



arbo

SHAPING  
OUR  
TRANSPORT  
FUTURE

# INTRODUCTION

The Australian Road Research Board (ARRB) is the source of independent expert transport knowledge, advising key decision makers on our nation's most important challenges. We have earned a reputation for scientific integrity and are the leading providers of value-added applied research and technical services.



We've been doing it since 1960. ARRB prides itself on providing a total service to our clients, both locally and internationally. Our mission is firmly focused on creating knowledge for tomorrow's transport challenges and solutions for today.

## PARTNERING WITH US

At ARRB we understand that the success of transport infrastructure projects hinges on your ability to choose partners that understand the unique requirements of the Australian transport landscape. Experience, expertise, and a trusted advisor. That's what you get when you work alongside ARRB. And that equals peace of mind, allowing you to focus on results. Regardless of scale or the level of technical complexity, ARRB delivers specialist expert advice, responsiveness and support you can rely on – each and every time.

# OUR JOURNEY SO FAR

ARRB has a strong heritage supporting and delivering high quality applied research for Australian and New Zealand federal and state road and transport agencies, local government, and for the community. Our teams are made up of world class roads, transport and infrastructure experts who analyse and interpret global research and apply it to the Australian and New Zealand context.



ARRB opened its doors in 1960, when Australia supported ten million people. For decades we have been researching the road challenges facing Australia and New Zealand and delivering solutions to benefit the nation's people. ARRB has also grown and transformed with societal shifts, to facilitate the dynamic transport needs of Australia's current 25 million and growing population.

We have always been at the forefront of transport innovations from developing systems and technologies through to asset management and the establishment of initiatives and projects like the introduction of autonomous vehicles.

Our core business is enlivened with a focus on innovation and collaboration. The ARRB brand identity has transformed to reflect a modern, connected organisation creating knowledge for tomorrow's transport challenges and solutions for today.

ARRB's new National Transport Research Centre is a state-of-the-art facility, located in the heart of the Port Melbourne district of Fishermans Bend - Australia's largest urban renewal project. This advanced facility is affording ARRB better opportunities to help shape Australia's transport future.

Our vision is to help make our cities smarter, cleaner, greener, safer, more efficient and productive through intelligent transport solutions.

# OUR EXPERTISE

Population growth in a growing economy translates to even greater transport asset maintenance challenges. In response to these domestic challenges, ARRB is involved in a range of local road technology and infrastructure development and testing programs.

## TECHNOLOGY

ARRB is harnessing the value of transformative technology to:

- Predict future disruptive opportunities and challenges
- Meet growing community needs and aspirations
- Simplify complex decision making

## INFRASTRUCTURE

ARRB sees great value in developing adaptive and affordable infrastructure for future generations. In particular, we deliver:

- Improved resilience
- Better access and journey experiences
- The right infrastructure choices for the community at the right price

In achieving these objectives, ARRB organises around five key outcomes;

## FUTURE TRANSPORT INFRASTRUCTURE

Facing the challenges of new materials and infrastructure performance in a cleaner, greener world.

## SUSTAINABILITY AND RESILIENCE

Ensuring that our transport systems can adapt to change or disaster and cause minimal environmental damage. Optimisation of the level of investment to achieve a resilient system.

## TRANSPORT SAFETY

User safety and security on our transport network through understanding the interaction between human decision makers, vehicles, infrastructure, and the broader environment through a systems approach.

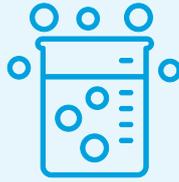
## FUTURE TRANSPORT TECHNOLOGY

Seizing opportunities to improve customer experience with the rapid advances in technology on offer. Enhancing the functioning of mobility corridors by embracing technological change.

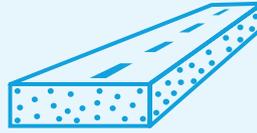
## NEXT GENERATION ASSET MANAGEMENT

Reconfiguring asset management to allow skilled decision makers to focus on informed decision-making, rather than routine and repetitive tasks. Delivering a step change in data analytics to better manage the transport system.

**FUTURE TRANSPORT  
INFRASTRUCTURE**



Research Labs



Pavement & Materials



Specifications



Guidelines

**SUSTAINABILITY  
AND RESILIENCE**



Resilient Transport  
Systems



Sustainable Transport  
Planning

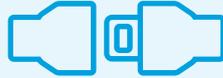


Freight & Logistics



Transport Policy

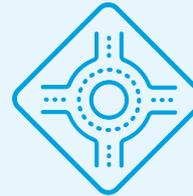
**TRANSPORT  
SAFETY**



Transport Safety  
Policy



Transport User  
Behaviour



Safe Road  
Infrastructure



Safe Mobility

**FUTURE  
TRANSPORT  
TECHNOLOGY**



Smart Traffic  
Management



Network Operations  
Planning



Intelligent Transport  
Systems Assets

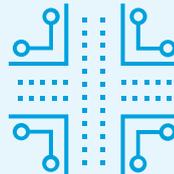


Advanced Mobility  
Technologies

**NEXT  
GENERATION  
ASSET  
MANAGEMENT**



Data Collection



Infrastructure  
Performance



Intelligent Asset  
Management



Transport economics

# FUTURE TRANSPORT INFRASTRUCTURE

## RESEARCH LABORATORIES

ARRB's investment in materials laboratories over 60 years fulfils a commitment to research, innovation and pioneering experimentation in bituminous binders, stabilised materials, asphalt and granular pavements.

Our new state of the art laboratories are equipped with a wide range of equipment capable of providing comprehensive testing of all these materials. The laboratories, located at our national headquarters in Port Melbourne, provide an excellent platform to perform applied research with a focus on finding new and innovative solutions to the challenges facing the Australian and New Zealand road construction industry. The design of the laboratories, including the extensive bench space, integrated offices and flexible work areas has resulted in improved work flows and a higher capacity for testing.

Our laboratories have been instrumental in the development of test methods such as – Characterisation of the Viscosity of Reclaimed Asphalt Pavement (RAP) Binder Using the Dynamic Shear Rheometer (DSR), Characterisation of Flexural Stiffness and Fatigue Performance of Bituminous Mixes, Permanent Deformation Characteristics of Unbound Granular Materials by the Wheel-tracking test – and have provided researchers with the facilities to undertake fundamental assessments of new and innovative technologies (EME2, crumb rubber asphalt).

With a stringent quality assurance program and ISO/IEC 17025 NATA accreditation, the ARRB laboratories are highly specialised independent facilities producing accurate and precise results. Our laboratories also offer: hands-on training for students, technology transfer programs to state road agencies and industry, advanced pavement research techniques and a national reference resource.

## PAVEMENTS & MATERIALS

Expertise in road pavements and materials has always been, and will continue to be, an important part of ARRB's commitment to Australia. In the 1960s and 1970s, ARRB was instrumental in solving the problem of boosting the economy by joining all parts of the nation with affordable pavement structures. In the future, we will be part of solving the problem of how to design and provide the infrastructure needed to enable connectivity, automation and the societal and economic benefits that those will bring.

Our knowledge spans the spectrum from asphalt and rigid pavements in urban environments, to low-cost unbound granular pavements with thin bituminous surfaces and encompassing unsealed roads. A current focus is on design and material options for sustainable pavements.

The characterisation of bituminous binders, including new, innovative binders, forms a fundamental part of our research and consulting services. To complement this, we also seek new means of designing pavement structures and rehabilitation options which incorporate these materials and more conventional materials, with the aim of optimising the return on investment the nation makes in its road network. To assist in the lifetime performance forecasting of these innovations, we have extensive knowledge of pavement deterioration processes, including our world-leading road asset data collection services.

## SPECIFICATIONS AND GUIDELINES

Specifications and guidelines form a critical part of managing risk of premature failure of road infrastructure, by providing objective technical limits and best practice guidance on design and use of materials. ARRB's team of engineers and scientists are well positioned to apply their experience and applied research knowledge in order to develop both specifications and guidelines on a range of materials and design aspects. Our staff have a track record in writing practical and accessible guideline documents for road agencies and for Austroads, and in many instances have assisted in the drafting of Australian Standards as well.



CAPABILITIES STATEMENT

# SUSTAINABILITY AND RESILIENCE

## RESILIENT TRANSPORT SYSTEMS

Twenty five million Australians derive benefit from or directly use the transport system every day. The transport system is an essential service, and minimising interruption must be a key focus of transport agencies.

Natural disasters are a significant disruptor of transport networks, be they bushfires or floods. ARRB has expertise in assessing the vulnerability of networks and individual links within a system to these natural hazards as well as expertise in helping agencies formulate policy in a structured way through resilience frameworks.

ARRB's Future Transport Infrastructure and Next Generation Asset Management teams are focusing their efforts on better materials, design and maintenance strategies to make rural and remote networks more resilient in the face of changing weather patterns. This is approached through scenario analysis and investigating multiple options to determine an appropriate solution.

## SUSTAINABLE TRANSPORT PLANNING

ARRB is able to address the two main dimensions of sustainability:

Environmental sustainability of transport, which focuses on the net impact of the transport system on the environment, and the impact of the environment on the transport system. ARRB's expertise in this area deals primarily with the embedded energy of various types of pavement materials and the impact of various maintenance strategies on fuel economy (and therefore production of harmful emissions). The second aspect is the ability to assess the vulnerability of infrastructure elements and sub-networks or failures as a result of abnormal conditions.

Operational sustainability, which focusses on the ability of the transport system to keep fulfilling its objectives in the face of increasing demands, changing availability of resources etc. In this area, our Sustainability and Resilience team joins forces with our Future Transport Technology and Transport Safety teams to evaluate methods of improving

network mobility, through management of transport demand (people and/or freight) and identifying means of using capacity across several modes – not just cars – to improve the overall 'workability' of the system.

All travel modes are considered: walking, cycling, bus, rail, motor vehicles (including parking policy), and freight. We deliver plans, strategies, policies and guidelines that are sustainable, safe, efficient, equitable and practical.

## FREIGHT AND LOGISTICS

ARRB's freight and logistics team has experience from a number of sectors; public, private and academic and can bring all of these to bear on ways of improving the 'workability' of urbanised areas. Recent work has involved helping local government understand the implications of after-hours freight deliveries as a means of increasing the productivity of their road networks. We have also evaluated strategies for reducing the demand for trips on crowded urban road infrastructure, thereby increasing available capacity and improving overall levels of service.

## TRANSPORT POLICY

ARRB's unique breadth of skills in the transport space allows us to support agencies in their efforts to develop and implement effective transport policy. This support can come in the form of identifying new policy options based on the findings of the latest research, or assisting agencies evaluate a range of policy options.

ARRB's extensive experience provides agencies with sustainability and resilience through technical and strategic policy evaluation:

- Technical policy evaluation, in terms of developing and/or selecting maintenance strategies for infrastructure or an appropriate means of technical evaluations.
- Strategic policy evaluation such as speed limits and driver licensing requirements.

# TRANSPORT SAFETY

## SAFE ROAD INFRASTRUCTURE

ARRB produces national and international guidelines and tools to improve the road and roadside environment in order to deliver safe, economical and efficient road design solutions. We also identify and evaluate innovative road infrastructure treatments to determine safety and other operational implications. Guidance and advice is provided on a range of road infrastructure issues that should be considered in developing projects, including:

- Road safety risk assessment based on proactive and reactive approaches
- Road design solutions for different environments (including rural, urban and local roads) and different road user groups (pedestrians, cyclists, motorcyclists, heavy vehicles and passenger vehicles)
- The link between road function, supporting infrastructure and appropriate speed management
- Guidance on roadside safety, including the selection and use of appropriate road safety barrier systems.

## TRANSPORT USER BEHAVIOUR

User-centred design of the road transport system is critical to ensure that it delivers all the services and benefits that customers expect, now and in the future. These include safety, comfort, efficiency, ease of use, and pleasure. Research into human factors and ergonomics has made important contributions to the design, development, operation and evaluation of road transport systems to optimise customer experience and safety. However, as the road transport system evolves, so too will the role of humans within the system. We focus on those human issues critical in the design and operation of the road transport system and how these are likely to change as the road transport system becomes increasingly automated, connected and service oriented.

## TRANSPORT SAFETY POLICY

The way transport systems are being used is changing. Monitoring these changes, understanding the factors that drive them, and determining their implications for safety and efficiency is a growing component of the work undertaken by ARRB's Transport Safety team.

We research and offer solutions to transport safety challenges involving all elements of the Safe System. Services provided include the identification of best practice; well-designed evaluations, production of national and international guidelines, and contributions to transport safety, safe road infrastructure, workplace road safety, transport efficiency, transport integration, road user education and driver / rider licensing.

## SAFE MOBILITY

Effective management of speed is an important consideration in the safe and efficient operation of road networks. From a safety perspective, there is a very clear link between increase in speeds and severity of outcomes when crashes occur. It is important to identify the function and use of roads, and design infrastructure and speed management provision accordingly. ARRB has conducted extensive research on the link between speed, infrastructure design and safety outcomes. Guidance is available on appropriate speed limits, and infrastructure provision to support appropriate speeds. ARRB has also developed tools for the assessment of appropriate speed limits including 'XLimits' which is used throughout Australia and internationally, including the US. ARRB monitors speeds on a network or project basis using traditional as well as cutting edge approaches, including the use of telematics data.

# FUTURE TRANSPORT TECHNOLOGY

## SMART TRAFFIC MANAGEMENT

Improvements in Big Data and telecommunications have opened opportunities to be able to manage the road network more intelligently. Better real-time situational awareness and control techniques improve the productivity of the road network leading to better mobility outcomes. Services include:

- Traffic management strategies
- Traveller information systems
- Priority control strategies for public transport, heavy vehicle and emergency vehicles
- Travel time estimation
- Real-time traffic state estimation
- Gating and pre-emption techniques
- Traffic control impact review
- Traffic control settings review and optimisation
- Incident detection and management
- Lane use management
- Parking operation and management.

## NETWORK OPERATION PLANNING

There is an increasing demand on the road network which includes a variety of road users such as general traffic, pedestrians, cyclists, public transport, and freight. With limited road space it is essential that these often-competing needs be managed systematically, effectively and equitably. Services include:

- Movement and place framework
- Network performance analysis and visualisation
- Post-implementation analysis
- Network operation strategy and techniques
- Cost of congestion estimation



## INTELLIGENT TRANSPORT SYSTEMS (ITS) ASSETS

Road network operations depend on the operation of ITS assets, particularly with the move towards Smart Traffic Management. ITS assets need to operate with limited downtime, particularly in cases where they play a critical role in safe operations. The management of ITS Assets are critical to deriving the best value-for-money of limited capital and maintenance funds. Services include:

- Reliability-centred maintenance of ITS assets.
- Cooperative ITS
- Specifications and type approval
- Concept of operations
- Review of technologies
- Standards and harmonisation
- Cost-benefit analysis of ITS assets
- Interaction with road users
- Operational impact assessment
- Industry review.

## ADVANCED MOBILITY TECHNOLOGIES

There are many emerging concepts and technologies that may disrupt the way we move both people and goods. Some prominent examples are: connected and automated vehicles, electric vehicles and drones, Mobility as a Service (MaaS), and shared economy, as well as other more specific transport technologies such as Segways, e-bikes, trackless trams, and high speed public transport. In order to be prepared for the wide operation of such technologies, it is imperative that we gain an understanding of the technology itself and investigate its impact on regulatory, policy, operational framework, and licensing.

Services include:

- Connected Autonomous Vehicles (CAV) trials project management and safety management plan
- CAV regulatory, policy, and licensing
- Innovative vehicle import approval
- Development of concept of operations for innovative vehicles
- Drone systems consultation (in partnership with Management Consulting Service Hover UAV)
- Innovative parking system



# NEXT GENERATION ASSET MANAGEMENT

## DATA COLLECTION SERVICES

ARRB has collaborated with local and state road agencies to assess the condition of both sealed and unsealed road networks for over 25 years.

This experience undertaking project and network level surveys allows ARRB to deliver accurate and reliable data in a timely manner that is collected in accord with our own ISO 9001 accredited in-house procedures and the relevant national and international standards. ARRB's fleet of survey vehicles includes equipment capable of assessing the condition of the pavement, either above or below the road surface, and collecting digital video of the road network which is useful for locating roadside assets and undertaking road safety assessments. The fleet also includes the intelligent pavement assessment vehicle (iPAVe), which simultaneously measures the functional and structural condition of the pavement at highway speeds, and the intelligent safe surface assessment vehicle (iSSAVe), which focuses on measuring the skid resistance of the pavement surface along with other safety related parameters.

With trained survey operators Australia wide, ARRB have the best resources to provide data collection services for your next project. ARRB also offers a 'total service' solution where the data can be analysed to meet your needs, developing network condition prediction models that are calibrated to local road conditions.

## INFRASTRUCTURE PERFORMANCE

Making infrastructure effective in achieving its objectives requires money, land, energy, and extra resources. Infrastructure performance monitoring is crucial to track effective improvements following substantial public and private investment in Australian infrastructure. There is a need to review infrastructure systems to clarify the drivers of any given performance indicator and ensure unintended effects and adverse incentives are avoided. ARRB can provide long-term strategic infrastructure planning based on stakeholder needs, including clear articulation of outcomes to be achieved.

## INTELLIGENT ASSET MANAGEMENT

Australia's road asset network is worth over \$250bn, with a high replacement cost. Management of the condition and serviceability levels of this network is resource-intensive. ARRB's Next Generation Asset Management team is focused on providing fit-for-purpose advice to add greater value to Australasian networks and systems whatever the level of available resources.

Key services include:

- Bridge inspections and structural investigations
- Long-term pavement performance monitoring to develop consistent performance evaluation and decision tools.
- The assessment of the effects of incremental increases in axle group loads on the road network in terms of road condition and road agency costs,
- The prediction of dynamic wheel loading and its effects on the road network,

## TRANSPORT ECONOMICS

The network is a vast asset and must provide the public sector and its stakeholders a good return on capital and subsequent investments in maintenance. This is complicated by the far-reaching impact which transport has on the macro economy, and on the non-financial returns which the network provides.

The transport asset management and economics team works with engineers, scientists and other transport professionals to help quantify returns and potential returns of various decisions.

Specific activities focus on:

- The economics of road based transport and investment in capital and maintenance
- Transport demand modelling and forecasting
- Project evaluation and risk assessment
- Road and heavy vehicle pricing and the cost of congestion
- Freight and logistics
- Transport policy analysis and integrated planning
- Transport externalities analysis related to environmental, social and safety aspects



# SUPPORT SERVICES

## ADVANCED TECHNOLOGIES LAB

The Advanced Technologies Lab (ATLab) will be the primary and centralised source of road transport data within ARRB and used to deliver project outcomes benefiting road and transport agencies and the community.

Through engagement with stakeholders and industry, ATLab was created with the purpose to generate, collect, share and analyse transport data. This data provides road and transport agencies with insights and a better understanding of network and infrastructure performance.

ARRB aims to empower our nation's strategic decision makers. The ATLab achieves this by coordinating data used and collected across the organisation, including road condition (strength, roughness, rutting and cracking), lane widths, vehicle speed/counts/headway, probe data, WIM, and crash statistics. The benefits of big data can be improved by applying ARRB's knowledge and expertise by centralising datasets and implementing algorithms, analytics and visualisations

ARRB's extensive knowledge enables our members to make data-driven decisions based on observable trends, concentrations and bottlenecks highlighted by these tools and supported by the data.



# SUPPORT SERVICES

## KNOWLEDGE HUB

The road and transport industry is a fast-moving, ever-changing sector. ARRB's Knowledge Hub keeps you up to date with the latest research, knowledge and news.

The Knowledge Hub range of services include our monthly e-newsletter iNTRo, which is a one-stop shop for what's going on in roads and transport. Daily social media updates through ARRB's LinkedIn, Twitter, Facebook and YouTube channels inform you what is happening at ARRB and in the wider road and transport world.

In-house and regional workshops allow our experts to present world class transport and infrastructure topics, best practices and research outcomes. Our webinar program continues to offer cost saving and convenient solutions to clients and transport professionals who cannot attend face-to-face events.

As a collaborative initiative with industry and transport agencies, ARRB's state-of-the-art Port Melbourne auditoriums, a webinar studio, Innovation Labs, meeting rooms and a high class board room are available for hire.



## MG LAY LIBRARY

ARRB's MG Lay Library provides opportunities to access the latest research, knowledge and expertise as part of the national and international land transport dissemination and coordination initiatives that are funded by our members.

The National Information Services (NIS) program provides national land transport information services and leadership in delivering information to all sectors of the Australian land transport community. It is jointly funded by the Federal Department of Infrastructure and Regional Development and Cities along with state and territory road agencies and coordinated by experienced information and knowledge management professionals based at the MG Lay Library.

The program provides online knowledge resources and alerting services to aid decision support coordination and collaboration nationally and internationally.

NIS initiatives include:

- Australian Transport Index (ATRI) in the international Transport Research International Documentation (TRID) database
- Rail Knowledge Bank
- TARU RSS feeds supplies details on recent publications organised into key land transport subject areas.
- Making News in Transport, a weekly e-mail alert service of selected land transport related news items from Australia and overseas

ARRB also leads resource and expertise sharing for the Tranzinfo network across Australasian transport libraries.

# CASE STUDIES

## EASTLINK OPERATIONAL DEPLOYMENT OF SEMI-AUTOMATED VEHICLES

ARRB collaborated with ConnectEast to assess and understand the capabilities, operation and driver experience of currently available semi-autonomous vehicles, and how they interact with the current road infrastructure.

A series of Level 2 partially automated vehicles were trialled along a section of Melbourne's Eastlink motorway. In the study, the driving performance of each vehicle's automated function was noted, as well as their interaction with the surrounding infrastructure, and traffic.

The key finding was that the life-saving technology in these vehicles can only be maximised with appropriate road surfaces, signage and line markings.



## NACOE R47 – MEASURING EXCESSIVE CONGESTION COSTS FOR FREEWAYS

Congestion cost is an important factor for major road project appraisals. Emerging data sources are becoming more available for congestion cost estimation.

The study successfully extended the ARRB congestion cost model to enable the use of emerging or alternative data sources (i.e. probe and Bluetooth) to estimate excessive congestion cost.

This enables road agencies to conduct more accurate project appraisal, and to provide improved decision-making in the implementation of a congestion response plan. Ultimately road users are benefited by reducing excessive delays.

# CASE STUDIES

## APPLICATION OF EME2 ASPHALT TECHNOLOGY TO AUSTRALASIA AND GUIDELINE DEVELOPMENT

Our international networks and ability to evaluate overseas innovations identified a viable technology developed in France over two decades – high modulus asphalt. Enrobés à Module Elevé Class 2 (EME2) technology was developed in the early 1990s, and is now used on main roads and airports. Compared to conventional asphalt bases with unmodified binders, EME2 is characterised by high stiffness and durability, providing superior resistance to permanent deformation and good fatigue resistance.

ARRB was involved in the effort to transfer EME2 asphalt technology to Australasia. Two research projects were commissioned to facilitate the technology transfer.

Austrroads engaged ARRB to developing mix design guidelines, setting appropriate performance criteria using Australian test methods.

Queensland Department of Transport and Main Roads (TMR) invested in the development of guidelines for the structural design of pavements containing EME2. A key characteristic of this effort is the involvement of, and in-kind contributions from, various industry partners including the Brisbane City Council, by the use of one of its roads which allowed for the evaluation of pavement design concepts and in situ performance of EME2. ARRB delivered the pavement design, the site setup and is conducting the ongoing performance monitoring.

Australasia is now preparing for implementation of this technology on its road network. It is expected that the reduction in pavement thickness that can be achieved with EME2 will lead to more cost-effective pavement designs and more sustainable use of scarce pavement materials.

## ASSESSING THE TRANSPORT NETWORK REHABILITATION PROGRAM (TNRP) FLOOD REPAIR WORKS

Between 2010 and 2013, Queensland experienced widespread flooding over most of its road network. Repairs cost \$6.4 Bn and reconstruction was facilitated by the Transport Network Reconstruction Program (TNRP).

The research project aimed to identify best practices and lessons learnt from the TNRP, particularly in pavement design and repair techniques. Given the scale of the area affected, considerable variations of the pavement works undertaken and the construction techniques adopted in each region, the TNRP research project provided TMR an excellent opportunity to identify optimal reconstruction practices to manage extreme weather events.

This project combined the most recent TMR's ARMIS condition data and information from ARRB's Intelligent Pavement Assessment Vehicle (iPAve) surveys to assess the condition of the TNRP network. Field and laboratory testing were also conducted at selected sites to gather additional data. The large pool of data provided a comprehensive tool for evaluation of the TNRP pavements.

The findings from this project will be used to optimise the design guidelines for future flood recovery works.





# ARRB ALLIANCES

**NRSPP**  
NATIONAL ROAD SAFETY

**PARTNERSHIP  
PROGRAM**

## NRSPP

The National Road Safety Partnership Program (NRSPP) offers a collaborative network to support Australian businesses in developing a positive road safety culture. It's about saving lives without the red tape.

Partners within the NRSPP recognise road safety as a shared advantage. Collaboration will not only increase productivity but save lives.

The NRSPP was launched by Prince Michael of Kent at the UN Decade for Action Road Safety Forum, Melbourne 2014. ARRB was selected by the industry-led steering committee as the manager and deliverer of the program.

The program aims to help businesses and organisations create a positive road safety culture both internally and externally.



**Australia &  
New Zealand**  
*Driverless Vehicle  
Initiative*

## ADVI

Self-driving vehicles will make driving easier, allow people to be more productive and offer greater mobility to a wider range of people than ever before. They will also help improve road safety, reduce emissions, and ease congestion. As a result, self-driving vehicles will provide significant economic, environmental and social benefits, including improving social inclusion.

The key thrust of the Australia & New Zealand Driverless Vehicle (ADVI) Initiative is to build momentum by rapidly exploring the impacts and requirements of this new technology in a truly Australasian context. ADVI make recommendations on ways to safely and successfully facilitate automated vehicles onto Australasian roads.

ADVI raise public awareness of the technologies through live demonstrations involving government, industry, research entities and the media. The intention is to provide an avenue to showcase the involvement and contributions of collaborating partners involved in this important initiative.



### NACOE

The National Asset Centre of Excellence (NACOE) is an initiative of the Queensland Department of Transport and Main Roads and ARRB, which is broadening to include partnerships with industry.

NACOE focuses on applied research driving innovation to achieve savings through best practice. While delivering all disciplines of road engineering, the primary focus of the centre is pavements, structures and asset management.

It provides for a stronger commitment to building professional capability and achieving savings in total road expenditure through strategically targeted research. Through a multi-year funded resourced program, NACOE will drive efficiency through a focus on road infrastructure-related research.

NACOE projects are annually sought, submitted, managed and outcomes implemented, with significant economic and financial benefits achieved.



### WARRIP

WARRIP – the Western Australian Road Research and Innovation Program - is a joint initiative between Main Roads Western Australia (MRWA) and ARRB, reflecting a strategic commitment to research and development, technology transfer and capability development.

WARRIP's key focus is on pavements, bituminous surfacings, asset management and structures. It aims to produce a higher rate of return through targeted research, significantly increase the capability and effectiveness of specialist technical areas and deliver excellence and better value from every dollar spent.

This collaborative research program provides a strong commitment to building professional capability and the implementation of innovative practices that achieve significant savings for MRWA in total road expenditure.

### TIPES

The Transport Infrastructure Product Evaluation Scheme (TIPES) is a process aimed at providing an independent, fit-for-purpose assessment of innovative road construction products. TIPES is intended for the evaluation of products that fall outside the scope of established standards and specifications. TIPES is a national scheme endorsed by all Australian State and Territory road agencies, as well as the Institute of Public Works Engineering Australasia (IPWEA), the Queensland Local Roads Alliance and the Western Australian Local Government Association (WALGA).





Australian Government  
Department of Infrastructure  
and Regional Development



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