timetable 행사시간표**

October 30 (Thu) / 10.30 (목)

Venue / 장소 Time / 시간	Hall 6	Hall 7	302	303+304	305~308	406	Off-site
8:30 – 9:00							Technical & Cultural Visits 기술시찰 및 문화탐방
9:00 – 10:00						The 20th Korea-Indonesia Road Conference* 제20회 한-인니 도로협력회의	
10:00 – 11:00	Plenary Session 2 주요세션 2	ROTREX 2025 2025 도로교통박람회			Technical Session 기술세션		
11:00 – 12:00							
12:00 – 13:00							
13:00 – 14:00	Lunch 오찬						
14:00 – 15:00		ROTREX 2025 2025 도로교통박람회	The 124th REAAA Governing Council Meeting* 제124차 REAAA 이사회	B2B Session B2B세션	Technical Session 기술세션		
15:00 – 15:30							
15:30 – 16:00							
16:00 – 16:30							
16:30 – 17:00							
17:00 – 18:00							
18:00 – 19:00	Gala Dinner 갈라디너 | Hall 6						
19:00 – 20:00							

October 31 (Fri) / 10.31 (금)

Venue / 장소 Time / 시간	302	Off-site
8:30 – 9:00		Technical & Cultural Visits 기술시찰 및 문화탐방
9:00 – 10:00	The 17th REAAA General Meeting* 제17차 REAAA 총회	
10:00 – 11:00		
11:00 – 12:00	The 125th REAAA Governing Council Meeting* 제125차 REAAA 이사회	
12:00 – 13:00		
13:00 – 14:00	Lunch 오찬	
14:00 – 15:00	Closing Ceremony 폐막식 | 303+304	

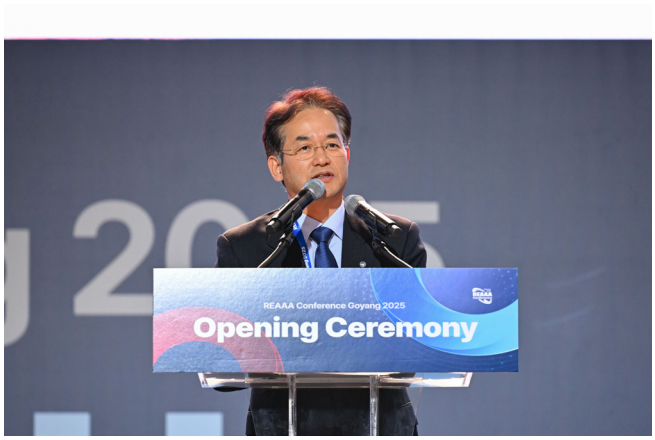
* Members Only

A summary of the events follows.

Opening Ceremony, 28th October 2025

Presentations by:

- Jin Gyu Ham, President of the Korea Expressway Corporation
- Dong Hwan Lee, Mayor of Goyang Special City
- Claude Van Rooten, Honorary President of PIARC



Welcome Reception, 28th October 2025

Gala Dinner, 30th October 2025

Special performances by participating countries: Indonesia, Japan, Korea, Malaysia, Singapore and Taiwan.

REAAA Governing Council Meetings and General Meeting

The 124th REAAA Governing Council Meeting was held on 30th October 2025. This was the final meeting of the current Council term. The 17th REAAA General Meeting was held the following day, immediately followed by the 125th REAAA Governing Council meeting, which was the first meeting of the new Council term.

124th REAAA Governing Council Meeting

125th REAAA Governing Council Meeting

14th Hora Meeting, 28th October 2025

The theme of the 14th Heads of Road Authorities (HORA) meeting was 'Road Infrastructure Maintenance and Management in the Era of Climate Change. The meeting was moderated by Dr. Sunghwan Kim, the President of REAAA.

The program for the HORA meeting was as follows.

Presentation	Speaker
Future roads: Paving the future-sustainable and resilient roads in a climate-challenged era	Dato Sri Alexander Nanta Linggi, Minister of Works Malaysia
Road infrastructure maintenance and management in the era of climate change	Chen Yen-Po, Political Deputy Minister of Ministry of Transportation and Communication, Taiwan
India's road infrastructure management in era of climate change	Rajawat Vinay Kumar, Road Development Director General of India Ministry of Road Transport & Highways
Towards a resilient road network: Strategic framework and case insights from Indonesia	Oktaviano Dewo Satriyo Putro, Director for Road and Bridge Management Systems and Strategies, MPW
Japan's road maintenance policy	Hirofumi Shimada, Director for International Affairs, Road Bureau, MLIT
Sustainable road infrastructure management under climate change	Sung-min Michael Cho, Director General for R&D of Korea Expressway Corporation

Alexander Nanta LINGGI, Minister of Works, Malaysia;
Chen Yen-Po, Political Deputy Minister of Ministry of Transportation and Communication, Taiwan;
Vinay Kumar RAJAWAT, Road Development Director General of Ministry of Road Transport & Highways, India

Oktaviano Dewo Satriyo Putro, Director of DGH, Indonesia;
Hirofumi Shimada, Director for International Affairs, Road Bureau of MLIT, Japan;
Sung-min Michael Cho, Director General for R&D of Korea Expressway Corporation, Republic of Korea

13th Business Forum, 29th October 2025

The theme of the 13th Business Forum was 'AI Applications and the way forward in road construction and maintenance'. The Moderator was Dr. Jason Chang from Taiwan.

Participants in 13th Business Forum with Nonon Wardhani

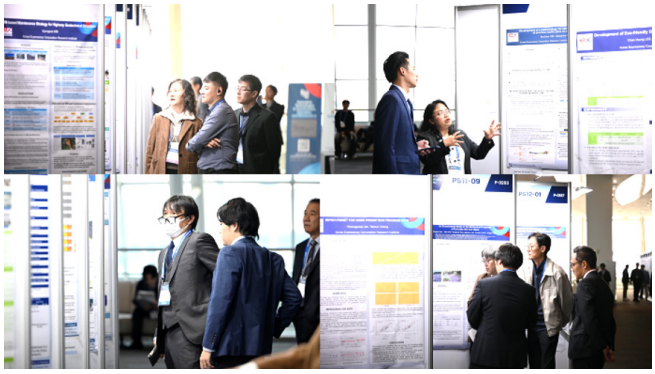
The program for the Business Forum was as follows

Presentation	Speaker
Session 1: Construction	
Integration of advanced ICT Solutions in expressway construction projects in Japan	Mr. Kenji Saita, Senior Director, Japan Expressway International Co. Ltd
Case studies of AI applications in construction sites	Mr. Pyungho Choi, Executive Vice President, Young Shin D&C
AI-powered toll road development: Hutama Karya's journey in Trans Sumatera	Mr. Iwan Hermawan, Executive Vice President, PT. Hutama Karya
Transforming smart construction with robotic 3D printing	Mr. Jinguk Kim, Vice President, DA-ROBOTICS
Session 2: Maintenance	
AI for smart cities and intelligent traffic management	Dr. Dennis Ganendra, Chief Executive Officer, Minconsult Sdn Bhd
A Comprehensive slope monitoring tool integrating the emerging remote sensing technologies: iSlopeR	Dr. Jiunn-Ming Lin, Vice President, Moh and Associates, Inc.
From routine patrols to AI real-time insights: The role of geoROAD.ai in road maintenance (Note: geoROAD.ai, formerly known as ENViS)	Mr. Muhamad Armi Abdul Majid, Managing Director, OFO Tech Sdn Bhd
SFM to SFR-FR+ pushing the limit	Mr. Abdul Hamid Bin Othman, Chief Executive Officer, AHN Vertex Sdn Bhd

17th REAAA Conference

The conference included a total of 190 presentations including:

- a plenary session which addressed:
  - the future of roads with sustainable and smart technologies
  - hyper-connected roads of the future
  - a special session on 'Smart construction – future technology on site'
- an academic program
- poster sessions
- 9 courses with 118 participants
- a social program
- technical & cultural visits.



28th REAAA YEP Meeting (Networking Program), 29th October 2025

The 28th REAAA Young Engineers and Professionals (YEP) Meeting, held on 29th October 2025 at KINTEX II in Goyang City, Korea, served as a significant milestone in fostering international collaboration. This gathering continued a 'voice' for professionals under the age of 40. The YEP was established to encourage a culture of innovation, integrity, and excellence within the road engineering sector. Attended by 35 participants from various member countries, the event was strategically timed to coincide with the 124th meeting of the REAAA Governing Council and the REAAA Conference.

The program commenced with a dynamic networking session organized by the Korea Road Association (KRA). It was designed to translate YEP's core objective of 'international networking exposure' into a high-energy, hands-on experience.

This networking activity challenged participants, grouped into five teams, to construct bridge models using only ice cream sticks and tape within a 50-minute timeframe. These models were subsequently load-tested with water bottles and judged by Dr Koji Kuroda. It provided a practical platform for the engineers to demonstrate their technical teamwork and leadership skills that the YEPs have sought to nurture since its inception. Such activities are vital in addressing the 'YEP Challenges' identified in recent updates – particularly the high cost of international travel and the varying expectations across different member countries. By providing immediate value through skill-building and self-development exposure, the YEP ensures that every meeting justifies the investment of its members.

Following the interactive session, the formal meeting transitioned into a comprehensive review of the YEP 2021-2025 term. Chaired by Ir Hamzah Hashim, a key figure in the history of YEP Malaysia, the session summarized achievements that aligned with one of the program's original goals: to activate REAAA Technical Committees and provide an international presentation platform. Key highlights included the development of a technical presentation depository on the REAAA website and successful strategies for the Katahira Award. Notably, the Katahira Award winner for the REAAA Conference 2025 was selected and awaiting final Council approval. This continued the long tradition of recognizing outstanding technical papers by young engineers.

Looking toward the future, the YEP community established a clear ‘Way Forward’ to capitalize on its potential as its founding members transition, and new talent emerges. The roadmap acknowledges the need for an upgraded organizational structure to better manage meetings and more effectively ‘voice’ the needs of young professionals to the senior Council. This includes the continuation of networking sessions and the expansion of activities into structured exchange programs, regular workshops, and webinars focused on both technical advancements and global policy. By encouraging members to collaborate on international projects, the REAAA YEP aims to ensure its members transition from young professionals into the future leaders of the regional road engineering industry. This successful gathering in Goyang City not only celebrated over a decade of progress but also set a proactive and revitalized tone for the years ahead.

Conclusion

The 17th REAAA Conference is expected to be remembered as a meaningful milestone that provides practical guidance for national road policies and projects, and contributes to shaping a more resilient and sustainable future for road infrastructure.

The Organizing Committee of the REAAA Conference extends its sincere appreciation to all distinguished delegates and guests from member countries who, despite their demanding schedules, devoted their valuable time to participate in this significant event.

Finally, the Organizing Committee expresses its deepest gratitude to all supporting organizations, speakers, partners, and volunteers whose dedication and efforts made the successful hosting of the Conference possible.

Organizing Committee, REAAA Conference, Goyang 2025

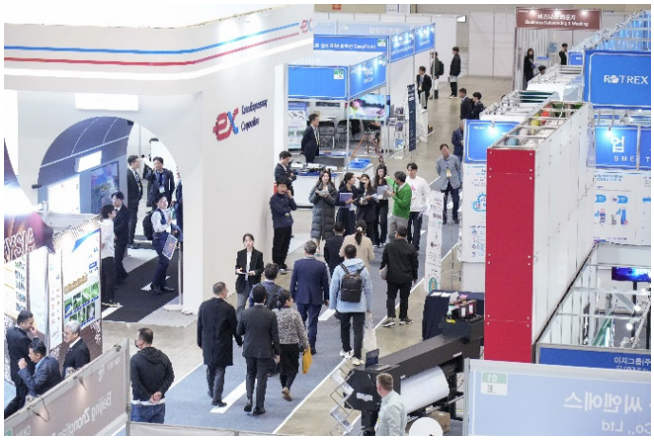
ROTREX 2025 (International Road & Traffic Expo / Exhibition)

REAAA Korea Chapter

The International Road & Traffic Expo / Exhibition (ROTREX 2025) was held during the REAAA Conference on 28th – 30th October 2025. A total of 89 exhibitors participated in the exhibition which attracted almost 5,900 visitors. The themes of the exhibition included road design; construction and maintenance; road safety; smart mobility; ITS and parking.

An active business matchmaking program, based on invited overseas buyers, enhanced exhibitor satisfaction and generated tangible business outcomes. A total of 208 business consultations took place and USD11.2 million of consultation income was generated.

I emphasised that as the REAAA Business Forum Coordinator, we should prioritize infrastructure-related industries to strengthen Business to Business collaboration among member countries.



Key achievements included the following:

- An expanded the global participation base and restoration of the international standing of ROTREX by attracting 12 overseas exhibitors and 27 invited prominent overseas buyers.
- The establishment of the EXPO (Experience ROTREX Zone) to create an immersive, hands-on space where visitors could directly experience participating companies' technologies, including:
  - AI video analysis zone.
  - AI-based in-vehicle safety hazard detection systems.
  - Driving simulation zone: Night-time road condition simulation and technology experience.
  - Pedestrian safety zone: pedestrian-centered road safety technology demonstrations.
  - Rest area zone: Re-creation of rest areas and driver-friendly environments.

In summary, ROTREX 2025 expanded and strengthened international networks by linking the event with the REAAA Conference. This facilitated on-site visits by road-sector stakeholders from REAAA member countries and promoted in-depth, on-site exchange.

REAAA Australian Chapter Low Volume Roads Symposium

Connecting the Dots in Alice Springs, Northern Territory, Australia

In October 2025 the REAAA Australian Chapter conducted a Low Volume Roads Symposium in Alice Springs. Delegates received a warm welcome from the newly-elected Alice Springs Mayor, Ms Asta Hill and the Chair of the REAAA Australian Chapter, Dr. Richard Yeo.

Mayor of Alice Springs, Asta Hill

Dr. Richard Yeo
Chair of REAAA Australian Chapter

By hosting the symposium in the geographical heart of Australia – a continent spanning almost 4,000 km east to west, and with a total road network of some 880,000 km (of which over 60% are unsealed) – delegates were not only able to experience first-hand the strategic importance of the low-volume road network to the sustainability of rural, regional, and remote communities, but also to learn some of the challenges faced by road managers in maintaining the vital supply lines provided by road connectivity.

The symposium opened with 'State of the States' presentations by senior representatives from peak-body organisations including Austroads, the Australian Local Government Association, the Institute of Public Works Engineering Australasia, and the Centre for Pavement Engineering Education. They presented an overview of national and state issues, and some of the actions that are being pursued around the country to address current and emerging challenges facing the road and transport sector, with a particular focus on the low-volume road network.

Presentations at 'State of the states' session

The second day of the Symposium opened with an address by the Northern Territory Government's General Manager of Transport & Civil Infrastructure, Ms Claire Brown. Her presentation set the scene for delegates to consider some of the specific challenges facing the Northern Territory, which has a road network 36,000 km in length, of which 22,630 km are under the Territory Government's direct management. Over 66%, or about 15,000 km, of the network is unsealed.

Claire Brown, Civil Infrastructure General Manager of Transport & Civil Infrastructure

Typical issue with raods in the NT

Delegates were then privileged to listen to a stimulating keynote address from eminent community leader, former Mayor, Councillor and National Transport Commissioner, John Wearne AM. He shared some of his insights from his decades of involvement in advocacy for rural communities and for funding rural road networks, including his significant involvement in the establishment of 'Roads to Recovery' funding for local councils. This remains a key component of local government road funding distributions to this day.

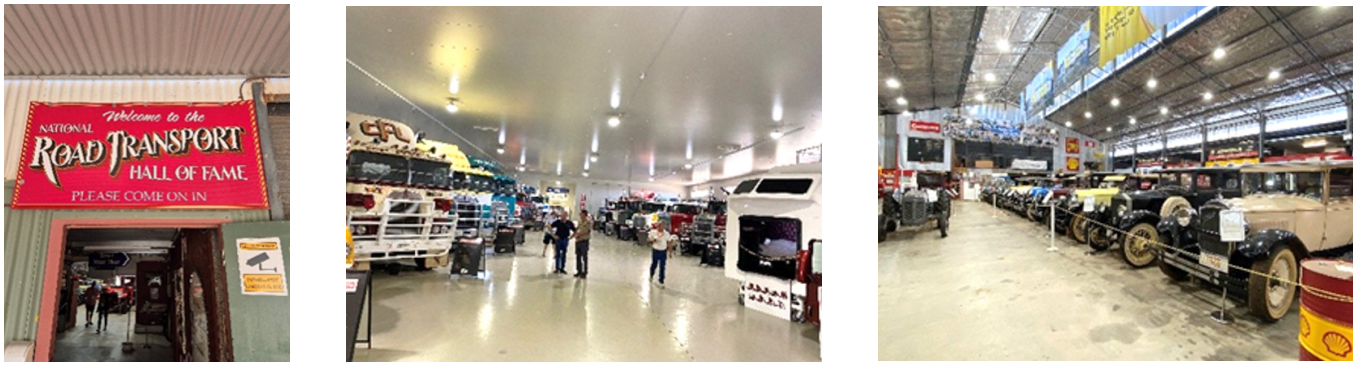
Throughout the second day of proceedings, delegates had the opportunity to expand their knowledge through presentations by industry experts, researchers, and practitioners. A number of the technical presentations focussed on various aspects of low-volume road management, including network risk assessment and route planning, construction techniques, and material supply and road maintenance practices.

The KG Sharp Award for best presentation was presented to Associate Professor Alvaro Gonzalez Vaccarezza for his work on reducing water consumption on low-volume mining roads. Dr Gonzalez is an Associate Professor at the School of Engineering at Pontificia Universidad Católica de Chile, and an expert in pavement design, modelling, and the full-scale testing of pavements. He was working for the National Transport Research Organisation whilst on secondment when he attended the symposium.

The award was presented by Mr Ray Farrelly, an Honorary Member of the Australian Chapter. The KG Sharp Award is named in recognition of the decades of his honorary service to REAAA, and particularly to the Australian Chapter. In addition to being a co-opted member of the Governing Council, he has fulfilled the role of Chair of the Technical Committee and been the unofficial 'editor-in-chief' for REAAA technical reports, Newsletters, the REAAA Journals, and other articles for over 30 years.

Delegates also had the opportunity to join with the local Alice Springs branch of Engineers Australia to share a meal and fellowship after the first day of the symposium.

The symposium concluded with a visit to the Road Transport Hall of Fame to inspect the extensive collection (valued at more than AUD23M) of heavy vehicles and vintage cars and to hear the current Museum President, Frank Bilato, provide a thoroughly engaging and provocative talk about road transport, including numerous stories from his over 4,000,000 km of truck driving experiences.



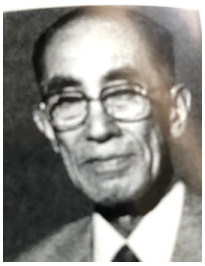
Heavy vehicles and vintage cars at Transport Hall of Fame

Photos and presentations can be accessed using the following link: REAAA- LVR Symposium

Geoff Webb, Deputy Chair, REAAA Australian Chapter

Katahira Award Winners Announced

The REAAA Council endorsed the winners of the Katahira Award (Best Technical Paper Prize and TC Activity Prize) at its 124th meeting, held on 30th October 2025, in Goyang, South Korea.



The Katahira Award was established in 1991 in memory of the late Mr. Nobutaka Katahira who was the President for the 5th Governing Council term from 1983 to 1986. Mr Katahira willed a significant sum of money to REAAA to encourage keen participation among young engineers in the promotion and advancement of science and technology in road development and road-related engineering in the region.

Details of the Katahira Award for best technical paper submitted for presentation at REAAA Conferences, and the Technical Committee (TC) Activity Prize are as follows:

Katahira Award for Best Technical Paper

To be eligible for the award, the authors of the paper must meet the following criteria:

- The author must be under 40 years of age at the time the paper was submitted for consideration. Where there is more than one author, only the first or second author must be under 40 years of age.
- The author must be either an Ordinary/Associate member of REAAA or an employee of an Institutional Member of REAAA at the time of the submission of the paper.
- Where there is more than one author, one member of REAAA as co-author is sufficient for eligibility for the award. It is not essential for that author to be under 40 years of age.
- The paper must not have been published elsewhere in the same form.

Technical Committee (TC) Activity Prize

The prize is awarded to the author(s) of reports/papers submitted by the members of Technical Sub-Committees. To be eligible for the award, the papers and authors must meet the following criteria.

- The author must be either an Ordinary/Associate member of REAAA or an employee of an Institutional Member of REAAA at the time of the submission of the report/paper.
- Where there is more than one author, at least one author must be a member of REAAA.
- The report/paper must not have been presented elsewhere in the same form.
- Unlike the Katahira Technical Paper Prize, there is no age limit for the TC Activity Prize.

The judging panel (Chaired by Dr James Grenfell) evaluated the reports/papers submitted for consideration based on the following evaluation criteria:

- Originality – level of academic or theoretical work and/or practical application.
- Level of innovation – creativity in adapting/modifying existing practice.
- Technical excellence – high level of technical accuracy and standards of reporting, including ease of understanding.
- Relevance to the region.

Prize Winners

Following review, the judging panel decided to award the prizes to the following. The REAAA Governing Council endorsed its decision.

- Technical Paper Award:
  - First prize: 'The development of remote control technology for asphalt finisher', by Mr. Kaiho Takeuchi, Mr. Yoshihiro Bando and Mr. Masanori Isobe, Japan
  - Second prize: 'The optimal state of expressway networks that contribute to maximizing urban functionality', by Mr. Ryo Tobita and Mr. Takashi Omura, Japan
- TC Award
  - Climate Change, Resilience and Disaster Management Working Committee: Overall contribution to the committee – Ms. Caroline Evans (Australia) and Dr. Auckpath Sawangsuriya (Thailand)
  - Pavement Technology Working Committee: Paper by Mr. Scott Young, Mr. Zach Fryer and Mr. Andrew Middleton (Australia) – 'Improved design and construction methodology for urban local roads in flood prone-areas'.

The awards were presented during the 17th REAAA Conference.

Mr. Toru Suzuki, Chair of the Katahira Award Working Committee

126th REAAA Council Meeting

PROGRAM OVERVIEW

DATE	TIME	EVENT	VENUE
21st April 2026 (Tue.)	14:00-17:00	REAAA YEP Site Visit	Taipei Bus Station, Taipei City Traffic Information Center, Taipei Metro Operations Control Center
	18:00-20:30	Welcome Reception	CÉ LA VI Taipei
22nd April 2026 (Wed.)	09:00-16:00	14th REAAA Business Forum	Taipei International Convention Center (TICC) **Room : 201ABC, 2F**
	16:00-18:00	YEP Group Discussion Technical Committee Meetings	Taipei International Convention Center (TICC) **Room : 201, 2F**
23rd April 2026 (Thu.)	09:00-10:00	YEP Group Discussion	Taipei International Convention Center (TICC) **Room : 201, 2F**
	10:00-16:00	126th REAAA Council Meeting (including lunch and YEP Presentation)	Taipei International Convention Center (TICC) **Room : 201ABC, 2F**
	18:00-21:00	Farewell Dinner **Bus Pick-up Venue: TICC front door at 16:30pm. (Bus pick-up and Return)**	BRICK YARD 33 1/3
24th April 2026 (Fri.)	09:30-11:30	Technical Visit **Morning Bus Pick-up Venue: TICC front door at 8:00am. (Bus pick-up and Return)**	Danjiang Bridge

Event Highlights

YEP: INNOVATION JOURNEY

Explore the traffic control center, ride public bikes, and experience mass transit. Join a seminar on sustainability, resilience, mobility, and autono mous vehicles, then collaborate on a report highlighting innovation and excellence.

TECHNICAL COMMITTEE MEETING

The REAAA Technical Committee Meeting gathers experts to share insights on sustainability, resilience, and innovation in road engineering, showcasing collaboration and professional excellence.

BUSINESS FORUM

The seminar "Smart, Sustainable and Resilient Roads with Future Engineer Leadership" highlights innovation in road engineering, showing how smart solutions and young professionals drive sustainable, resilient transport.

TECHNICAL VISIT: DANJIANG

Walk onto the bridge before its official opening, enjoy the view, and experience the world's longest-span single-pylon asymmetric cable-stayed bridge. A symbol of innovation and resilience, open for visitors.

14th REAAA Business Forum

SMART, SUSTAINABLE AND RESILIENT ROADS WITH FUTURE ENGINEER LEADERSHIP

DATE: 22nd April 2026 09:00-16:00
Venue: Taipei International Convention Center (TICC) 2F 201
Hosted by: Road Engineering Association of Asia and Australasia and China Road Federation

TIME	TOPIC	SPEAKER
09:00—09:30	Arrival & Registration	
09:30—09:35	**Opening Ceremony**	
09:35—09:40	Opening Remarks I	**Wen-Juei Chen** President of CRF
09:40—09:45	Opening Remarks II	**Richard Moh** President of REAAA
09:45—09:50	Opening Remarks III	**Shih-Kai Chen** Minister, MOTC
09:50—10:00	**Group Photo**	
10:00—10:05	Remarks by Business Forum Coordinator	**Lydwina Marchiela Wardhani**
10:05—10:10	**Session 1: Digital Technology** Moderator: **Dr. Ya-Wen Chen** Chief Executive Officer, Advanced Transportation Research Center, University of Taipei	
10:10—10:30	Data-Driven Transportation: Enabling Safer and Smarter Roads in Taiwan	**Henry Meng** Director General, Software Technology Institute, Institute for Information Industry (III)
10:30—10:50	The Road to Autonomy – Integrating AI Design and Advanced Validation	**Jerry Wang** Chairman, The Automotive Research & Testing Center (ARTC)
10:50—11:10	Open Source, Real Impact: The Blueprint for Autonomous Social Integration	**Johnny Wang** Business Development Director, TIER IV
11:10—11:20	Q&A	
11:20—13:00	Lunch Break & Networking	

TIME	TOPIC	SPEAKER
13:00—13:05	**Session 2 : Resilient Sustainability & Net Zero** Moderator: Prof. Jia-Ruey Chang Professor of Department of Civil Engineering, National Ilan University (NIU)	
13:05—13:25	Sustainable Resilience: Advancing Smart Disaster Risk Governance	**Wei-Sen Li** Secretary General, National Science and Technology Center for Disaster Reduction (NCDR)
13:25—13:45	Low-Carbon Pavement Materials and Applications in Circular Economy	**Tony Tang** Chairman, King Ho Tai International Co., Ltd.
13:45—14:05	Smart Asset Management Initiatives to Reduce the Carbon Footprint and Increase Resilience	**Geoff Webb** Deputy Chair, REAAA Asset Management Committee
14:05—14:15	**Q&A**	
14:15—14:25	**Break**	
14:25—14:30	**Session 3: People-oriented Mobility & Future Engineers** Moderator: Prof. Albert Y. Chen Professor of Civil Engineering, National Taiwan University (NTU)	
14:30—14:50	People-Centric Transport Planning and Design in Singapore	**Jing Shan Lew** Land Transport Authority (LTA)
14:50—15:05	Latest AI Developments for the Public Sector	**Eugene Shen** AI & Digitalization Superintendent, Moh and Associates, INC.
15:05—15:20	Future Engineer	**AI Assistant Engineer**
15:20—15:30	Q&A	
15:30—15:40	Closing Remarks	

REAAA New Zealand Chapter Low Volume Roads Workshop

The REAAA New Zealand Chapter is holding its 2-yearly Low Volume Roads (LVR) Workshop on 20th & 21st August 2026 at the Claudelands Event Centre in Hamilton. The theme of the workshop is 'Knowledge-sharing – crossing the boundaries to share innovation!' The Chapter is keen for fellow REAAA Member countries to participate – both as presenters and as delegates. As a bonus, The New Zealand Transport Agency (NZTA) will be running its Pavements Forum at the same venue the day before, i.e. Wednesday 19th August.

Abstracts are invited to be submitted on one of the following topics:

- Smarter asset management: tactical approaches to maximise value and to minimise downtime.
- Designing safer roads: practical strategies to reduce crashes and save lives.
- Building resilient networks: keeping infrastructure running in a changing climate.
- Sustainable infrastructure: balancing performance with environmental stewardship.
- Increasing knowledge and capability: targeted training that lifts performance on the ground.
- Beyond the main road: designing, maintaining and managing forestry, utility and Department of Conservation access networks.

Abstracts should be submitted to admin@reaaa.co.nz by 30th April 2026. Submissions from Young Professionals are particularly encouraged.

Simon Hunt, REAAA New Zealand Chapter

REAAA Member Rob McInerney appointed an Officer of the Order of Australia (AO) in the Australia Day Honours List

The International Chief of Future Impact at the International Road Assessment Programme (iRAP), Rob McInerney, has been appointed an Officer of the Order of Australia (AO) in the Australia Day Honours List. The prestigious award recognises his distinguished service to road safety in Australia and 140 countries worldwide that has supported the estimated saving of more than 850,000 lives and serious injuries by the end of 2025.

Rob's work has helped transform the way road infrastructure safety is measured, funded and delivered across the world, ensuring that investment decisions are guided by evidence and focused on saving the maximum number of lives and serious injuries.

For nearly twenty years, he has led the global charity iRAP in its vision for a world free of high-risk roads. iRAP works with governments, development banks, mobility clubs, industry and road safety NGOs across the world, providing the free tools, training and support to make their roads safer.

Under Rob's leadership, iRAP's team and partners have pioneered the development of the globally recognised iRAP Star Rating methodology and tools which are supporting countries' achievement of minimum 3-star or better infrastructure safety standards for all road users.

His advocacy has driven global support for, and the embedding of, minimum 3-star or better safety standards for roads in national and development agency policies, the establishment of the UN Decade of Action for Road Safety to halve road deaths and injuries by 2030, and the UN Member State-agreed Global Road Safety Performance Targets for the achievement of 3-star or better roads worldwide.

For further information, visit https://irap.org/

Valedictorian: Dr. Jaime A. Pacanan, Former REAP President

Dr. Jaime Pacanan, Former REAP President

We are deeply saddened to announce the passing of Dr. Jaime Abarsoza Pacanan, former President of REAAA and a long-serving Council Member. He passed away in May 2025 at the age of 75.

We honor and celebrate a remarkable individual — Engr. Jaime A. Pacanan — whose dedication, leadership, and integrity have left a lasting mark on everyone privileged to work alongside him. Engr. Pacanan not only exemplified technical excellence but also embodied the true spirit of engineering — solving problems with precision, leading with vision, and serving with humility.

Throughout his years of service, he demonstrated unwavering commitment, professionalism, and a steadfast work ethic that inspired confidence and respect. His contributions go far beyond completed projects and accomplished milestones. He was a mentor to many, a steady hand in times of challenge, and a source of wisdom drawn from experience. Through his guidance, countless colleagues grew not only as professionals but also as individuals.

His legacy will continue to shape the paths of those he influenced. The foundations he helped build — both in structures and in people — will stand strong for years to come.

Engr. Pacanan, thank you for your leadership, your service, and your example. On behalf of everyone in the organization, we extend our deepest gratitude and heartfelt condolences to his family and loved ones.

Maraming salamat po, at mabuhay kayo.

Calendar of Events

The programme is updated according to the decisions taken.

Date	Event	Location	Program	Organiser
		2026		
10-13 March	17th World Winter Service and Road Resilience Congress	Chambéry, France	Winter Service Road Resilience Decarbonization	PIARC
21-14 April	126th REAAA Council Meeting 14th REAAA Business Forum 29th YEP Meeting	Taipei, Taiwan	Meeting Forum	REAAA
12-14 May	NTRO International Conference	Melbourne, Australia		NTRO
22-24 June	12th International Conference on the Bearing Capacity of Roads, Railways and Airfields	Ljubljana, Slovenia	Conference	https://bcrra.si/
19-21 August	REAAA Low Volume Roads Workshop & NZTA Pavements Forum	Hamilton, New Zealand	Workshop	REAAA New Zealand Chapter
September – October	13th Malaysian Road Conference (MRC)	Malaysia	Conference	REAM Malaysia
30 September - 2 October	3rd PIARC International Conference on Road Tunnel Operations and Safety Conference	Cracow, Poland	Road Safety Road Tunnel Operations TC 4.4	PIARC

Date	Event	Location	Program	Organiser
September – October	127th REAAA Council Meeting 15th REAAA Business Forum 30th YEP Meeting	Indonesia (to be confirmed)	Meeting, Forum	REAAA
21-23 October	VIII International Bridge Seminar 'Sustainability and bridge technology: a vision for the future'	Merida, Mexico	PIARC Committee TC 4.2: Road Bridges	PIARC
9-11 November	SURF 2026 – 110th Symposium on Pavement Surface Characteristics	Tokyo, Japan	Road Assets Management Road Pavements	PIARC
8-11 December	IRF Global R2T Conference & Exhibition	San Francisco, CA, USA		IRF
2027				
4-8 October	XXVIIIth World Road Congress	Vancouver, Canada	Congress	PIARC

REAAA WELCOMES NEW MEMBERS

The membership of REAAA as of 15th August 2025 was 1,227. The REAAA Governing Council and Chapters have approved the following 24 new members for the period between 7th April to 15th August 2025.

Institutional	*2*
Life	*7*
Ordinary	*15*
TOTAL	**24**

The list of new members approved at the 124th REAAA Council Meeting in Goyang, Republic of Korea, on 30th October 2025 is as follows:

Institutional Members

1.	HEB Construction Ltd	I.0406 New Zealand
2.	Rolco NZ Ltd	I.0407 New Zealand

Ordinary Members

1.	Bahareh Nikmehr	O.4050 Australia
2.	Chrysoula Pandelidi	O.4051 Australia
3.	Echo Tianchun Wang	O.4052 Australia
4.	Jaimi Bridget Harrison	O.4053 Australia
5.	Youli Lin	O.4054 Australia
6.	Andrew Mcleod	O.4055 New Zealand
7.	Simon Everett	O.4056 New Zealand
8.	Thilanka Silva	O.4057 Australia
9.	John Perrott	O.4058 Australia
10.	Yasuaki Kobayashi	O.4059 Japan

Ordinary Members

11.	Mohammadjavad (Javad) Yaghoubi	O.4060 Australia
12.	Ari Wibowo	O.4061 Indonesia
13.	Zheng Gin	O.4062 Australia

Ordinary Members

1.	Dr. Herda Yati Katman	O.3764 Malaysia
2.	Ir. Long Ahmad Burhanuddin Long Hassan	O.3776 Malaysia

Life Members

1.	Dennise C Trajano	L.0445 Philippines
2.	Percival C Panopio	L.0446 Philippines
3.	Ryan Tee Jubilo	L.0447 Philippines
4.	Cayamombao Dimaampao Dia	L.0448 Philippines
5.	Melchor Talaboc Anquillano	L.0449 Philippines
6.	Glieza Eroy Caceres	L.0450 Philippines
7.	Rosenberg Santander Caceres	L.0451 Philippines