

The image features a solid blue background with a pattern of white dots. Some dots are arranged in vertical lines, while others form curved, wavy patterns that sweep across the lower right portion of the frame. In the lower-left area, the word "arto" is written in a white, lowercase, sans-serif font. Below the logo, a light blue shield-shaped graphic contains the text "ANNUAL REPORT 2017/18" in a bold, blue, uppercase, sans-serif font.

arto

**ANNUAL
REPORT
2017/18**

CHAIRMAN'S REPORT

Building and maintaining road infrastructure has traditionally been a complex challenge requiring significant capital investment, over a time horizon measured in decades, not years. Today, with the transport world experiencing extraordinary technological transformation, that challenge has become exponentially more complex. How do we make the right investment decisions today to support all known and unknown future road-use and vehicle technologies twenty, fifty, even one hundred years hence?

ARRB brings the brightest transport minds together to inform our policy makers, while exporting cutting-edge research to influence transport solutions around the globe. The Australian Road Research Board has a three-pronged approach to building a smart, connected road network that will safely support future technological innovation.

First, develop home-grown knowledge and expertise to identify and overcome the challenges we'll face in future decades.

Second, analyse and interpret global trends, continually applying them to the Australian and New Zealand context.

Finally, collaborate with the best researchers, practitioners and organisations in Australia, New Zealand and across the globe.

It is with the support of the Australian Federal Government and the states that we can move forward with the ARRB plan and vision of making our cities smarter, cleaner, greener, safer, more efficient and more productive. 2018 was a year of shaping our transport future together and repositioning ARRB as the National Transport Research Organisation, by engaging with TISOC – the Transport and Infrastructure Senior Officers Committee – in which CEO Michael Caltabiano and I were told:

'TISOC members were impressed by the progress that has been made to transform ARRB into what is now a high-performing and well-respected organisation.'

ARRB also collaborates closely with road agencies to deliver best practice research and another milestone received was a renewed five-year deal for NACoE in Queensland – the National Asset Centre of Excellence (NACoE) is an initiative of the Queensland Department of Transport and Main Roads and ARRB.

The Australian Road Research Board has a strong heritage supporting and delivering high quality applied research for our members and for Australia and New Zealand. Applied research and coordination with policy makers is making better, smarter and safer road transport a reality. ARRB is focused on building the knowledge to identify and overcome the challenges we'll face in future decades.





CHIEF EXECUTIVE OFFICER REPORT

Transport challenges are multi-disciplinary and require both deep and wide skill sets to solve. At ARRB we have invested in the best people with both national and international reputations to collaborate to solve the next generation of transport challenges.

ARRB – your National Transport Research Organisation - has transformed itself into a truly dynamic and modern organisation. Our core businesses are once again enlivened with a focus on innovation and collaboration. We have become a far more connected organisation creating knowledge for tomorrow's transport challenges and solutions for today. It means we are providing service for our members in a far more meaningful way as they face the ever-changing landscape of infrastructure and transport across Australia and New Zealand.

The ongoing focus for our Members and for Government is the user experience of our road networks and the future of them interacting with autonomous vehicles (AV). The formalisation of the Office of Future Transport Technology led by the Hon. Roland Pittar is testament that the future of transport is technology. ARRB is well placed to assist with this disruptive change to our industry and is already working hard to bring Australia and New Zealand to the forefront of the AV revolution.

Beyond the autonomous future, ARRB is ensuring that all sectors of transport and infrastructure are growing. Our laboratories have been busy assisting the NACoE project, commissioned by the Queensland Transport and Main Roads Department, to bring EME2 to their roads saving government more than \$100,000 per lane kilometre which is returned back into the budget to help grow the state infrastructure.

ARRB has long championed the application of ground tyre rubber in asphalt and seals to provide a high value application of recycled material. The scope for crumb rubber is growing rapidly as the economic and environmental benefits are being recorded and rewarded.

ARRB's data collection continues to grow across both Australia and New Zealand and with the introduction this year of the Advanced Technology Labs (ATLab) and our collaboration with industry bodies to share the data, the benefits for our local communities are beginning to take hold in the form of better public and self-transport routes, as well as providing information to the necessary local road authorities on the ways that the infrastructure is currently being used, so they can better shape it for the future.

All these wins are being made possible by staff that are transformative, collaborative, deliver their projects with energy and passion and maintain their integrity to ensure that Australia and New Zealand's communities" are benefiting from the research being done to bring them the roads of the future.

I would like to thank my fellow Directors, ARRB's dedicated staff and their inspiring leadership for the continuous growth ARRB is embarking on as the National Transport Research Organisation.

CHIEF FINANCIAL OFFICER REPORT

During 2017 and 2018 our balance sheet saw the largest transformation in the history of ARRB. Like many other organisations ARRB began a journey away from the tangible assets to the non-tangible. The sale of the property at Vermont South and the equipment manufacturing group closed a significant chapter in the ARRB journey.

The move from Vermont South sees a tidal leap in transforming our organisation from a 50-year cocoon to a modern, dynamic and vibrant company in the hub of inner Melbourne. The successful sale of the equipment business is a testament to those past and present who had the vision to establish the market leading equipment business. The maturity and commercial aspect of the business meant it was highly suited becoming its own standalone entity. ARRB Group will retain strong operational links with the new company.

Our brand mirrors this modern rebirth and changes in our operational systems have affirmed our relevance within the transport research industry. We are communicating our news, projects, research and collaboration with a new energy. Looking forward there are plenty of external challenges for the transport sector. ARRB is changing its mode of operation to be ready to lead the changing ecosystem. With an agile balance sheet to reflect a modern working environment 2018/19 will bring a focus to the profit and loss. The projects we deliver are the very essence of ARRB's being.

Because what matters is that we continue to have a positive impact on how Australians use transport corridors. The road is fast becoming a public space that will be used in a different way than previously seen; a shared mobility corridor available for all of society to use. Transforming our focus and changing to deliver projects in a rapidly changing technological environment whilst remaining financially sustainable requires agility and discipline.

In summary 2017/18 closes with ARRB well positioned to move into the future. The streamlining of the balance sheet and shedding of our past leaves us positioned for a technology disruptive future, allowing new ideas and new ways of delivering for Australians to flourish.

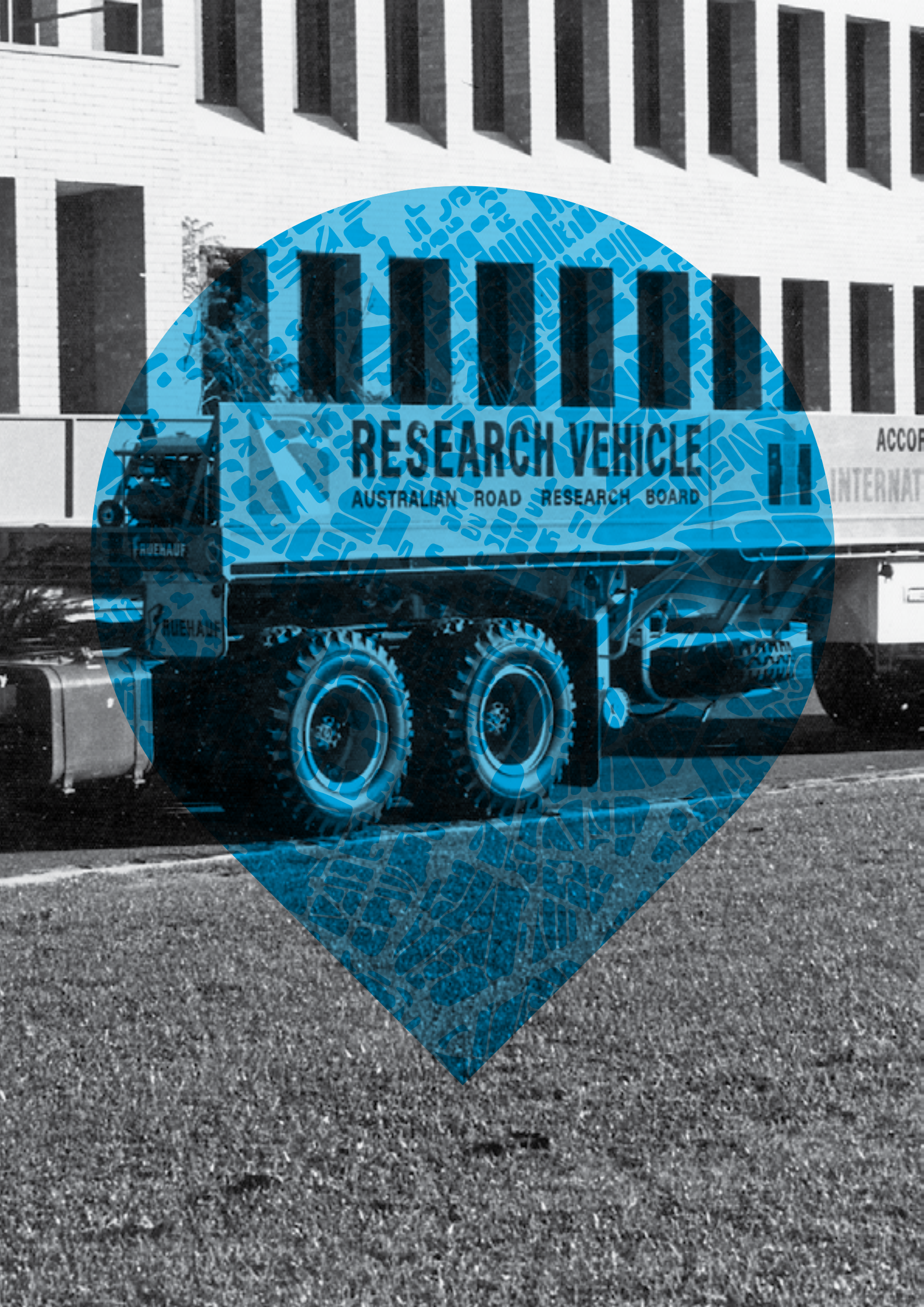
Becoming a world-class investment organisation is the first of ARRB's 3 strategic ambitions. That has meant an organisational transformation has been required – living and breathing transformation takes time and needs to be ongoing. During 2017/18 the physical transformation of ARRB made significant progress and this is reflected in the composition of the balance sheet and the financial operating result.

2018/19 will build on the successful transformation and divestment of ARRB's balance sheet. The focus for 2018/19 will be orientated to the external and internal operating environment for ARRB.

Ensuring we expend our energy addressing the transport system of today and of the future is a vital role. Undertaking and completing research projects in an ever increasingly fast moving world is a complex and challenging task. ARRB starts 2018/19 positioned to fulfil this role for Australia in the transport sector.

And finally, there are the two emerging opportunities of sustainable and new technologies which should become significant growth areas for ARRB.

Being a world-class investment means strong free cash flow, high returns on investment and lower debt. All of these add up to a financial strength and achieving the best returns for all road agencies and stakeholders. Sustaining that over time should result in ARRB becoming and remaining a vital organisation in the transport research sector.



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ARRB is the source of independent expert transport knowledge, advising key decision makers on our nation's most important challenges.

1. OUR JOURNEY SO FAR...

A strong heritage supporting and delivering high quality applied research for Australian and New Zealand state road agencies (our Members) and for the community.

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.

One such step to accomplishing this is through the unification of all ARRB's businesses and services under the one ARRB brand, and through the formation of multi-disciplinary teams with highly evolved skills. In doing so, valued clients will have access to expanded specialist resources company-wide and will benefit from the complete ARRB experience.

ARRB's team analyses and interprets global research and applies it to the Australian and New Zealand context. 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 supports better opportunities to help shape Australia's transport future.

We are preparing Australia and New Zealand for a future of smart connected roads that can communicate with vehicles and drivers about safety hazards while generating clean power to fuel our cities. A freight industry enabled by autonomous heavy vehicles platooning along our highways to increase efficiency and lower the cost of products for consumers.

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 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.

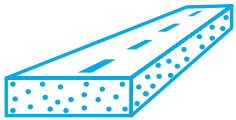
NEXT GENERATION ASSET MANAGEMENT

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 & 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

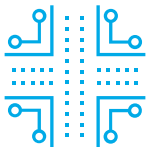


Advanced Mobility Technologies

NEXT GENERATION ASSET MANAGEMENT



Data Collection



Infrastructure Performance



Intelligent Asset Management



Transport Economics

OUR APPROACH

Building and maintaining road infrastructure has traditionally been a complex challenge requiring significant capital investment, over a time horizon measured in decades, not years.

Today, with the transport world experiencing extraordinary technological transformation, that challenge has become exponentially more complex. How do we make the right investment decisions today to support all known and unknown future road-use cases and vehicle technologies twenty, fifty, even one hundred years hence?

At the ARRB we believe in a three-pronged approach to building a smart, connected road network that will support future technological innovation.

1

First, analyse and interpret global trends, continually applying them to the Australian and New Zealand context.

Second, develop home-grown knowledge and expertise to identify and overcome the challenges we'll face in future decades, making our cities smarter, cleaner, greener, safer, more efficient and more productive.

2

Finally, collaborate with the best researchers, practitioners and organisations in Australia, New Zealand and across the globe.

3

2. STRENGTH OF GOVERNANCE (BOARD AND STRUCTURE)

ARRB is governed by a board of directors, all of whom have had numerous years within the transport sector and who have contributed significantly to the advancement of the sector within Australia and New Zealand.

We are proud to have on our board:



PETER DUNCAN AM - BOARD CHAIRMAN

Peter is an experienced non-executive director and has an advisory business dealing in management, leadership, strategic advice and infrastructure delivery. He is the chair of the Infrastol group and a director of the Westpac Rescue Helicopter Service.

In August 2017 Peter was appointed as a Commissioner on the NSW Independent Planning Commission. He has also been a member of the Advisory Board of the Office of Projects Victoria since 2016.

Prior to moving from his 40-year public service career in 2016, he was Chief Executive of Roads and Maritime Services in NSW and deputy Director General of the NSW Department of Premier and Cabinet.



NEIL SCALES OBE - BOARD MEMBER

Neil Scales OBE is currently the Director-General for the Department of Transport and Main Roads, Queensland. He was previously the Chief Executive and Director-General of Merseytravel, the transport authority for Merseyside in the north of England. Mr Scales has held executive roles with transport and engineering companies and has consultancy experience with several agencies, including the World Bank and the European Commission. Mr Scales is the current Chairman of Austroads.



KEVIN REID - BOARD MEMBER

Kevin Reid is currently the National Manager Network Outcomes at the New Zealand Transport Agency (NZTA). He has over 25 years of experience in the planning, design, construction, maintenance and operation of highway networks in New Zealand, the United Kingdom and the Caribbean.



DR ANN TURNER - BOARD MEMBER

Ann is the Principal of Ann Turner Consultants Pty Ltd, a private consultancy in management and strategic planning. For 15 years Ann has worked as an independent consultant developing strategies and management plans for road and rail and a range of other government activities in Australia. She managed Strategic Planning at the RTA and managed the road program for NSW designing and implementing the 3x3 road program, the reclassification of roads and the review of local government administration of the road system.



STEPHEN TROUGHTON - BOARD MEMBER

Stephen Troughton is currently the Deputy Secretary, Infrastructure and Services for Transport for NSW. Stephen has experience managing businesses in Australia, the United Kingdom (UK) and the Middle East with extensive technical expertise in major infrastructure and property. He is a Fellow of Engineers Australia and a Graduate of the Australian Institute of Company Directors (AICD).



PETER WORONZOW - BOARD MEMBER

Peter Woronzow is currently the Managing Director of Main Roads Western Australia, having previously been the Executive Director, Financial and Commercial Services for the organisation. He has over 35 years in the transport industry. As Chair of the Budget Committee and Chief Finance Officer, Peter oversees the sustained financial prosperity of the Main Roads Western Australia. He is a member of CPA Australia and is also a board member of the Gateway WA Alliance.

ABOUT ARRB

3. LEADERSHIP TEAM

ARRB has restructured in the past two years and is lead by a team of four highly regarded industry veterans who have steered the change management within the company for ARRB to lead the charge on the National Transport Research Plan.



MICHAEL CALTABIANO CHIEF EXECUTIVE OFFICER

Michael has over 25 years' experience in the transport industry with previous positions placing him in charge of the Australian Asphalt Pavement Association (AAPA) and as the director-general of the Queensland Department of Transport and Main Roads. He has extensive knowledge not only from an engineer's viewpoint but from a change management perspective too and is leading the charge in shaping our transport future.



DR RICHARD YEO CHIEF OPERATIONS OFFICER

Richard has a long and prestigious history both in the transport sector and within ARRB. He is very capable technically and in management having demonstrated leadership in previous roles at ARRB, VicRoads and most recently whilst on secondment to Austroads as Program Manager, Assets.



MS KATE THOMSON
CHIEF FINANCIAL OFFICER &
COMPANY SECRETARY

Kate is responsible for driving the strategy of financial sustainability, ensuring that all future capital requirements can be met and operating expenditure is sustainable. Kate is also responsible for setting the Business Enablers strategy and delivering business solutions. With over 15 years' experience in Finance across New Zealand and Australia, Kate is well equipped to assist in leading ARRB into shaping the transport future across all sectors.



DR MICHAEL SHACKLETON
CHIEF RESEARCH OFFICER

Mike has a long and successful history in the transport sector from across South Africa and Australia. He has held positions with ARRB from Research Operations Manager to Executive Manager of the ARRB Academy. Together with the Research Leaders and technical leadership of the organisation, Mike will act as custodian of the National Transport Research Plan and our research quality standards.



SAMANTHA TAYLOR
STATE TECHNICAL LEADER (VIC/TAS) & NATIONAL
LEADER SUSTAINABILITY & RESILIENCE

A technical leader with experience from across the transport portfolio including freight and logistics, Intelligent Transport Systems, Connected and Autonomous Vehicles (CAVs), transport planning, asset management, traffic engineering, safety and public transport. Samantha has contributed to many strategic and behavioural change projects in research, academia, consulting and government, and understands government challenges, business needs and community drivers.



MATTHEW BERENI
STATE TECHNICAL LEADER (QLD) & NATIONAL
LEADER FUTURE TRANSPORT INFRASTRUCTURE

Matthew is a recognised transport industry leader with more than 15 years of engineering and leadership experience in both the private and public sector through Civil Engineering, Economics, Regulatory and Policy Reform roles. Matthew has a solid track record of hands-on experience in strategic planning, business development, project and product management while maintaining strong technical engineering skill and aptitude.



RITA EXCELL
STATE TECHNICAL LEADER (SA) & STRATEGIC
LEADER FUTURE TRANSPORT TECHNOLOGY

Rita is a qualified Civil Engineer with over 15 years experience in strategic transport planning and road safety. Skilled in management, transportation planning, rail transport, traffic engineering, and strategy. Executive Director of the Australia and New Zealand Driverless Vehicle Initiative (ADVI) representing almost 60 partners and contributing to the safe and successful introduction of automated vehicle technologies into Australia.



FRANCOIS FINETTE
STATE TECHNICAL LEADER (WA) & STRATEGIC
LEADER NEXT GENERATION ASSET MANAGEMENT

Francois has more than 10 years of experience managing and providing engineering support to multiple projects simultaneously. Focused on providing innovative leadership with a strong customer focus on achieving solutions to effectively manage the road network to achieve best value. Researching innovative ways of how the next generation of pavements, surfacings and structures will interface with a digitally connected and motivated world.



DR MICHAEL MOFFATT
STATE TECHNICAL LEADER (NSW) & STRATEGIC
LEADER TRANSPORT SAFETY

Dr Michael Moffatt joined ARRB in 1991 after graduating from the University of Melbourne with a Bachelor of (Civil) Engineering with Honours Degree. He also holds both a Master of Technology (Pavements) Degree and a PhD. He has worked in a variety of areas dealing with both the design and analysis of pavement structures, including the effects of water movements through pavements, the mechanistic design of new and rehabilitated pavements, and the characterisation of pavement materials, including the conduct of various trials using the Accelerated Loading Facility (ALF).



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INTEGRITY

COLLABORATIVE

ENERGY AND PASSION

TRANSFORMATIVE

OUR MISSION

Creating knowledge for tomorrow's transport challenges and solutions for today.

OUR VALUES

Transformative, Collaborative,
Energy and Passion, Integrity

- Transformative**
 We are continuously looking to improve the world around us, moving forward and innovating. The mobility solutions of the future will require adaptable skills, technologies and ideas.
- Collaborative**
 We communicate openly and constructively to deliver world-class research because our people work together and with partnering organisations and clients.
- Energy and Passion**
 We have a passion for good ideas (big and small), for expertise and for helping each other out. Positive energy is created by loving what we do, creating fun and having a 'can and will do' attitude.
- Integrity**
 We offer independent, impartial research, and communicate clearly, honestly and respectfully with each other and we do what is right for our clients, our staff, our industry and our community.

OUR VISION

To help make the world's cities smarter, cleaner, greener, safer, more efficient and productive through intelligent transport solutions.



1. COMPLIANCE & CERTIFICATION

ARRB has a comprehensive compliance management plan and part of that is ensuring that all aspects of our business meet and exceed the certification required in their area.

This is achieved through our integrated management system having certifications within:

Quality Management System, which ARRB achieved accreditation to in 2008 originally and continues to have received the latest ISO 9001:2015 Quality Management System.

Our state-of-the-art **Laboratory** achieved accreditation to ISO/IEC 17025:2005, which ensures that all research, tests and successes coming from the labs are marked with a global recognition.

ARRB also has a strong regard for **Occupational Health and Safety** given the myriad of duties our staff fulfils within any given work day. We achieved accreditation to AS/NZS 4801:2001 Occupational Health and Safety Management Systems and continue to ensure our staff's safety and well-being is at the forefront.

We also have Environmental Management Documentation that is specific to ARRB and our needs as an organisation to ensure we continue to set the pace in helping the transport sector to be cleaner, greener and more efficient, but using ourselves as the test-bed for these goals. The NTRC is self-sustaining with its solar powered roof and has already seen it returning power to the grid.

2. LEARNING & DEVELOPMENT

ARRB has a policy of ensuring its staff are well-informed, well-equipped and well-trained to help lead the challenges we face for the future of transport.

INFORMATION AND TECHNOLOGY INTEGRATION

Moving to the new NTRC in Port Melbourne, staff were opened up to the many benefits of a modern workplace. All staff have been provided with laptops and mobile phones, which allows for a more fluid work environment. Staff are now able to pick up their IT tools and work wherever best fits their needs. Collaboration between various divisions and teams is now done seamlessly. The introduction of a new Client Relations Management (CRM) software system and its integration into numerous other divisions such as Finance and Marketing has seen greater transparency for all. These change management initiatives have been part of the reset of ARRB, bringing together the values of transformation and collaboration.

FUTURE THINKING

Staff are also encouraged to continue their formal studies to achieve their Master's or complete their Doctorates. This opportunity is available to all staff members as each employee has a career path they are looking to achieve and ARRB is here to support them. With access to courses by the Australian Institute of Management, staff are also provided the opportunity to grow their soft-skills in order to create a cohesive working environment for all as we are aware that the management of people and their skills is just as important in ensuring success for the task at hand.

We are proud that our staff are often recognised within the transport sector

We are proud that our staff are often recognised within the transport sector, not only in Australia and New Zealand, but across the globe. Their dedication to their discipline is commended by such peer recognition. We would like to congratulate the following ARRB colleagues for their noted success in 2018.

ARRB held its 2nd Gala Dinner and Awards night at the 28th International ARRB Conference, held in Brisbane this year. **Dr Ronny Kutadinata** won the New Research Talent Award. He is a key member in the Future Transport Technology space and we congratulate him on his peer recognised success.

Our own **Geoff Jameson**, Chief Research Scientist within the Pavement Technology sphere won the Lifetime Research, Development & Implementation Award. Geoff has had a significant impact on the progression of pavements over his 25 and more years in the industry.

Lisa Steinmetz – our Senior Technology Leader in Transport Safety - represented ARRB at the 2018 Australasian Road Safety Conference held in Sydney, received the People's Choice Award for her joint presentation with Chris David from Mildura Rural City Council, on local government road safety. The presentation was on delivering Safe Systems outcomes in Mildura, and importantly Lisa and Chris' joint work offers that community a really positive outcome.

A number of ARRB staff pursued goals this year of completing their Ph.D's. We have a few new doctors in the house.

Dr Blair Turner received his doctorate earlier in the year. Blair is our National Technical Leader in Safe Road Infrastructure. Having worked in the UK and originally from New Zealand, Blair has a definite international view on road safety and we congratulate him on reaching this milestone in his impressive career.

Dr Farhana Ahmed received her doctorate on research which assessed the adaptation of commuter cyclists' day-to-day travel behaviour, particularly in response to changes in weather. Results from the study show that commuter cyclists in different cities had different sensitivities toward changes in weather parameters. Results also reveal that various social and psychological factors, including attitudinal beliefs and the key social groups, impacted commuters' decision to cycle. The findings are used to identify practical suggestions to encourage commuter cycling.

Dr Chenyang Li also completed his doctorate in 2018 with a thesis on the mathematical incorporation around perception and decision-making in single-lane vehicle following, which is a part of driving behaviour and safe systems. It was found that a driver following a different type of vehicle perceived the crash risk to be higher, therefore were more stable and accurate in their headway space.

Our staff are also living our value of collaboration by sharing their knowledge with the future researchers and engineers of the transport sector. **Dr Jeffrey Lee** has recently been given the honour of being appointed as Adjunct Professor in the School of Civil Engineering and Built Environment, Science and Engineering Faculty at the Queensland University of Technology (QUT).

Internationally, ARRB staff have been recognised for their contributions too. **Richard Wix**, received the Road Profile Users' Group Technical Award in recognition of his technical contributions, outstanding presentations and for bringing an international perspective to RPUG. He accepted the award during the RPUG conference awards dinner in South Dakota.





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AUSTRALIA



POPULATION:
23,470,145
(JULY 2018 EST.)

COUNTRY
COMPARISON
TO THE WORLD: 56

ROADWAYS:

Total: 873,573 km
Urban: 145,928 km
Non-urban: 727,645 km (2015)
Country Comparison to the World: 9

GDP (PURCHASING POWER PARITY):

\$1.246 trillion (2017 est.)
\$1.214 trillion (2016 est.)
\$1.185 trillion (2015 est.)

Country Comparison to the World: 20

Note: data are in 2017 US dollars

ROADWAYS:

Total: 94,000 km
Paved: 61,600 km (includes 199 km
of expressways)
Unpaved: 32,400 km (2017)
Country Comparison to the World: 52

GDP (PURCHASING POWER PARITY):

\$188.6 billion (2017 est.)
\$181.1 billion (2016 est.)
\$173.8 billion (2015 est.)

Country Comparison to the world: 68

Note: data are in 2017 US dollars



NEW ZEALAND

POPULATION:
4,545,627
(JULY 2018 EST.)

COUNTRY
COMPARISON
TO THE WORLD: 126



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28TH ARRB CONFERENCE

ARRB held its 28th International Conference in the Brisbane Convention Centre, which saw amazing keynote speakers, the launch of ARRB's new brand, wide-ranging subject matter and a good deal of attention from the media. This year's Conference also represented a milestone, with ARRB re-emerging as Australia's thought leader in road transport infrastructure and technology.

Olympic Gold Medal-winning cyclist Anna Meares opened proceedings with one of the most inspiring keynote addresses many delegates had seen. Sharing her story of hard work, determination and triumph over almost impossible odds, Anna set the scene by highlighting one of the great truths in any high-performance field of human endeavour. No matter how talented and motivated, you cannot achieve your goals alone.

An impressive list of local and international keynote speakers set the agenda and guided over 400 attendees through what it takes to establish lasting, sustainable technological innovation in Australia's largest transportation network carrying almost every Australian, every day.

Randell "Randy" Iwasaki, Executive Director of Contra Costa Transportation Authority in California delivered a reality check for connected, automated vehicles in Australia. Randy shared his experience running America's largest Connected Automated Vehicle (CAV) testing ground, on the decommissioned Concord Naval Base in Contra Costa County, CA (backed by US\$300 million in government and private funding).

Acknowledging the great work being done by scientists and technicians around Australia, Randy called for a coordinated effort across the nation, under the umbrella of an organisation such as the Australia & New Zealand Driverless Vehicles Initiative (ADVI).

Among more than 17 featured speakers, other highlights included Neil Scales OBE, DG, Queensland TMR; Futureye's Managing Director Katherine The-White; Rob Wallis, CEO of the UK's Transport Research Laboratory; and Matthew Rivett, Executive Vice President of innovative US-based car manufacturer Local Motors.

The agenda spanned a broad range of subjects from pavement engineering and intelligent roads to asset data measurement; smart journeys; disruptive technologies, platforms and services; human factors of transport; building road safety; and sustainability and resilience.

The conference this year set the tone for the new and invigorated ARRB and the future of transport.

ARRB HACKATHON

ARRB held its first ever hackathon in the weekend leading up to the 28th ARRB Conference. Together with the Advanced Technology Lab (ATLab) the 2-day workshop enabled participants to work together to problem-solve and provide solutions to transport challenges.

Sponsored by HERE, Queensland Department of Transport and Main Roads, Scania and ATLab, the event produced some real-world solutions. The winners were: 1st Place, Rodney Persky, Team A2BFreeFlow, who developed a Network Resilience routing application. The app re-routes a journey to find the shortest exit path from a region affected by a natural disaster such as bushfires or flooding. The application can guide the user safely out of a high-risk region avoiding closed roads and any broken links in the road network.

In 2nd place were Sandra and Peter Arato, Team Arato, who developed a live safe cycling routes application. Their solution utilised a machine learning algorithm that combined 8 road characteristics linked to cyclist safety including crash data, roughness and weather. This information was combined into a simple green-yellow-red risk score that could be displayed on the handlebars of a bicycle integrated with the bikehalo system.

And 3rd place went to Pedro and Brandon, who created an open-source QGIS plugin for users to download and display real-time Queensland open data feeds in an easy-to-use format. Intersection flows, public transport vehicle locations, road alerts, and CityCycle availability APIs can be accessed using the tool.

The hackathon was definitely something that ARRB will be facilitating again as it helps us all think outside the box and collaborate on our future transport experiences.

SURF SYMPOSIUM

On behalf of the World Road Association (PIARC), the Australian Road Research Board (ARRB) hosted the 8th Symposium on Pavement Surface Characteristics (SURF2018) held at the Brisbane Convention Centre.

The symposium was a great success with an attendance of over 150 delegates from 20 countries, continuing on from the successful 28th ARRB International Conference. The program included almost 40 session presentations which highlighted various aspects of the symposium's theme 'Vehicle to road connectivity'. Insightful presentations from our plenary speakers and an entertaining keynote address by Dr John Ferris provided an in-depth perspective into surface characteristics and their measurement from around the globe. Representatives from the tyre industry also provided a look into the pavement surface from the tyre's point of view.

One of the highlights of the Symposium was an interview with Australian motoring legend, Allan Moffat, and Peter Boylan, who discussed the importance of safety and the interaction between the pavement surface and tyres from the point of view of a racing car driver. The symposium concluded with a lively panel discussion on the measurement of pavement surface characteristics in the future which generated significant audience participation.

INTERNATIONAL ADVI SUMMIT

The amazing array of technology and promise within the driverless vehicle space went on show to more than 200 delegates in Adelaide at ADVI's showpiece event for 2018.

The 3rd International Driverless Vehicle Summit at the Adelaide Convention Centre included world-leading speakers, a strong line-up of exhibitors, and a visit from Deputy Prime Minister and Federal Minister for Transport Michael McCormack.

SA Transport Minister Stephan Knoll was among the speakers at IDVS3, and the Deputy PM and guests were treated to an array of the latest in driverless vehicle technology. Roland Pittar, the newly announced head of the Office of Future Transport Technology was also in attendance and enlightened the plenary as to what the Office saw happening in Australia's transport technology.

Exhibitors included Volvo, Cohda Wireless who showed off their V2X non line of sight technology, driverless shuttles from Aurigo and Navya, and SAGE Automation's smart transit station Matilda.

ARRB — your National Transport Research Organisation — was also an exhibitor and supporting partner.



STATE-OF- THE-ART LABS

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 that is 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.

ARRB 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.

SALES OF SYSTEMS & CONTINUING LINKS

In September 2017, the sale of ARRB's equipment assembly and software development business officially took place.

ARRB delivers solutions to future challenges as well as the everyday problems, by utilising next generation smart devices to assess road pavement performance. ARRB has been extremely successful in the development of world-leading road information collection services that will now go global as the VNA Group takes on the ARRB equipment assembly and software development arm into a new company to be a truly global entity.

After a public expression of interest process and a detailed negotiation phase, the successful purchase was made by VNA Group, one of South Africa's leading built environment solutions companies. The sale also included the ARRB United States operation (AGI) and the operational plant and equipment in the US.

"For ARRB this means we will continue to own and operate our road condition data collection services for Members in Australia and New Zealand, while the new company will provide support to ARRB by way of vehicle maintenance and software upgrades," ARRB CEO Michael Caltabiano said.

"ARRB will continue to be the source of excellence in service to road agencies across Australia and New Zealand and the travelling public, creating the knowledge for tomorrow's transport challenges and solutions for today's problems," Mr Caltabiano said.

VNA Group has been a longstanding client of ARRB and has exclusively used ARRB equipment in its business operations. VNA Group is also an exclusive distributor and supplier of ARRB equipment in South Africa. The close relationship was a natural fit for the new business to gain an optimal start, enabling it to grow into a truly global supplier of road performance testing devices.

The new business is named "Automated Road Rehabilitation Business Systems Pty Ltd" (operating in Australia and New Zealand), of which VNA Group is the parent company. ARRB will be the exclusive distributor of the new company's products and services in Australia and New Zealand and the strong links between the two entities will continue to grow.

REBRAND

With all the changes at ARRB a rebrand was definitely needed and the leadership knew this would assist not only the industry in seeing the change in ARRB, but also help the staff feel reinvigorated in the process.

We needed a new look that would match our vision of changing the future of transport and it had to be revealed at the 28th International ARRB Conference, a mere three months away at the time. Given that this was an extremely short lead-time for such a momentous project, the assistance of Davidson Branding, a leading brand and communications agency, was sought. Together with the leadership of our own Knowledge Hub team, they held workshops with a cross section of staff and did surveys with a number of key clients to ensure the new brand brought across the values identified of collaboration, transformation, energy & passion and integrity. All of this with a modern look and twist that would stand the test of time.

ARRB's new brand boldly affirms our relevance within the transport research industry. Our logo now visually communicates a modern, connected and dynamic organisation and reaffirms ARRB's status as the leading provider of road research. ARRB will continue to shape Australia's transport future and our branding now reinforces our commitment to delivering a connected and adaptable mobility solutions for the community.

The project was a huge success and won Gold at the prestigious Sydney Design Show in the Graphic Design - Illustration and Type section.

QUEENSLAND OFFICE IN CREATIVE HUB OF BRISBANE

ARRB's stunning new office in Fortitude Valley, Brisbane was opened by the Queensland Department of Transport and Main Roads Director-General, Mr Neil Scales OBE. As distinguished guests enjoyed the evening of celebrations, Mr Matthew Bereni, Queensland State Technical Leader, also made an address and took attendees on a tour of the state-of-the-art building.

The new office space has been customised to the ARRB team to encourage collaboration and innovation. The open-plan layout includes communal kitchen facilities, games and library area, breakout modern meeting rooms and a sizable boardroom. Healthy things grow and it is exciting to see our office space facilitating our growing team.

"This bright open atmosphere allows more opportunity for collaboration, as well as cross-pollination of ideas. We are proud to reside here and look forward to seeing everyone creatively flourish in this vibrant space," Mr Bereni said.

VICTORIAN OFFICE MOVES TO THE TECHNOLOGY HUB OF AUSTRALIA

ARRB's Victorian offices moved from their longtime home in Melbourne's eastern suburbs which had been in operation for 40+ years. It was time to move to the future infrastructure and technology hub of Australia, Fishermans Bend in Port Melbourne.

With the sale of the land in Vermont South, ARRB was able to do a purpose built fitout to its new premises, creating a large collaborative space that includes visual and easy access to its world-class high-performance labs, truly opening up the space for transformation.

Deputy Prime Minister Hon. Michael McCormack officially opened ARRB's new national headquarters - to be known as the National Transport Research Centre - in front of more than 250 guests at Port Melbourne on September 5, 2018.

The Hon Michael McCormack, who is also the Federal Minister for Infrastructure and Transport and Regional Development, paid tribute to ARRB's work as the National Transport Research Organisation, which will be furthered by the state-of-the-art research facility.

"Our transport future is upon us now," Mr McCormack said.

"The George Jetson philosophy and visions of the future are happening right before us, and you at ARRB are front and centre of that.

"This facility is going to be front and centre of everything our nation is relying on (in roads and transport) with your world-class facilities."

ARRB has already hosted many other organisations, including the NTC, AAPA, IPWEA and various other entities, as they presented workshops to staff and clients. The space at the NTRC is proving to be an asset to all in the transport community as they come through and collaborate on the future of transport.



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The National Interest Services knowledge connection

The National Interest Services (NIS) program funds the provision of land transport information services in the national interest. NIS works with, and through, road agency libraries to deliver national land transport outcomes which would not be possible on an individual basis.

The program provides structured and systematic access to authoritative land transport knowledge. Curated open access databases, the ARRB Knowledge Base and Rail Knowledge Bank support the decision-making needs of the Australian land transport sector. ARRB also provides records to TRID, the free international transport database curated by the US Transportation Research Board.

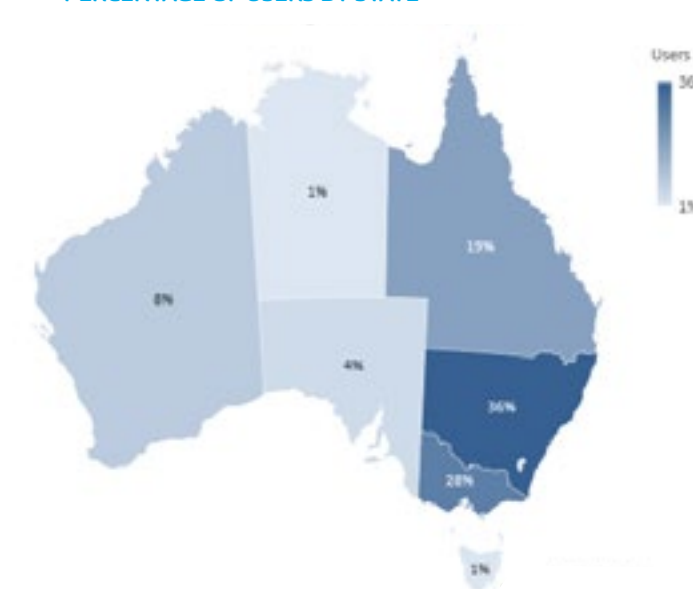
NIS fosters networks of information professionals through chairing the Transinfo network of Australian and New Zealand transport-related libraries including academia, government and the private sector. It is also a part of the network of international libraries which collaborate under the International Transport Forum/OECD's International Transport Research Documentation (ITRD) program. These contact points maintain access to approximately 100 transport-related libraries across Australasia and internationally.

NIS is funded by the federal, state and territory road and transport agencies.

ARRB Knowledge Base and Rail Knowledge Bank

- hold over 24,000 records
- 304,238 visits in Australia (an increase from 40,400 visits in 2016/17)
- 100,000+ documents viewed and downloads in Australia (an increase from 78,000 in 2016/17)
- 50% of users are in Australia, with the greatest percentage coming from the most highly populated states in Australia accounting for 83% of usage

PERCENTAGE OF USERS BY STATE



Eastlink Trials of driverless vehicles are being undertaken

Trials of driverless vehicles are being undertaken on Melbourne's EastLink to test the compatibility of the existing freeway with some of the latest vehicles on our roads. The trials are being conducted by ConnectEast in partnership with ARRB, VicRoads, La Trobe University and RACV.

ConnectEast received a Special Commendation award from the Australia & New Zealand Driverless Vehicle Initiative (ADVI) for these trials of automated vehicle technologies.

The key findings so far from the report produced by the trials have been that better road surfaces, signage and line markings are critical to ensuring advanced safety features such as Lane Keeping Assist and Adaptive Cruise Control in new cars can save lives.

ARRB says the advanced safety features found in new semi-automated vehicles will potentially save lives by reducing the chance of cars running off-road, driver fatigue by taking away repetitive tasks, and rear end accidents in traffic jams.

But ARRB says the life-saving technology in these vehicles will only work to its maximum potential with proper road surfaces, signage and line markings.

ARRB, which has produced the report in collaboration with toll road owner ConnectEast for VicRoads, says well maintained roads are critical for predictability.

"Current Level 2 (semi-automated vehicle) technology has a need for high quality lane markings with good visibility in all lighting, minimising of ghost markings, sign technology considerations in respect of refresh rates and readability of LED signs as well as position," the report says.

ARRB tested 13 vehicles and their advanced safety features over the period of a month on Victoria's privately-owned Eastlink toll road.

Vehicles tested included Mazda, BMW, Audi, Hyundai, Volkswagen, Honda, Mercedes, Volvo, Mitsubishi, Lexus and Tesla.

The advanced safety features found in these cars will be the basis for the driverless vehicles expected on our roads soon.



Now in its fifth year, NACoE is a partnership between ARRB and Queensland's Department of Transport and Main Roads (TMR)

The National Asset Centre of Excellence (NACoE) was established to improve the specialist capability and capacity of both TMR and ARRB through a sustained, collaborative program of challenging projects which unlock innovation and deliver superior technology and road transport solutions.

The program is diverse with a strong focus on pavements, asset management and structures research. It targets international best practice, providing guidance to reduce excessive conservatism and allow the use of innovative materials, and translating new knowledge into best practice.

The major developments include:

- Savings and performance: EME2 (tested at the ARRB Labs)
- Sustainability: Crumb rubber modified binder
- Durability: Foamed bitumen stabilisation
- Benefits in excess of the cost

The program has been successfully renewed for the 2019-2024 period under a new agreement between ARRB and TMR.

The research program covers the following key discipline areas:

- Pavements
- Asset management
- Structures
- Others:
 - Network Operations
 - Road Safety
 - Heavy Vehicle Management
 - Sustainability

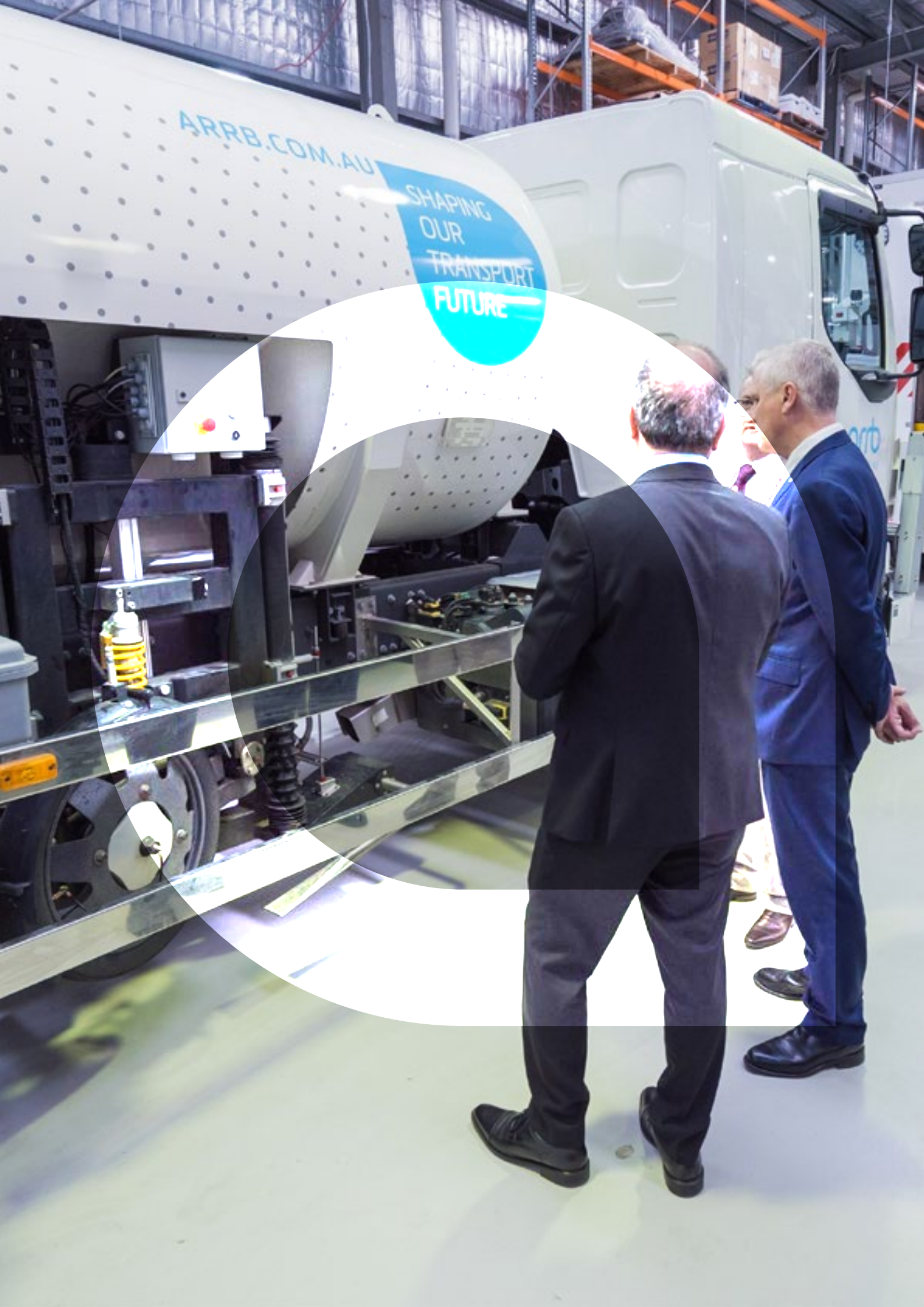
ARRB's iPAVe is the first fully integrated road surface and sub-surface condition assessment system in the world

ARRB's iPAVe is fitted with the Hawkeye suite of survey equipment, making it the first fully integrated road surface and sub-surface condition assessment system in the world. It was commissioned to run the roads in rural Western Australia to get a clear indication of the infrastructure conditions.

The high accuracy and resolution of the iPAVe enables engineers to pin-point areas where the pavement may be subject to failure. Data provided includes continuous pavement deflection profiles, from which bearing capacity indices can be derived and pavement fatigue estimated.

- Collects pavement condition and structural parameters in one pass
- Ability to operate at traffic speed
- Increased operator and road user safety
- More data measurements than traditional methods (i.e. FWD)
- More cost efficient as no traffic control is required
- More flexibility in survey planning and network coverage





The iSSAVe, one of a kind skid resistance technology

With 50% of urban crashes occurring at intersections, and a high percentage of rural crashes involving cars leaving the road, discovering roads where skid resistance should be improved is vital.

"ARRB's Intelligent Safe Surface Assessment Vehicle (iSSAVe) is a unique tool that can be used to determine where High Friction Surface Treatments may be beneficial," said Richard Wix, ARRB Principal Professional, Strategic Enablers Group.

"The iSSAVe measures skid resistance at the same time it collects asset imagery and other safety related parameters such as road geometry, texture, roughness and rutting.

"Local government authorities can ask ARRB to measure the condition of their road network with the iSSAVe, and we can determine a prioritised list of sites which could benefit from High Friction Surface Treatments."

Having the only one of its kind in the southern hemisphere, ARRB is uniquely positioned to not only gather the data with the iSSAVe, but then to interpret it through our data-collection division, Advanced Technologies Lab, and our laboratories, providing our clients with a true 360 of the information and what they can do with it going forward.

ARRB Research Report Completion after a great 23 years

After a rigorous 23 years of research, Dr Tim Martin and Mr Lith Choummanivong have completed their work on predicting the performance of Australia's arterial and sealed local roads. ARR 390 Predicting the Performance of Australia's Arterial and Sealed Local Roads has been published in early 2018.

This research was largely funded by Austroads and the Institute of Public Works Engineering Australasia (IPWEA) as well as contributions from local government councils. The Austroads Asset Task Force (ATF) has also been involved with the work outcomes.

"ARR 390 is about the behaviour of Australian sealed roads based on Australian data. It's not an adaptation of models based on data sourced from somewhere else. ARR 390 is relevant and appropriate for the Australian practitioner," Dr Martin said.

The ARR 390 document's road deterioration and work effects models are currently being used and will continue to be used in future pavement management systems.

"Model development is a time consuming task involving a trial and error method of problem solving. A model cannot be universal and should only be used to predict the future condition of a road section in similar traffic and climatic environments," said Mr Choummanivong.

ARR 390 was referred to in the 3rd edition of the Austroads Guide to Asset Management.

The report enables practitioners to accurately predict road behaviour over its life-cycle, as well as the best approach for maintenance and renewal.





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1. RAVRAT PROJECT

ARRB has been successful in relaunching Restricted Access Vehicle Route Assessment Tool (RAVRAT) in partnership with NHVR, doubling the monthly number of unique users.

ARRB and NHVR will be working closely together in 2019 to deliver further improvements to the integration of RAVRAT into the Road Manager Portal. ARRB will also be investigating the development of Bridge and Swept path assessment modules for RAVRAT, in the near future.

RAVRAT was also presented at the IPWEAQ conference in October and the Regional Roads and Transport Group Assembly, held as part of the LGAQ Annual Conference in October.

2. FUTURE PLATOONING

As the global trucking industry continues to grow, it's attracting significant attention from technology companies—and for good reason. Today, most of all transported cargo moves via trucks, so this segment is ripe for innovation.

By utilizing vehicle-to-vehicle communications and radar-based active braking systems, combined with sophisticated vehicle control algorithms, PlatoonPro (a product developed by Peloton from the US) links pairs of heavy trucks for a connected driving experience that improves aerodynamics, fuel economy (for both lead and follow trucks), and safety.

When trucks are operating in platoon, both drivers control steering at all times and are actively involved in the driving task. The lead truck driver controls the acceleration and braking of their truck as normal. The platooning system controls acceleration and braking of the follow truck by synchronizing it with that of the lead truck. The experience of the follow driver is similar to using commercially available adaptive cruise control.

ARRB, together with a number of truck and data-industry heavyweight companies, is helping to bring this technology to Australia with the support of the Federal Minister (via AUSTRADE), TfNSW and NHVR. ARRB is providing the methodology and reporting to gain government and authority approval.

This collaborative project will bring truck platooning to Australia for safer, more efficient freight movement.



3. ATLAB

The Advanced Technologies Lab's (ATLab) team of engineers, data scientists and programmers enables ARRB to fulfil this role by leveraging its experience, capabilities and people with latest innovative technologies and 'big data'. ATLab's vision is to be the primary source of transport data and knowledge for strategic policy and decision making.

WHAT WE DO

ATLab is the data hub at ARRB centralising our datasets, including survey data from road authorities, open data sources and commercial data from partners such as HERE Technologies. We add value to these datasets by applying algorithms, analytics and visualisations so that decisions can be made based on observable trends and supported by the data.

ATLab is building a world class transport access platform using the latest technologies, building partnerships with data providers and developing software solutions for visualisation, analysis and reporting. The key components of this platform that ATLab will build are:

- effective data visualisation functionality
- analysis and data mining functions
- broader datasets with seamless integration for GIS data
- a national bridge register
- a national crash database and visualisation
- key performance indicators (e.g. road safety risk)
- safe speed data visualisation
- traffic volume data visualisation.

We are adding value to internal projects and building technical capability within the organisation. Examples of ATLab lead services and projects are provided.

SAFE SPEED DATA VISUALISATION

This service collates speed data sourced from HERE and displaying it spatially on the national road network via ARRB's online mapping platform. The data will be presented for use by road managers (state and local government) allowing for the identification of trends and outliers.



UNECE CLIMATE CHANGE IMPACTS AND ADAPTATION FOR TRANSPORT NETWORKS

ATLab contributed to the United Nations Economic Commission of Europe's (UNECE) Climate Change Impacts and Adaptation for Transport Networks and Nodes Group via (skype) workshop. Will Hore-Lacy and Anthony Germanchev from ATLab also provided information on Australia's infrastructure and climate mapping data as well as ARRB's capabilities in this area.

AUTOMATED STEPS IN THE DC PROCESS.

ATLab is working with Data Collection to automate a number of manual processes to reduce time spent on cleaning, and processing data. This included automation for DCPA Qld surveys, currently testing automation and reviewing other improvements for data access and data storage.

4. PARKING

ARRB Parking has continued to provide its expertise across a wide range of projects for various sectors. Local Government was assisted through a series of parking strategies to develop solutions around parking issues in various districts and give policy direction. Recommendations were provided to councils for more effective management of existing parking infrastructures in high demand parking areas.



Raw parking data studies were undertaken for the City of Sydney (Newtown, Camperdown and Darlington Parking Study), TfNSW (Review of Traffic and Queuing at the Seven Hills Car Park) and Bayside Council (Rockdale Town Centre). Data was collected using Licence Plate Recognition technology, which was then used to determine demand, occupancy, compliance and trip origin and destination. Heat and GIS mapping were included as standard in all reports.

Emerging parking technologies for access control, wayfinding, parking guidance, phone apps, web portals and the future-proofing of solutions were investigated and advice provided to a number of clients. ARRB is showcasing some of these emerging technologies at our National Transport Research Centre in Melbourne.

There is an increasing trend towards more efficient use of existing transport infrastructure, which can be seen through the number of feasibility analyses that ARRB provided to leading city councils and the benchmarking and industry best practice that ARRB identified to our clientele as well. As an alternative to expanding parking facilities (which is high cost and represents a poor return on investment), the technique known as travel-demand management is being applied. There is more of an emphasis on the movement of people and goods, rather than motor vehicles, which gives priority to more efficient travel and communication modes (such as walking, cycling, car sharing, public transport and telecommuting). Environmental concerns, rising fuel costs and other factors such as car share and driverless vehicles will impact future parking demands.

Owners are considering repurposing existing parking facilities by converting areas to residential and commercial office space. Local Governments are increasingly looking to reduce required parking ratios to encourage development with less parking. With the use of the emerging technology, the capture of big data is being used by owners and Councils to spread demand and maximise average utilisation and solve the future parking challenges before they arrive. ARRB's parking division is helping to lead this revolution and guide its clients to the best possible outcome for all involved.



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DIRECTORS

The following persons were Directors of ARRB Group Limited (ARRB) during the whole or part of the financial year and up to the date of this report unless otherwise stated:

P. DUNCAN AM - CHAIRMAN

Chair of Governance and Remuneration Committee
Ex – Officio Member of Audit and Risk Management Committee

Cert L&ESD, Grad. Cert Traffic Eng, A.Dip Land. Studies, G.Dip. Mgt., MAICD, FIPAA Member of the Office of Projects Victoria Advisory Board

N. SCALES OBE - DEPUTY CHAIRMAN

Member of the Audit and Risk Management Committee
Director-General Department of Transport and Main Roads, Queensland

MBA, DMS with Distinction, MSc. Control Engineering & Computer Systems, BSc. Engineering NTC Commissioner

Director – Roads Australia

Chairman – Austroads

K. REID - MEMBER OF AUDIT & RISK MANAGEMENT COMMITTEE

BSc (Hons), Civil Engineering, Chartered Engineer, CEng (UK)

Member of the Institution of Civil Engineers, (UK) MICE, Member of the Institution of Professional Engineers NZ (MIPENZ), Member of the Institute of Directors NZ (MIoD), Company Directors Course

Current Employer: NZ Transport Agency (NZTA) – Senior Manager Operational Policy Planning & Performance

S. TROUGHTON - MEMBER OF GOVERNANCE & REMUNERATION COMMITTEE

Fellow of Engineers Australia, Graduate of the Australian Institute of Company Directors – 2014

Chartered Professional Engineer, Member of Engineers Australia, Chartered Engineer (UK), Member of the Institution of Civil Engineers (UK)

Current Employer: TfNSW – Deputy Secretary Infrastructure and Services

DR. A. T. TURNER - MEMBER OF GOVERNANCE & REMUNERATION COMMITTEE

PhD, BEc (Hons), MA (Economic Geography)

CEO and Director, Ann Turner Consultants Pty Ltd Graduate Diploma in Population Studies

Chair, 10000 Friends of Greater Sydney

P. WORONZOW - CHAIR OF THE AUDIT & RISK MANAGEMENT COMMITTEE

Current Employer: Acting Managing Director of MRWA
CPA, MIPAA

Bachelor of Arts (Economics), Graduate Diploma in Public Sector Management Director of Austroads

DIRECTORS INTEREST

No Directors hold shares in the company.

MEETINGS OF DIRECTORS

The number of meetings of the company's Board of Directors held and attended by each Director during the year ended June 2018 was:

NAME OF DIRECTOR	BOARD OF DIRECTORS		AUDIT & RISK MANAGEMENT COMMITTEE		GOVERNANCE & REMUNERATION COMMITTEE	
	ATTENDED	MAXIMUM POSSIBLE	ATTENDED	MAXIMUM POSSIBLE	ATTENDED	MAXIMUM POSSIBLE
P. DUNCAN	5	5		1	1	1
N. Z. SCALES *	5	5		1		
KEVIN REID	3	5	1	1	1	1
STEVE TROUGHTON	5	5			1	1
A. T. TURNER	5	5			1	1
P. WORONZOW	4	5	1	1	1	1

*Julie Mitchell attended as a substitute director for one meeting.

PRINCIPAL ACTIVITIES

During the year the principal activities of the company consisted of:

- a. road transport research on a fee-for-service basis including a set of projects through a collaborative program (NACOE) to deliver superior technology and new transport solutions. The work delivered yielded significant improvements in practices and cost-benefit ratios.
- b. providing information on road and transport matters considered to be in the national interest
- c. delivering research and consulting services to the road and transport industry across Australia and New Zealand to a 98.5% on time and on budget standard, and
- d. researching, developing and the supply of new technology and technical services.

DIVIDENDS

The company Constitution prohibits the declaration or payment of any dividends.

OPERATIONS FOR THE YEAR

The concentration of the year to 30 June 2018 was the implementation of a new strategic direction for the Australian Road Research Board (ARRB).

An extensive and consultative review of the ARRB business model was undertaken by ARRB's Members, this work was completed in early 2017. The review concluded that the original Objects of ARRB remain important and relevant, these should underpin the future ARRB. Further Members unanimously decided that the ARRB of today and the future is that of a 'National Interest' agency meeting the future research needs of Members' whilst creating the knowledge to solve tomorrow's transport challenges.

The above provided a foundation for the input to the development of the strategic direction for next generation ARRB.

Aligning with the above findings the strategic plan for 2017-2020 articulates ARRB's new mission as '**creating knowledge for tomorrow's transport challenges and solutions today**.' And ARRB's vision: '**driving innovation to deliver an adaptable connected future**.'

Outlined below are the four strategic goals developed to enable the achievement of outcomes through planned action:

1. Technology: Harnessing the value of transformative technology.
2. Collaboration and People: Building multi-disciplinary teams with highly evolved skills.
3. Infrastructure: Adaptive and affordable infrastructure for future generations.
4. Resilience and Security: Derive a new understanding of the future transport challenges in a changing world.

The financial result for the year was a small loss prior to the inclusion of significant discontinued activities. This was in line with forecast expectations.

In September 2017 a share sale agreement to sell the equipment sale business and the USA operations, this agreement was successfully concluded in December 2017. The Board's decision to discontinue the more volatile activities of the business is one element of working towards a stronger operating model for a financially enduring and sustainable company. Major capital expenditure occurred as planned.

During the year to June 2018 ARRB completed iPave survey works across Queensland, New South Wale, New Zealand, Tasmania and Western Australia.

The sale of the property at Vermont South and the investment in a future organisation at the new premises in Port Melbourne was a major activity for the year, giving ARRB a new home and head office. The new premises at Port Melbourne include laboratories which will become the national reference laboratories for flexible pavement in Australia.

Finally, we thank the leadership team and all the staff at ARRB for their excellent work, energy and commitment to ARRB in what has been a year of transformation. ARRB staff are proud of their work and have a passion for applying their skills to be part of an adaptable and connected future. We look forward to developing the next generation solutions for Australia's infrastructure needs with and for you.

SIGNIFICANT CHANGES IN THE STATE OF AFFAIRS

There were no significant changes in the state of affairs of the company that occurred during the year not otherwise disclosed in this report or the Consolidated Financial statements.

MATTERS SUBSEQUENT TO THE END OF THE FINANCIAL YEAR

There were no significant events which occurred after the financial year end.

LIKELY DEVELOPMENTS AND EXPECTED RESULTS OF OPERATIONS

At the date of this report, we are not aware of any likely developments in the operations of the company.

ENVIRONMENTAL REGULATION

The company is not subject to any significant environmental regulation in respect of its activities.

OPTIONS

No options in the entity were granted during or since the end of the period.

DIRECTORS’ BENEFITS

During the year no Director has received or become entitled to receive a benefit (other than a remuneration benefit included in note 23 to the Consolidated Financial statements) because of a contract that:

- a. the Director; or
- b. a firm of which the Director is a member; or
- c. an entity in which the Director has a substantial financial interest; has made (during the year ended 30 June 2018 or at any other time) with:

Director’s Report (continued)

- 1. the company; or
- 2. an entity that the company controlled; or
- 3. a body corporate that was related to the company when the contract was made or when the Director received or became entitled to receive the benefit (if any).

INSURANCE OF OFFICERS

During the year, ARRB Group Ltd paid a premium of \$14,000 (ex GST) to insure the Directors and Company Secretaries and the Senior Managers.

The potential liabilities insured are legal costs that may be incurred in defending civil or criminal proceedings that may be brought against the officers in their capacity as officers of the company, and any other payments arising from liabilities incurred by the officers in connection with such proceedings, other than where such liabilities arise out of conduct involving a wilful breach of duty by the officers or the improper use by the officers of their position or of information to gain advantage for themselves or someone else or to cause detriment to the company. It is not possible to apportion the premium between amounts relating to the insurance against legal costs and those relating to other liabilities.

P. Duncan
Chairman

P. Woronzow
Chair of Audit & Risk
Management Committee

Dated: 13 December 2018

PROCEEDINGS ON BEHALF OF THE COMPANY

No person has applied to the Court for leave to bring proceedings on behalf of the company, or to intervene in any proceedings to which the company is a party, for the purpose of taking responsibility on behalf of the company for all or part of those proceedings.

No proceedings have been brought or intervened in on behalf of the company with leave of the Court.

ROUNDING OF AMOUNTS TO NEAREST THOUSAND DOLLARS

The group is an entity to which ASIC Instrument 2016/91 applies and, accordingly, amounts in the financial statements and Directors’ report have been rounded to the nearest thousand dollars.

AUDITOR INDEPENDENCE DECLARATION

A copy of the auditor independence declaration is set out on page 8 of this Financial Report.

AUDITOR

RSM Australia continues in office.

This report has been made in accordance with a resolution of Directors.



RSM Australia Partners
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AUDITOR’S INDEPENDENCE DECLARATION

As lead auditor for the audit of the financial report of ARRB Group Limited for the year ended 30 June 2018, I declare that, to the best of my knowledge and belief, there have been no contraventions of:

- (i) the auditor independence requirements of the Australian professional accounting bodies; and
- (ii) any applicable code of professional conduct in relation to the audit.

RSM AUSTRALIA PARTNERS

P A RANSOM
Partner

Dated: 13 December 2018
Melbourne, Victoria

THE POWER OF BEING UNDERSTOOD
AUDIT | TAX | CONSULTING

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CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND COMPREHENSIVE INCOME

For The Year Ended 30 June 2018

	NOTES	YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
		\$'000	\$'000
REVENUE	2	35,695	18,018
EXPENSES			
Employee Benefits	3	22,086	10,968
Depreciation & Amortisation	3	2,242	1,491
Borrowing	3	125	89
Direct Materials	3	1,725	721
Direct Other	3	4,761	2,320
Rental (relating to operating lease)	3	942	425
Loss on Deconsolidation	3	335	-
Other	3	5,385	1,988
TOTAL EXPENSES		37,601	18,002
OPERATING (DEFICIT) / SURPLUS BEFORE TAX		(1,906)	16
Income Tax	4	-	-
(DEFICIT) / SURPLUS FOR THE YEAR / PERIOD FROM CONTINUING OPERATION		(1,906)	16
DEFICIT FOR THE YEAR / PERIOD FROM DISCONTINUING OPERATION		(73)	(830)
DEFICIT FOR THE YEAR / PERIOD		(1,979)	(814)
OTHER COMPREHENSIVE INCOME			
Items that will not be re-classified to the profit & loss			
- Defined Benefit Superannuation Plan actuarial loss		(113)	-
Items reclassified subsequently to the profit and loss			
Foreign Currency Fluctuation Reserve			
- Exchange (loss) / gain on consolidation		(8)	(51)
- Share of gain of joint venture	12	(28)	-
OTHER COMPREHENSIVE INCOME FOR THE YEAR / PERIOD		(149)	(51)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR / PERIOD		(2,128)	(865)

CONSOLIDATED STATEMENT FINANCIAL POSITION

For The Year Ended 30 June 2018

	NOTES	2018 \$'000	2017 \$'000
CURRENT ASSETS			
Cash & Cash Equivalents	5	986	1,421
Receivables	6	7,004	6,783
Inventories	7	2,709	78
Prepayment	8	431	310
Assets Classified as Held for Sale	9	12,026	14,310
TOTAL CURRENT ASSETS		23,156	22,902
NON-CURRENT ASSETS			
Property, Plant & Equipment	10	16,399	5,879
Intangible Assets	11	190	-
Financial Assets	12	432	374
Receivable	13	889	-
Retirement Benefits Assets	18	530	642
TOTAL NON-CURRENT ASSETS		18,440	29,797
TOTAL CURRENT & NON-CURRENT ASSETS		41,596	29,797
CURRENT LIABILITIES			
Interest Bearing Liabilities	14	10,309	3,096
Trade & Other Payables	15	11,054	2,373
Employee Entitlements	17	2,758	3,065
Other Liabilities	16	4,734	4,268
Liabilities Directly Associated with Assets Classified as Held for Sale	9	-	2,924
TOTAL CURRENT LIABILITIES		28,855	15,726
NON-CURRENT LIABILITIES			
Employee Entitlements	17	335	427
Other Payable	19	889	-
TOTAL CURRENT NON-LIABILITIES		1,224	427
TOTAL LIABILITIES		30,079	16,153
NET ASSETS		11,517	13,644
EQUITY			
Reserves	22	6,538	6,573
Retained Earnings		4,979	7,071
TOTAL EQUITY		11,517	13,644

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

For The Year Ended 30 June 2018

	ASSET REVALUATION RESERVE	FOREIGN CURRENCY FLUCTUATION RESERVE	RETAINED EARNINGS	TOTAL EQUITY
	\$'000	\$'000	\$'000	\$'000
BALANCE AT 1 JANUARY 2017	6,515	109	7,885	14,509
Deficient for the Period	-	-	(814)	(814)
Other Comprehensive Income				
- Share of Gain of IRSM Associate Entity	-	-	-	-
- Exchange Loss on Consolidation	-	(51)	-	(51)
- Actuarial Gain in Defined Benefit Superannuation Plan	-	-	-	-
BALANCE AT 30 JUNE 2017	6,515	58	7,071	13,644
BALANCE AT 1 JULY 2017	6,515	58	7,071	13,644
Deficient for the Year	-	-	(1,979)	(1,979)
Other Comprehensive Income				
- Share of Loss of IRSM Associate Entity	-	(28)	-	(28)
- Exchange Loss on Consolidation	-	(8)	-	(8)
- Actuarial Gain in Defined Benefit Superannuation Plan	-	-	(113)	(113)
BALANCE AT 30 JUNE 2018	6,515	22	4,979	11,516

2018 ANNUAL REPORT

CONSOLIDATED STATEMENT OF CASH FLOWS

For The Year Ended 30 June 2018

	NOTES	YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
		\$'000	\$'000
CASH FLOWS FROM OPERATING ACTIVITIES			
Cash was Provided From:			
- Receipts from Customers		39,057	21,351
- Interest Received	2	11	3
Total Cash Provided From		39,068	21,354
Cash was Provided To:			
- Payments to Suppliers & Employees		(39,023)	(18,199)
- Interest Paid	3	(125)	(89)
NET CASH INFLOW / (OUTFLOW) FROM OPERATING ACTIVITIES	26	(80)	3,066
CASH FLOW FROM INVESTING ACTIVITIES			
Proceeds from Sale of Property, Plant & Equipment		5,632	56
Payment for Property, Plant & Equipment		(13,011)	(1,641)
Payment for Intangible Asset		(190)	(99)
NET CASH OUTFLOW FROM INVESTING ACTIVITIES		(7,569)	(1,684)
CASH FLOW FROM FINANCING ACTIVITIES			
Proceeds / (Repayment) from Borrowings		7,213	(1,700)
NET CASH INFLOW / (OUTFLOW) FROM FINANCING ACTIVITIES		7,213	(1,700)
NET DECREASE IN CASH HELD		(436)	(318)
CASH AT THE BEGINNING OF THE FINANCIAL YEAR		1,421	1,739
CASH AT THE END OF THE FINANCIAL YEAR / PERIOD	5	985	1,421

NOTES TO THE FINANCIAL STATEMENTS

For The Year Ended 30 June 2018

NOTE 1 - Summary of Significant Accounting Policies

This special purpose financial report has been prepared in accordance with Australian equivalents to International Financial Reporting Standards (IFRS), other authoritative pronouncements of the Australian Accounting Standards Board and the Australian Charities and Not-for-profits Commission Act 2012.

(A) BASIS OF PREPARATION OF FINANCIAL REPORT

ARRB Group Limited is not a reporting entity because in the directors' opinion, it is unlikely that users exist who are unable to command the preparation of reports tailored so as to satisfy, specifically, all their information needs.

This is a special purpose financial report that has been prepared for the sole purpose of complying with the Australian Charities and Not-for-profits Commission Act 2012 requirements to prepare and distribute a financial report to the members and must not be used for any other purpose. The directors have determined that the accounting policies adopted are appropriate to meet the needs of the members.

The measurement basis adopted in preparing this financial report is historical cost, except for certain assets which, as noted, are at valuation. Unless otherwise stated, the accounting policies adopted are consistent with those of the prior year.

The Group has applied Accounting Standard AASB 101 Presentation of Consolidated Financial statements and other applicable Australian Accounting Standards with the exception of the disclosure requirements in the following:

AASB 7	Financial Instruments Disclosures
AASB 124	Related Party Disclosures.
AASB 13	Fair Value Measurement

While not fully complying with the disclosure requirements of AASB 124, the Group discloses remuneration to directors (Note 22). The reader should also be aware of the relationship between ARRB Group Limited and its members, who are generally the government organisations which manage roads in Australia and New Zealand. ARRB Group Limited is a public company limited by guarantee and its members cannot benefit financially from its performance. The ARRB Group Limited operates as a not-for-profit entity and, in commercial transactions, on an arm's length basis from its members. Equally, members are also often clients and competitors. At the annual meeting, members may be entitled to elect some of their representatives as directors.

(B) PRINCIPLES OF CONSOLIDATION

The Consolidated Financial Statements incorporate the assets, liabilities and results of entities controlled by ARRB Group Ltd at the end of the reporting period. A controlled entity (subsidiary) is any entity over which ARRB Group Ltd has the power to govern the financial and operating policies so as to obtain benefits from the entity's activities. Control will general exist when the parent own, directly or indirectly through subsidiaries, more than half of the voting power of an entity. In assessing the power to govern, the existence and effect of holdings of actual and potential voting rights are also considered.

Where controlled entities have entered or left the Group during the year, the financial performance of those entities are included only for the period of the year that they are controlled.

In preparing the Consolidated Financial Statements, all inter-group balances and transaction, income and expenses, and profit and losses resulting from intra-group transactions have been eliminated on consolidation. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with those adopted by the parent entity.

Non-controlling interests, being the equity in a subsidiary not attributable, directly or indirectly, to a parent, are shown separately within the Equity section of the Consolidated Financial Statements and Consolidated Statement of Profit or Loss and Comprehensive Income. The non-controlling interests in the net assets comprise their interests at the date of the original business combination and their share of changes in equity since that date.

(C) FOREIGN CURRENCY TRANSLATION

(i) Functional and presentation currency

The functional currency of each group entity is measured using the currency of the primary economic environment in which that entity operates. The Consolidated Financial Statements are presented in Australian dollars which is the parent entity's functional and presentation currency.

(ii) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of transactions. Foreign currency monetary items are translated at the year-end exchange rate. Non-monetary items measured at historical cost continue to be carried at the exchange rate at the date of the transaction. Non-monetary items measured at fair value are reported at the exchange rate at the date when fair values were determined.

Exchange differences arising on the translation of monetary items are recognised in profit or loss, except where deferred in equity as a qualifying cash flow or net investment hedge.

Exchange differences arising on the translation of non-monetary items are recognised directly in other comprehensive income to the extent that the underlying gain or loss is directly recognised in other comprehensive income, otherwise the exchange difference is recognised in the profit or loss.

(D) REVENUE RECOGNITION

Amounts disclosed as revenue are net of returns, trade allowances and duties and taxes paid. Revenue is recognised for the major business activities as follows:

(i) Contract jobs and work in progress

Contract jobs and work in progress are valued at cost, plus profit recognised to date less any provision for anticipated future losses. Cost includes both variable and fixed costs relating to specific contracts, and those costs that are attributable to the contract activity and that can be allocated on a reasonable basis.

Profits from contract jobs are recognised on the stage of completion basis and measured using the proportion of cost incurred to date as compared to expected actual cost. Where losses are anticipated they are provided for in full.

Revenue from contract jobs is recognised on the basis of the terms of the contract adjusted for any variations or claims allowable under the contract.

(ii) Expense jobs

Revenue from expense jobs is recognised on the basis of the net amounts invoiced to customers.

(iii) Other goods/services

A sale is recorded when goods/services have been dispatched/provided to a customer pursuant to a sales order and the associated risks have passed to the carrier or customer.

(E) GOVERNMENT GRANTS

Grants revenue is recognised in the Consolidated Statement of Profit or Loss and Comprehensive Income when the Group obtains control of the grant and it is probable that the economic benefits gained from the grant will flow to the Group and the net amount of the grant can be measured reliably.

If conditions are attached to the grant which must be satisfied before it is eligible to receive the contribution, the recognition of the grant as revenue will be deferred until those conditions are satisfied. When the grant revenue is received whereby the Group incurs an obligation to deliver economic value directly back to the contributor, this is considered a reciprocal transaction and the grant revenue is recognised in the Consolidated Financial Statements as a liability until the service has been delivered to the contributor, otherwise the grant is recognised as income on receipt.

(F) INCOME TAX

The parent entity, ARRB Group Ltd, was granted income tax exempt status under section 50B of the **Income Tax Assessment Act 1997**, GST concessions under Division 176 of **A New Tax System (Goods and Service Tax) Act 1999** and FBT rebate under 123E of the **Fringe Benefits Tax Assessment 1986**. The subsidiary entity ARRB Group Inc. did not have any assessable income for the year.

(G) LEASES

Payments made under operating leases are charged to the Consolidated Statement of Profit or Loss and Comprehensive Income on a straight-line basis over the lease term.

(H) PURCHASE METHOD OF ACCOUNTING

The purchase method of accounting is used to account for all acquisitions of assets (including business combinations) regardless of whether equity instruments or other assets are acquired. Cost is measured as the fair value of the assets given, shares issued or liabilities incurred or assumed at the date of exchange plus costs directly attributable to the acquisition.

Identifiable assets and liabilities acquired and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date, irrespective of the extent of any minority interest. The excess of the cost of acquisition over the fair value of the company's share of the identifiable net assets acquired is recorded as goodwill. If the cost of acquisition is less than the fair value of the net assets of the subsidiary acquired, the difference is recognised directly in the Consolidated Statement of Profit or Loss and Comprehensive Income, but only after a reassessment of the identification and measurement of the net assets acquired.

(I) ACCOUNTING FOR ASSOCIATE ENTITY

The interest in the associate entity is accounted for using the equity method. Under the equity method, the share of the profits or losses of the entity is recognised in the income statement, and the share of movements in reserves is recognised in the balance sheet.

(J) IMPAIRMENT OF ASSETS

Assets that have an indefinite useful life are not subject to amortisation but are tested annually for impairment. Assets that are subject to amortisation/depreciation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purpose of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash generating units).

(K) CASH AND CASH EQUIVALENTS

Cash and cash equivalents include cash on hand, deposits held at call with financial institutions, other short-term, highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of change in value, and bank loans. Bank loans are shown within interest-bearing liabilities in the current liabilities on the Consolidated Financial Statements.

(L) TRADE RECEIVABLES

All trade debtors are recognised at the net amounts receivable as they are due for settlement.

The ability to collect trade debtors is reviewed on an ongoing basis. A provision for doubtful debts is established when there is objective evidence that the Group will not be able to collect all amounts due according to the original terms of the receivable.

NOTE 1 continued

(M) INVENTORIES

Raw materials, manufacturing work in progress and finished goods

Raw materials and stores, manufacturing work in progress and finished goods are stated at the lower of average cost and net realisable value. For finished goods, cost comprises direct materials, direct labour and an appropriate proportion of variable and fixed overhead expenditure, the latter being allocated on the basis of normal operating capacity. Manufacturing work in progress comprises direct materials only.

Contract work in progress

Contract work in progress is stated at the aggregate of contract costs incurred to date plus recognised profits less recognised losses and progress billings. If there are contracts where progress billings exceed aggregate costs incurred plus recognised profits less losses, the net amounts are presented under other liabilities as revenue in advance. Where contract costs incurred to date and recognised profits exceed progress billings, the amount is presented under current assets as contract works in progress.

(N) FAIR VALUE ESTIMATION

The fair value of financial assets and financial liabilities must be estimated for recognition and measurement or for disclosure purposes.

The nominal value less estimated credit adjustments of trade receivables, contract works in progress and payables are assumed to approximate their fair values.

(O) PROPERTY, PLANT AND EQUIPMENT

Land and buildings are shown at fair value. The directors provide the valuation which is based on triennial valuations by external independent valuers, less subsequent depreciation for buildings. Any accumulated depreciation at the date of revaluation is eliminated against the carrying amount of the asset and the net amount is restated to the re-valued amount of the asset. All other property, plant and equipment is stated at historical cost less depreciation. Historical cost also includes expenditure that is directly attributable to acquisition of the item.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the company and the cost of the item can be measured reliably. All other repairs and maintenance are charged to the Consolidated Statement of Profit or Loss and Comprehensive Income during the financial period in which they are incurred.

Increases in the carrying amounts arising on revaluation of land and buildings are credited to the asset revaluation reserve. To the extent that the increase reverses a decrease previously recognised in the Consolidated Statement of Profit or Loss and Comprehensive Income, the increase is recognised in the Consolidated Statement of Profit or Loss and Comprehensive Income. To the extent that the decrease reverses previous increases of the same asset, the decrease is recognised directly in the revaluation reserve through the Consolidated Statement of Changes in Equity. All other decreases are charged to the Consolidated Statement of Profit or Loss and Comprehensive Income.

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate their cost or re-valued amounts, net of their residual values, over their estimated useful lives, as follows:

Buildings	10 - 40 years
Leasehold improvement	Estimated useful life or unexpired period of the lease
Furniture, fittings & equipment	2 - 10 years
Plant and equipment	3 - 10 years
Motor vehicles	5 years

Assets residual values and useful lives are reviewed, and adjusted if appropriate, at each reporting date and no changes have been made.

(P) TRADE AND OTHER PAYABLES

These amounts represent liabilities for goods and services provided to the Group prior to the end of the financial year which are unpaid. The amounts are unsecured and are paid within the agreed terms of trade.

(Q) BORROWINGS

Borrowings are initially recognised at fair value, net of transaction costs incurred. Borrowings are subsequently measured at amortised cost. Any difference between the proceeds (net of transaction costs) and the redemption amount is recognised in the Consolidated Statement of Profit or Loss and Comprehensive Income over the period of the borrowings using the effective interest method.

(R) REVENUE IN ADVANCE

This represents the invoices raised or monies received but goods and services not yet provided to the customers at the end of the financial year.

(S) BORROWING COSTS

Borrowing costs incurred for the construction of any qualifying asset are capitalised using the period of time that is required to complete and prepare the asset for its intended use or sale. Other borrowing costs are expensed.

(T) PROVISIONS

Provisions for service warranties are recognised when the Group has a present legal or constructive obligation as a result of past events, it is more likely than not that an outflow of resources will be required to settle the obligation, and the amount has been reliably estimated. Provisions are not recognised for unknown operating losses.

(U) EMPLOYEE BENEFITS

(i) Wages and salaries, annual leave and sick leave

Liabilities for wages and salaries, including annual leave expected to be settled within 12 months of the reporting date are recognised in other payables in respect of employees' services up to the reporting date and are measured at the amounts expected to be paid when the liabilities are settled, at their nominal values.

The portion of annual leave expected to be settled more than 12 months are classified as non-current liability. It is based on the experience of employee annual leave taken pattern. It is measured as the present value of the estimated cash outflows to be made by the entity. Consideration is given to expected future wage and salary levels. Expected future payments are discounted using market yields at the reporting date on national government guaranteed bonds with terms to maturity and currency that match, as closely as possible, the estimated future cash outflows.

Provisions made in respect of employee benefits which are not expected to be settled within 12 months are measured at their present value of the estimated future cash outflows to be made by the entity in respect of services provided by employees up to the reporting date. Regardless of the expected timing of settlements, provisions made in respect of employee benefits are classified as a current liability, unless there is an unconditional right to defer the settlement of the liability for at least 12 months after the reporting date, in which case it would be classified as a non-current liability.

(ii) Long service leave

The liability for long service leave is recognised in the provision for employee benefits and measured as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Expected future payments are discounted using market yields at the reporting date on national government guaranteed bonds with terms to maturity and currency that match, as closely as possible, the estimated future cash outflows. Provisions made for unconditional long service leave would be classified as a current liability, where the employee has a present entitlement to the benefit. A non-current liability includes long service leave entitlements accrued for employees with less than seven years of continuous service.

(iii) Employee benefit on-costs

Employee benefit on-costs are recognised in employee benefit liabilities and costs when the employee benefits to which they relate are recognised as liabilities.

(iv) Employee incentives

The Group recognises a liability and an expense for bonuses based on the employee's performance against criteria of their employment contract. The Group recognises a provision where contractually obliged or where there is a past practice that has created a constructive obligation.

(v) Retirement benefit obligations

The Group operates both defined benefit superannuation plan and defined contribution superannuation plan for the employees' retirement, disability or death.

The defined benefit plan provides defined lump sum benefits based on years of service and final average salary. The defined contribution plan receives fixed contributions from the Group and the Group's legal or constructive obligation is limited to these contributions.

A liability or asset in respect of defined benefit superannuation plan is recognised on the face of the Consolidated Financial Statements, and is measured at the present value of the defined benefit obligation at the reporting date plus unrecognised actuarial gains (less unrecognised actuarial losses) less the fair value of the superannuation fund's assets at that date and any unrecognised past service cost. The present value of the defined benefit obligation is based on expected future payments which arise from membership of the fund to the reporting date, calculated annually by independent actuaries using the projected unit credit method. Consideration is given to expected future wages and salary levels, experience of employee departures and periods of service.

Expected future payments are discounted using market yields on national government bonds at the reporting date with terms to maturity and currency that match, as closely as possible, the future cash outflows.

Actuarial gains and losses arising from experience, adjustments and changes in actuarial assumptions are charged or credited to the Consolidated Statement of Profit or Loss and Comprehensive Income over the employees' average remaining working lives.

Past service costs are recognised immediately in income, unless the changes to the superannuation fund are conditional on the employees remaining in service for a specified period of time (the vesting periods). In this case, the past service costs are amortised on a straight-line basis over the vesting period.

Future taxes that are funded by the entity and are part of the provision of the existing benefit obligation are taken into account in measuring the net liability or asset.

Contributions to the defined contribution fund are recognised as an expense as they become payable. Prepaid contributions are recognised as an asset to the extent that a cash refund or a reduction in the future payments is available.

(V) INTANGIBLES

Development cost

Expenditure during the research phase of a project is recognised as an expense when incurred. Development costs are capitalised only when technical feasibility studies identify that the project will deliver future economic benefits and these benefits can be measured reliably. Development costs have a finite life and are amortised on a systematic basis matched to the future economic benefits over the useful life of the project. Development costs are amortised over three years.

(W) ROUNDING OF AMOUNTS TO NEAREST THOUSANDS DOLLARS

The Group is an entity to which ASIC Instrument 2016/91 applies and, accordingly, amounts in the financial statements and Directors' report have been rounded to the nearest thousand dollars.

NOTE 1 continued

(X) COMPARATIVE FIGURES

Where required by Accounting Standards, comparative figures have been adjusted to conform with changes in presentation for the current financial year.

When the Group applies an accounting policy retrospectively, makes a retrospective restatement or reclassification in its financial statements, a Consolidated Financial Statements as at the beginning of the earliest comparative period is disclosed.



NOTE 2 - Revenue

	YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
	\$'000	\$'000
Contract Income	35,619	18,090
Interest	11	3
Other	(21)	(50)
Share of Profit / (Loss) of IRSM Associate Entity	86	(25)
TOTAL REVENUE	35,695	18,018

(Y) CRITICAL ACCOUNTING ESTIMATES

The directors evaluate estimates and judgements incorporated into the financial report based on historical knowledge and best available current information. Estimates assume a reasonable expectation of future events and are based on current trends and economic data, obtained externally and within the company.

Debtors and contract works in progress

Significant judgements are made with respect to the recoverable amounts of trade debtors and contract works in progress. Invoices not yet raised are the recoverable amounts of contract works in progress.

In making their judgement, management considered:

- whether the total contract revenue could be measured reliably
- whether the contract costs to complete the contract and the stage of contract completion at balance date could be reliably measured, and
- whether the contract costs attributable to the contract can be clearly identified and measured reliably so that the actual contract costs incurred can be compared with prior estimates.

After reviewing contract transactions management are satisfied that the above criteria have been met and the recognition of the revenue in the current year is appropriate, in conjunction with the recognition of the appropriate contract works in progress/revenue in advance amounts.

NOTE 3 - Expenses

	YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
	\$'000	\$'000
EMPLOYEE BENEFITS		
Salaries, Wages & On-costs	17,853	8,943
Termination Benefits	550	79
At Risk & Share of Net Surplus	35	159
Employer Superannuation Contribution - Normal	1,768	880
Long Service Leave & Annual Leave	1,880	907
TOTAL EMPLOYEE BENEFITS	22,086	10,968
DEPRECIATION & AMORTISATION		
Amortisation - Intangibles	-	8
Depreciation - Buildings	-	-
- Plant & Equipment	2,242	1,483
TOTAL DEPRECIATION & AMORTISATION	2,242	1,491
BORROWING - INTEREST & FINANCE CHARGES	125	89
DIRECT MATERIALS	1,725	721
DIRECT OTHERS		
Contractors	3,040	1,709
Travel & Entertainment	1,181	448
Others	540	163
TOTAL DIRECT OTHERS	4,761	2,320
RENTAL (RELATING TO OPERATING LEASE)	942	425
OTHER		
Professional & Consulting Fees	2,314	862
Loss on Fixed Asset	278	-
Administrative	1,240	452
Travel & Entertainment	612	129
Impairment of Debtors / (write back of debtors)	60	(47)
Loss on Deconsolidation	335	-
Other	881	592
TOTAL OTHER	5,720	1,988
TOTAL EXPENSES	37,601	18,002

NOTE 4 - Income Tax

The parent entity, ARRB Group Ltd, was granted income tax exempt status under section 50B of the Income Tax Assessment Act 1997, GST concessions under Division 176 of A New Tax System (Goods and Service Tax) Act 1999 and FBT rebate under 123E of the Fringe Benefits Tax Assessment 1986. The subsidiary entity ARRB Group Inc. did not have any assessable income up to the date of sale.

NOTE 5 - Current Assets – Cash & Cash Equivalents

	YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
	\$'000	\$'000
CASH AT BANK & ON HAND	39	132
SHORT-TERM DEPOSITS & DEPOSITS AT CALL	947	1,289
TOTAL	986	1,421
The weighted average interest in the cash at bank and deposits is 0.50% (2017 : 1.71%)		
RECONCILIATION OF CASH		
Cash at the end of the financial year is reconciled to the Statement of Cash Flows as follows		
CASH & CASH EQUIVALENTS	986	1,421

There is no material difference between the fair value and the carrying amount of cash and cash equivalent.

NOTE 6 - Current Assets – Receivables

	YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
	\$'000	\$'000
TRADE DEBTORS	6,693	6,776
LESS PROVISION FOR IMPAIRMENT	(45)	(46)
TOTAL	6,648	6,730
OTHER RECEIVABLES	356	53
TOTAL RECEIVABLES	7,004	6,783

(a) Fair value

The amounts are stated at fair values as they are expected to be settled, in the short term, less the provision for doubtful debts.

(b) Interest rate risk

Trade and other receivables are non-interest bearing therefore not exposed to interest rate risk.

(c) Credit rate risk

The company has a large number of customers. The majority are the federal government, state and local authorities and as a result the risk of default is limited.

NOTE 7 - Current Assets – Inventories

	YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
	\$'000	\$'000
RAW MATERIALS	32	30
FINISHED GOODS	-	-
LESS PROVISIONS FOR OBSOLETE STOCK	-	-
INVENTORIES AT NET REALISABLE VALUE	32	30
STORES AT NET REALISABLE VALUE	1	47
MANUFACTURING WORK IN PROGRESS NOTE 1 (I)	-	-
CONTRACT WORKS IN PROGRESS NOTE 1 (I)	2,676	1
WORK IN PROGRESS AT COST	2,676	1
TOTAL INVENTORIES	2,709	78

NOTE 8 - Prepayment

	YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
	\$'000	\$'000
PREPAYMENTS	431	310

There is no material difference between the fair value and the carrying amount of prepayments.

NOTE 9 - Assets Held For Sale & Discontinued Business

(a) Sale of Land and Building

On the 17th May 2017, the Group signed a contract of sale for the land and building at Vermont South, Victoria. The carrying value of the asset as at 31st Dec 2016 is \$8.823m. Contract settlement was on 18th August 2018 and subsequently deferred to 14th December 2018 at which date the significant risks and rewards of ownership of the property will transfer to the buyer.

(b) Sale of Equipment Business

On the 1st June 2017, the Board of Directors decided to exit from the Equipment Sales and US subsidiary businesses. Under the terms of share sale agreement sub agreement, the USA based iPave will only be transferred when the debt pertaining to it is paid in full by the purchaser. As at 30 June 2018, five instalments of six months apart over the next three years remain payable. The final instalment is due on the 15th September 2020. Once the debt has been paid by the purchaser the USA based iPAVE will be transferred to their ownership. Until this has occurred ARRB Group retains ownership of the asset.



NOTE 9 continued

	YEAR ENDED 30-06-2018			HALF YEAR ENDED 30-06-2017		
	SYSTEM	AGI	TOTAL	SYSTEM	AGI	TOTAL
REVENUE	1,196	173	1,369	1,267	52	1,319
EXPENSE	1,184	258	1,442	1,599	550	2,149
LOSS BEFORE & AFTER TAX	12	(85)	(73)	(332)	(498)	(830)
NET CASHFLOW FROM OPERATING ACTIVITIES	195	(82)	113	(821)	(1,307)	(2,128)
NET CASHFLOW FROM INVESTING ACTIVITIES	-	-	-	(12)	-	(12)
NET CASHFLOW FROM FINANCING ACTIVITIES	-	82	82	-	1,287	1,287
TOTAL	195	-	195	(833)	(20)	(853)

The carrying amounts of assets and liabilities were:

	YEAR ENDED 30-06-2018				HALF YEAR ENDED 30-06-2017			
	ARRB	SYSTEM	AGI	TOTAL	ARRB	SYSTEM	AGI	TOTAL
ASSET CLASSIFIED AS HELD FOR SALE								
Property, Plant & Equipment	8,820	3,206	0	12,026	8,820	3,628	59	12,507
Inventories	0	0	0	0	0	1,625	22	1,647
Other Receivables	0	0	0	0	0	106	50	156
TOTAL	8,820	3,206	0	12,026	8,820	5,359	131	14,310
LIABILITIES DIRECTLY ASSOCIATED WITH ASSET CLASSIFIED AS HELD FOR SALE								
Employee Benefit Obligations	0	0	0	0	0	863	24	887
Interest Bearing Liabilities	0	0	0	0	0	2,037	0	2,037
TOTAL	0	0	0	0	0	2,900	24	2,924

NOTE 10 - Non-Current Assets –
Property, Plant & Equipment

\$'000	FREEHOLD LAND	BUILDING	LEASEHOLD IMPROVEMENTS	FURNITURE, FITTINGS & EQUIPMENT	RESEARCH & SURVEY EQUIPMENT	PLANT & EQUIPMENT	MOTOR VEHICLES	CAPITAL WORK IN PROGRESS	TOTAL
	AT VALUATION	AT VALUATION	AT COST	AT COST	AT COST	AT COST	AT COST	AT COST	AT COST
COST / REVALUATION									
Balance at 1 Jul 2017	-	-	87	4,273	11,487	2,611	41	1,673	20,172
Addition	-	-	284	965	4,333	-	-	7,350	12,932
Disposal	-	-	-	(68)	(1,048)	-	-	-	(1,116)
Balance at 30 Jun 2018	-	-	371	5,170	14,772	2,611	41	9,023	31,988
ACCUMULATED DEPRECIATION									
Balance at 1 Jul 2017	-	-	87	3,099	8,678	2,389	41	-	14,294
Addition	-	-	31	596	1,553	66	-	-	2,246
Disposal	-	-	-	(63)	(888)	-	-	-	(951)
Balance at 30 Jun 2018	-	-	118	3,632	9,343	2,455	41	-	15,589
NET BOOK VALUE									
1 Jul 2017	-	-	-	1,174	2,809	222	-	1,673	5,878
30 Jun 2018	-	-	253	1,538	5,429	156	-	9,023	16,399

NOTE 11 - Non-Current Assets –
Intangible Assets

	2018	2017
	\$'000	\$'000
ORIGINAL OPENING BALANCE	-	22
ADDITION	190	-
AMORTISATION	-	(22)
BALANCE AT THE END OF THE YEAR / PERIOD	190	-

The addition of intangible assets this year represents the purchase of Big Cloud business specialising in software development and software hosting business. In 2017, the intangible costs represent the cost for substantial technological improvement of pre-existing products in the Systems Division.

NOTE 12 - Non-Current Assets – Financial Assets

Investment in Indian Road and Survey Management Private Limited (IRSM) is accounted for using the equity method of accounting. ARRB's share in IRSM is currently 50%. ARRB is considered to have 'significant influence' in IRSM, as outlined in AASB 128 Accounting for Associates, paragraph 7. The share of profit is shown in Note 2, Revenue.

	2018	2017
	\$'000	\$'000
INVESTMENT IN INDIAN ROAD & SURVEY MANAGEMENT PRIVATE LIMITED	432	374

The summarised presentation of aggregate assets, liabilities and performance of IRSM is as follows, based on the percentage of ARRB's share:

	2018	2017
	\$'000	\$'000
CURRENT ASSETS	582	553
NON-CURRENT ASSETS	481	345
TOTAL ASSETS	1,063	898
CURRENT LIABILITIES	529	265
NON-CURRENT LIABILITIES	102	259
TOTAL LIABILITIES	631	524
NET ASSETS	432	374

Share of revenue, expense and results

	FULL YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
	\$'000	\$'000
REVENUES	629	395
PROFIT / (LOSS) BEFORE TAX	86	(25)

NOTE 13 - Non-Current Receivable

	2018	2017
	\$'000	\$'000
OTHER RECEIVABLE	889	-

NOTE 14 - Current Liabilities – Interest Bearing Liabilities

	2018	2017
	\$'000	\$'000
BANK LOANS - SECURED	10,309	2,500
BANK - TRADE FINANCE LOAN	-	596
TOTAL	10,309	3,096

The weighted average interest rate of bank loans is 4.47% (2017: 3.37%). The bank holds a fixed charge over the land and building for ARRB's liabilities to the bank.

NOTE 15 - Current Liabilities – Trade And Other Payables

	2018	2017
	\$'000	\$'000
TRADE PAYABLES	1,464	1,058
DEPOSIT RECEIVED (A)	5,177	-
OTHER PAYABLES	4,413	1,315
TOTAL PAYABLES	11,054	2,373

(a) Deposit represents the amount paid by the buyer of the Vermont South office

There is no material difference between the fair value and the carry amount of trade payables and other payables.

NOTE 16 - Current Liabilities – Other

	2018	2017
	\$'000	\$'000
PROVISION FOR EMPLOYEE ENTITLEMENTS - ANNUAL LEAVE - SHORT TERM	1,348	1,307
PROVISION FOR EMPLOYEE ENTITLEMENTS - ANNUAL LEAVE - LONG TERM	225	213
INCOME RECEIVED IN ADVANCE	509	451
CONTRACT WORK IN PROGRESS - REVENUE RECEIVED IN ADVANCE	2,651	2,297
TOTAL CURRENT OTHER LIABILITIES	4,733	4,268

There is no material difference between the fair value and the carrying amount of other current liabilities.

NOTE 17 - Employee Entitlements

	2018	2017
	\$'000	\$'000
CURRENT Provision for employee entitlement long service leave	2,758	3,065
NON-CURRENT Provision for employee entitlement long service leave	335	427



NOTE 18 - Retirement Benefits

Retirement plan

The Group operates both defined benefit superannuation plan and defined contribution superannuation plan for the employees' retirement, disability or death.

The parent entity, ARRB Group Ltd, has a defined benefit plan and a defined contribution plan. The defined benefit plan provides lump sum benefits based on years of service and final average salary. The defined contribution plan receives fixed contributions from the company and the company's legal or constructive obligation is limited to these contributions.

The following sets out details in respect of the defined benefit plan only.

As there was no material deterioration in the global financial market since the last actuarial review in early 2017, there was no actuarial review performed for the six months ended 30th June 2017.

	2018
	\$'000

NON-CURRENT ASSETS	530
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(a) Consolidated Financial Position amounts

The amounts recognised in the Consolidated Financial Statements are determined as follows:

	2018	2017
	\$'000	\$'000
PRESENT VALUE OF THE DEFINED BENEFIT OBLIGATION	(10,337)	(10,741)
FAIR VALUE OF DEFINED BENEFIT PLAN ASSETS	10,867	11,383
NET ASSET IN THE STATEMENT OF FINANCIAL POSITION	530	642

(b) Categories of plan assets

The break-down of assets for disclosure purposes is as follows:

	2018
ASSET TYPE	
Australian Equities	18.00%
International Equities	18.00%
Australian Fixed Interest	17.00%
International Fixed Interest	16.00%
Property	7.00%
Alternative Assets (Growth)	9.00%
Alternative Assets (Defensive)	5.00%
Cash	10.00%
TOTAL	100.00%

(c) Reconciliation

	2018
	\$'000

RECONCILIATION OF THE PRESENT VALUE OF THE DEFINED BENEFIT OBLIGATION WHICH IS PARTLY FUNDED:

Balance at the Beginning of the Year	10,316
Current Service Cost	185
Net Interest Expense	336
Member Contribution	-
Actuarial Gains Arising from Changes in Financial Assumptions	77
Actuarial Losses Arising from Changes in Experience Assumptions	183
Benefits Paid	(760)
BALANCE AT THE END OF THE YEAR	10,337

RECONCILIATION OF THE FAIR VALUE OF PLAN ASSETS

Balance at the Beginning of the Year	10,896
Interest Income	357
Return on Plan Assets (excluding interest income)	334
Employer Contributions	40
Member Contribution	-
Benefits Paid	(760)
BALANCE AT THE END OF THE YEAR	10,867

(d) Amounts recognised in Consolidated Statement of Profit or Loss and Comprehensive Income

	2018
	\$'000
Current Service Cost	185
Net Interest on the Net Defined Benefit Liability	(21)
DEFINED BENEFIT COST RECOGNISED IN THE INCOME STATEMENT	164
Remeasurement of the Net Defined Benefit Liability	(74)
TOTAL INCLUDED IN EMPLOYEE BENEFITS EXPENSE	(74)
TOTAL DEFINED BENEFIT COST	90

ACTUAL RETURN ON PLAN ASSETS	692
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The best estimate of contributions expected to be paid to the plan during 2018 was \$34,072.

(e) Principal actuarial assumptions

Sensitivity of the Defined Benefit Obligations	0.50%
To changes in the Significant Assumptions	Increase
Discount Rate	-0.70%
Salary & Price Inflation	1.40%

(f) Projected defined benefit cost for 2018

	2019
	\$'000
Current Service Cost	163
Net Interest	(16)
DEFINED BENEFIT COST	147

(g) Employer contributions

Employer contributions to the defined benefit section of the plan are based on recommendations by the plan's actuary. Actuarial assessments are made at no more than three-yearly intervals, and the last such assessment was made on 30 June 2015.

The objective of funding is to ensure that the benefit entitlements of members and other beneficiaries are fully funded by the time they become payable. To achieve this objective, the actuary adopted a method of funding benefits known as the aggregate funding method; this funding method seeks to have benefits funded by means of a total contribution which is expected to be a constant percentage of members' salaries over their working lifetimes.

The economic assumptions used by the actuary to make the funding recommendations were a long-term investment earning rate of 5% pa, a salary increase rate of 3% pa together with a 2.5% indexation for deferred benefit members.

On 25 February 2016, the Superannuation Committee agreed the recommendation from the actuary a reduction of the employer contribution rate from 12.0% to 0%. This is based on the vested benefit index of the plan is 109% in June 2015 and that the defined benefit assets have been moved to a more conservative asset allocation reduces the impact if there is a sudden downturn in equity markets.

(h) Net financial position of plan

In accordance with AAS 25 Financial Reporting by Superannuation Plans, the plan's net financial position is determined as the difference between the present value of the accrued benefits and the net market value of plan assets. This has been determined as at the date of the most recent financial report of the superannuation fund (30 June 2015), and a surplus of \$933K was reported.

NOTE 19 - Non-current Other Payable

	2018	2017
	\$'000	\$'000
OTHER PAYABLE	889	-

NOTE 20 - Financing Arrangement

Unrestricted access was available at balance date to the following lines of credit:

	2018	2017
	\$'000	\$'000
TOTAL FACILITIES		
Bank Loan Facilities	18,100	4,800
Other Credit Facilities	1,050	1,750
TOTAL	19,160	6,550
USED AT BALANCE DATE		
Bank Loan Facilities	10,310	2,500
Other Credit Facilities	498	603
TOTAL	10,808	3,103
UN-USED AT BALANCE DATE		
Bank Loan Facilities	7,800	2,300
Other Credit Facilities	552	1,147
TOTAL	8,352	3,447

The bank holds a fixed charge over the assets and undertakings of the company.

NOTE 21 - Members' Guarantee

The company is a company limited by guarantee. The liability of each of its members is limited to \$20.

NOTE 22 - Reserves

	2018	2017
	\$'000	\$'000
ASSET REVALUATION RESERVE		
Balance at Beginning of Period / Year	6,515	6,515
Movement During the Period / Year	-	-
BALANCE AT THE END OF PERIOD / YEAR	6,515	6,515
FOREIGN CURRENCY TRANSLATION RESERVE		
Balance at Beginning of Period / Year	58	109
Movement During the Period / Year	(36)	(51)
BALANCE AT THE END OF PERIOD / YEAR	22	58
TOTAL	6,537	6,573

The asset revaluation reserve is used to record increments and decrements on the revaluation of non-current assets, as described in accounting policy Note 1(o).



NOTE 23 - Remuneration Of Directors

	2018	2017
	\$'000	\$'000
INCOME RECEIVED, OR DUE & RECEIVABLE BY THE DIRECTORS	139	70

The names of persons who were directors of ARRB Group Limited at any time for the year are as follows:

P. Duncan	P. Woronzow
N. Z. Scales	K. Reid
A. T. Turner	S. Troughton

The following table shows the schedule of fees available to the non-executive directors:

	BASE FEES	COMMITTEE ONE	TWO	TOTAL
CHAIR	\$60,000	\$7,500	\$7,500	\$75,000
DEPUTY CHAIRMAN	\$42,500	\$7,500	\$7,500	\$57,500
NON-EXECUTIVE DIRECTORS	\$25,000	\$7,500		\$32,500

Non-executive directors are encouraged to be a member on one committee only. If a non-executive director is a member on two committees, they will be remunerated accordingly. Currently the chair is the only non-executive director on two committees.

NOTE 24 - Remuneration Of Auditors

During the year the auditor of the company and its related practices earned the following remuneration:

	2018	2017
	\$'000	\$'000
Audit or Review of Financial Reports of the Company	46	46
Underprovision	-	6
TOTAL	46	52
Other Services	16	5
TOTAL	62	57

NOTE 25 - Contingent Liabilities & Contingent Assets

Contingent Assets

There are no contingent assets at balance date.

Contingent Liabilities

There are no contingent liabilities at balance date.

NOTE 26 - Commitments For Expenditure

Capital commitments

Capital commitments as at 30 June 2018 were \$3,496,000 (2017: \$2,438,000). They are all due for payment within one year.

Lease commitments

Commitments in relation to operating leases contracted for at the reporting date but not recognised as liabilities payable:

	2018	2017
	\$'000	\$'000
No Later than One Year	1,700	1,004
Later than One Year but Not Later than 5 Years	5,075	1,558
TOTAL	6,775	2,562

NOTE 27 - Reconciliation of Profit from Ordinary Activities After Income Tax to Net Cash Inflow / (Outflow) from Operating Activities

	FULL YEAR ENDED 30-06-2018	HALF YEAR ENDED 30-06-2017
	\$'000	\$'000
OPERATING LOSS AFTER INCOME TAX	(1,979)	(814)
ADJUSTMENT FOR NON-CASHFLOW ITEMS		
Depreciation & Amortisation	2,242	1,509
Provisions for Loss on Sale of FA	278	10
Provisions / (Write back) for Doubtful Debt	58	(265)
Decrease in Provision for Obsolete Stock	(3)	(268)
CHANGE IN OPERATING ASSETS & LIABILITIES		
(Increase) / Decrease in Receivable	(186)	417
Decrease in Inventory	194	3,602
Decrease in Payable	(684)	(1,124)
NET CASH (OUTFLOW) / INFLOW FROM OPERATING ACTIVITIES	(80)	3,067

NOTE 28 - Subsidiaries

The subsidiary company, ARRB Group Inc., a company incorporated in the USA was sold during the year.

NOTE 29 - Parent Information

	2018	2017
	\$'000	\$'000
Current Assets	23,157	27,811
Non-current Assets	24,262	7,005
TOTAL ASSETS	47,419	34,816
Current Liabilities	28,856	15,688
Non-current Liabilities	1,224	427
TOTAL LIABILITIES	30,080	16,115
NET ASSETS	17,339	18,701
REVENUE, EXPENSE & RESULTS		
Revenues	37,227	20,109
NET LOSS BEFORE TAX	(1,223)	494
OTHER COMPREHENSIVE INCOME		
Items that will not be reclassified to the profit and loss	(113)	-
Items reclassified subsequently to the profit and loss	(28)	-
TOTAL	(141)	-
TOTAL COMPREHENSIVE INCOME	(1,364)	494

Contingent Assets

There are no contingent assets at balance date.

Contingent Liabilities

There are no contingent liabilities at balance date.

Capital commitments

Capital commitments as at 30 June 2018 were \$3,496m (2017: \$2,438m). They are all due for payment within one year.

Lease commitments

Commitments in relation to operating leases contracted for at the reporting date but not recognised as liabilities payable:

	2018	2017
	\$'000	\$'000
No Later than One Year	1,700	1,004
Later than One Year but Not Later than 5 Years	5,075	1,558
TOTAL	6,775	2,562

NOTE 30 - New Standards & Interpretations Issued but Not Effective

At the date of this financial report the following standards and interpretations, which may impact the entity in the period of initial application, have been issued but are not yet effective:

REFERENCE	TITLE	SUMMARY	APPLICATION DATE (FINANCIAL YEARS BEGINNING)	EXPECTED IMPACT
AASB 15	Revenue from Contracts with Customers	This Standard establishes principles (including disclosure requirements) for reporting useful information about the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity's contracts with customers.	1 January 2018	The Group has not yet determined the extent of the impact on the amendments, if any
AASB 9	Financial Instruments	The key changes include the simplified requirements for the classification and measurement of financial reports, a new hedging accounting model and a revised impairment loss model to recognise impairment losses earlier, as opposed to the current approach that recognises impairment only when incurred	1 January 2018	The Group has not yet determined the extent of the impact on the amendments, if any
AASB 16	Leases	The key changes introduced by AASB 16 include the recognition of most operating leases (which are current not recognised) on balance sheet.	1 January 2019	The Group has not yet determined the extent of the impact on the amendments, if any

NOTE 31 - Events After Balance Sheet Date

There are no material events after balance sheet date



Directors' Declaration

The directors have determined that the Group is not a reporting entity, and that this special purpose financial report should be prepared in accordance with the accounting policies outlined in Note 1 to the Consolidated Financial statements.

The directors declare that the financial reports and notes set out on pages 10 to 37.

- a. comply with Australian Accounting Standards as detailed in Note 1 to the Consolidated Financial statements
- b. give a true and fair view of the company's financial position as at 30 June 2018 and of its performance for the financial year ended on that date in accordance with the accounting policies described in Note 1 to the Consolidated Financial statements.

In the directors' opinion:

- a. the Consolidated Financial statements and notes are in accordance with the Australian Charities and Notfor-profits Commission Act 2012
- b. there are reasonable grounds to believe that the company will be able to pay its debts as and when they become due and payable.

This declaration is made in accordance with a resolution of the directors.

P. Duncan
Chairman

P. Woronzow
Chair of Audit & Risk
Management Committee



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INDEPENDENT AUDITOR'S REPORT
To the Members of ARRB Group Limited

Opinion

We have audited the financial report of ARRB Group Limited (the Company) and its subsidiary (the Group), which comprises the consolidated statement of financial position as at 30 June 2018, the consolidated statement of profit or loss and other comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, and the directors' declaration.

In our opinion, the financial report of the Group has been prepared in accordance with Division 60 of the *Australian Charities and Not-for-profits Commission Act 2012*, including:

- (a) giving a true and fair view of the Group's financial position as at 30 June 2017 and of its financial performance and cash flows for the year ended on that date; and
- (b) complying with Australian Accounting Standards and Division 60 of the *Australian Charities and Not-for-profits Commission Regulation 2013*.

Basis for Opinion

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Report* section of our report. We are independent of the Group in accordance with the ethical requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants* (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of Matter – Basis of Accounting

We draw attention to Note 1 to the financial report, which describes the basis of accounting. The financial report has been prepared to assist the Group to meet the requirements of Division 60 of the Australian Charities and Not-for-profits Commission Act 2012. As a result, the financial report may not be suitable for another purpose. Our opinion is not modified in respect of this matter.

Responsibilities of Management and Those Charged with Governance for the Financial Report

The directors of the Company are responsible for the preparation of the financial report that gives a true and fair view in accordance with Australian Accounting Standards and the *Australian Charities and Not-for-profits Commission Act 2012* (ACNC Act) and for such internal control as the directors determine is necessary to enable the preparation of the financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

THE POWER OF BEING UNDERSTOOD
AUDIT | TAX | CONSULTING

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In preparing the financial report, directors are responsible for assessing the Group’s ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Report

Our objectives are to obtain reasonable assurance about whether the financial report as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this financial report.

A further description of our responsibilities for the audit of the financial report is located at the Auditing and Assurance Standards Board website at: http://www.auasb.gov.au/auditors_responsibilities/ar4.pdf. This description forms part of our auditor's report.

RSM

RSM AUSTRALIA PARTNERS

[Handwritten signature]

P A RANSOM
Partner

Dated: 13 December 2018
Melbourne, Victoria





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[CULTURE & VALUES](#)

[AUS & NZ PERSPECTIVE](#)

[ARRB MILESTONES](#)

[COMMUNITY VALUE](#)

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[**GLOSSARY & ACRONYMS**](#)

[LINKS TO OTHER DOCS](#)

GLOSSARY

ARRB MEMBERS

Australian and New Zealand state road agencies

AUSTRALIAN LOCAL GOVERNMENT ASSOCIATION (ALGA)

The Australian Local Government Association is the principal organisation representing Local Government bodies in Australia, and acts as the independent interest body for Australian local mayors, councillors and local government employees.

AUTONOMOUS VEHICLES

A vehicle that is partially automated, meaning some or all of the driving task can be handled by the vehicle and not a human driver.

AUSTROADS

AustRoads is the association of Australasian road transport and traffic agencies. It publishes guidelines, codes of practice and research reports that promote best practice for road management organisations in Australasia.

COOPERATIVE INTELLIGENT TRANSPORT SYSTEMS (C-ITS)

Connected vehicle technologies allow vehicles to communicate with each other and the world around them. A connected vehicle ecosystem is emerging in which vehicles will share data wirelessly with other vehicles, with infrastructure, with transport management systems, and with mobile devices.

DEPARTMENT OF INFRASTRUCTURE, REGIONAL DEVELOPMENT AND CITIES

The Department is responsible for the design and implementation of the Australian Government’s infrastructure, transport, local government and regional development policies and programs.

DEPARTMENT OF TRANSPORT AND MAIN ROADS (TMR)

The Department of Transport and Main Roads is a department of the Queensland Government, formed in April 2009 with the merger of the Queensland Transport and the Department of Main Roads.

DEPARTMENT OF PLANNING, TRANSPORT AND INFRASTRUCTURE SA (DPTI)

The Department of Planning, Transport and Infrastructure works as part of the South Australia community to deliver effective planning policy, efficient transport, and valuable social and economic infrastructure

HAWKEYE

The Hawkeye software suite for both the 1000 and 2000 Series of products offer a fully integrated solution for data viewing and analysis.

MAIN ROADS WESTERN AUSTRALIA (MRWA)

Main Roads Western Australia is an agency of the Government of Western Australia that is responsible for implementing the state’s policies on road access and main roads.

SAFE SYSTEM PRINCIPLES

A holistic view of the road transport system and the interactions among roads and roadsides, travel speeds, vehicles and road users. It is an inclusive approach that caters for all groups using the road system, including drivers, motorcyclists, passengers, pedestrians, cyclists, and commercial and heavy vehicle drivers.

ROADS AND MARITIME SERVICES (RMS)

Roads and Maritime Services is an agency of the New South Wales Government responsible for building and maintaining road infrastructure and managing the day-to-day compliance and safety for roads and waterways. The Agency was created on 1 November 2011 from a merger of the Roads & Traffic Authority and NSW Maritime.

TRANSPORT AND INFRASTRUCTURE SENIOR OFFICIALS’ COMMITTEE (TISOC)

The Transport and Infrastructure Senior Officials’ Committee (TISOC) consists of heads of transport and infrastructure departments, and road authorities from each state and territory as well as New Zealand. A representative from local government, as well as the NTC Chief Executive are also members of this group. The key function is to develop, coordinate and progress the strategic agenda of the Transport and Infrastructure Council.

VICROADS

VicRoads is the road and traffic authority in the state of Victoria, Australia. It is responsible for maintenance and construction of the arterial road network, as well as driver licensing and vehicle registration.

ACRONYMS

AAPA

Australian Asphalt Pavement Association

ADVI

Australian and New Zealand Driverless Vehicle Initiative

ANRAM

Australian National Risk Assessment Model

ARRB

Australian Road Research Board

ASIC

Australian Securities and Investments Commission

ATF

Austroroads Asset Task Force

ATLABS

Advanced Technology Lab

AV

Autonomous Vehicles

CAV

Connected Automated Vehicle

CPA AUSTRALIA

Certified Practising Accountant Australia

CRM

Client Relations Management

DC

Data Collection

DPTI

Department of Planning, Transport and Infrastructure SA

EME2

French Term for a new bitumen formula intended for Europe (EME) and then perfected for Australian conditions (EME2)

IFRS

International Financial Reporting Standards

IPAVE

Intelligent Pavement Assessment Vehicle

IPWEA

Institute of Public Works Engineering Australasia

IRSM

Indian Road Survey Management Ltd

ISSAVE

Intelligent Safe Surface Assessment Vehicle

MRWA

Main Roads Australia

NACOE

National Centre of Excellence

NHVR

National Heavy Vehicles Regulator

NRSPP

National Road Safety Partnership Program

NTC

National Transport Commission

NTRC

National Transport Research Centre

NZTA

New Zealand Transport Agency

PIARC

World Road Association (?)

QDTMR

Queensland Department of Transport and Main Roads

RAVRAT

Restricted Access Vehicle Route Assessment Tool

RMS

Roads and Maritime Services

RPUG

Road Profile User’s Group

SCRIM

Sideway-force Coefficient Routine Investigation Machine

TFNSW

Transport for New South Wales

TIPES

Transport Infrastructure Product Evaluation Scheme

TMR

Queensland Department of Transport and Main Roads

UNECE

United Nations Economic Commission of Europe

WARRIP

WA Road Research & Innovation Program



ABOUT ARRB

CULTURE & VALUES

AUS & NZ PERSPECTIVE

ARRB MILESTONES

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CAPABILITIES STATEMENT



COMPANY PROFILE



ARRB DIVISIONS



23 YEAR RESEARCH JOURNEY
SUCCESSFULLY COMPLETED



EASTLINK REPORT
IN FULL



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