Annual Report 2019–20

Austroads

Contents

Austroads Annual Report 2019–20

Published: October 2020
Austroads publication number: AP-C20-20
ISBN: 978-1-922382-30-6

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Cover photo: The road to the Grampians National Park in Victoria leads to ancient Aboriginal rock art paintings and shelters, majestic waterfalls, and awe-inspiring mountain panoramas.

Overview

Austroads is the peak organisation of Australasian road transport and traffic agencies.

Austroads members are collectively responsible for managing more than 900,000 kilometres of roads valued at more than $250 billion, representing the single largest community asset in Australia and New Zealand.

Austroads' purpose is to support our member organisations to deliver an improved Australasian road transport network. One that meets the future needs of the community, industry and economy. A road network that is safer for all users and provides vital and reliable connections to places and people. A network that uses resources wisely and is mindful of its impact on the environment.

To succeed in this task, we undertake leading-edge road and transport research which underpins our input to policy development and published guidance on the design, construction and management of the road network and its associated infrastructure.

We administer the National Exchange of Vehicle and Driver Information System (NEVDIS), a unique national system which enables road authorities to interact across state borders and directly supports the transport and automotive industries.

In 2019 we acquired Transport Certification Australia Ltd (TCA). This trusted partner to government, technology providers and industry stakeholders provides assurance services relating to transport technologies and data to enable improved public purpose outcomes from road transport.

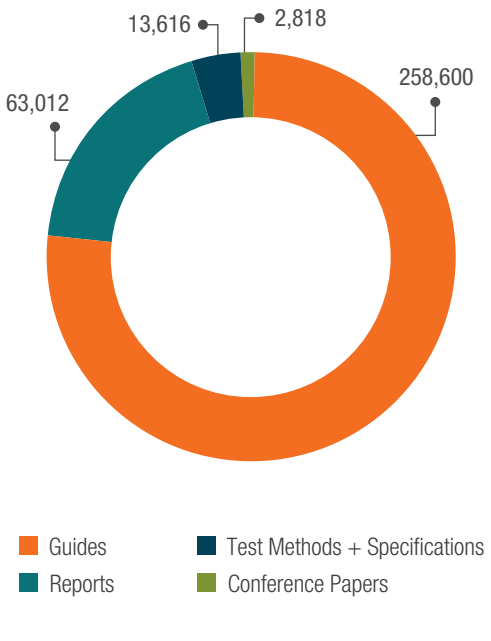
Austroads' collective approach delivers value for money, encourages shared knowledge and drives consistency for road users.

Members (at 30 June 2020)

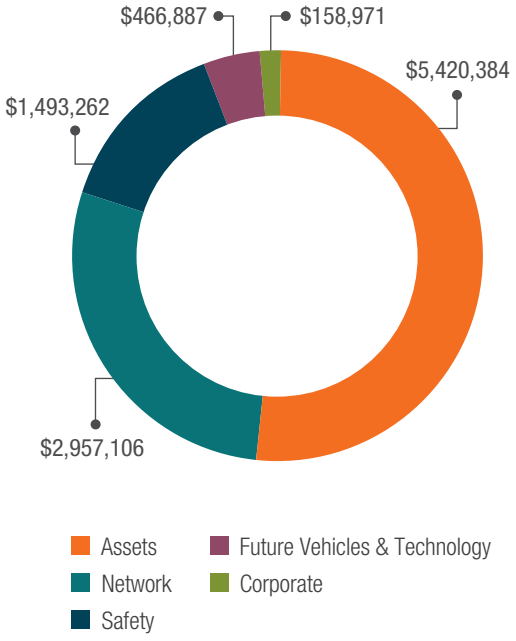
- Transport for NSW
- Department of Transport Victoria
- Queensland Department of Transport and Main Roads
- Main Roads Western Australia
- Department for Infrastructure and Transport South Australia
- Department of State Growth Tasmania
- Department of Infrastructure, Planning and Logistics Northern Territory
- Transport Canberra and City Services Directorate, Australian Capital Territory
- Commonwealth Department of Infrastructure, Transport, Regional Development and Communications
- Australian Local Government Association
- New Zealand Transport Agency.

Highlights

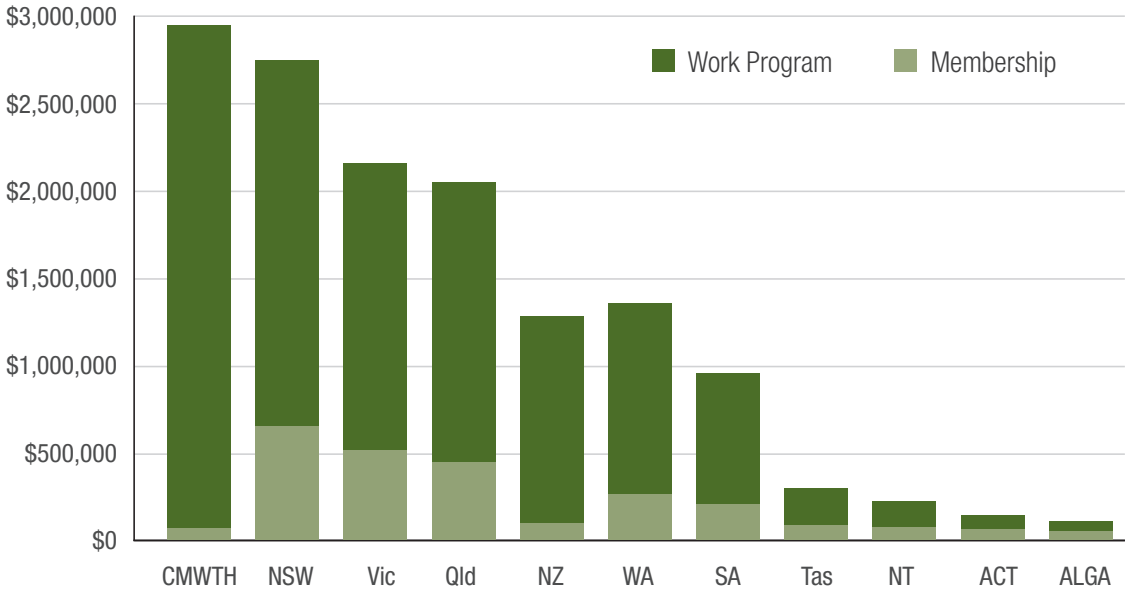
PUBLICATION DOWNLOADS 2019–20



WORK PROGRAM EXPENDITURE 2019–20



AUSTROADS FUNDING CONTRIBUTION SHARES 2019–20



2019–20 HIGHLIGHTS:

$10.5 million
research work program expenditure

25
full-time equivalent staff

43
projects completed

256 million
NEVDIS transactions

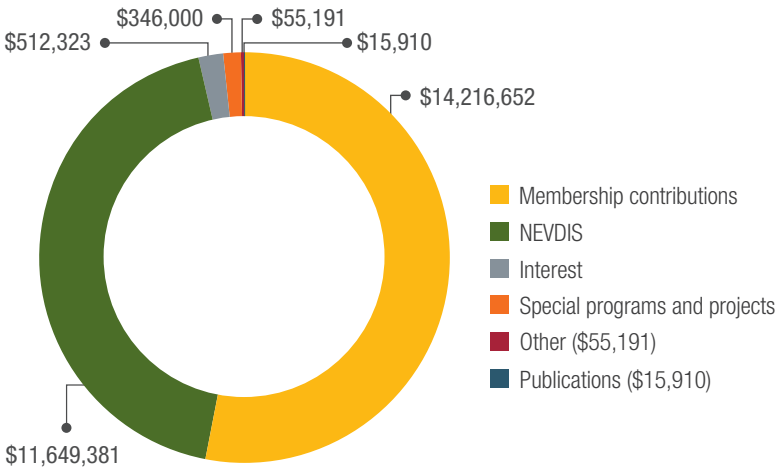
177
publications and webinars produced

338,000
publications accessed

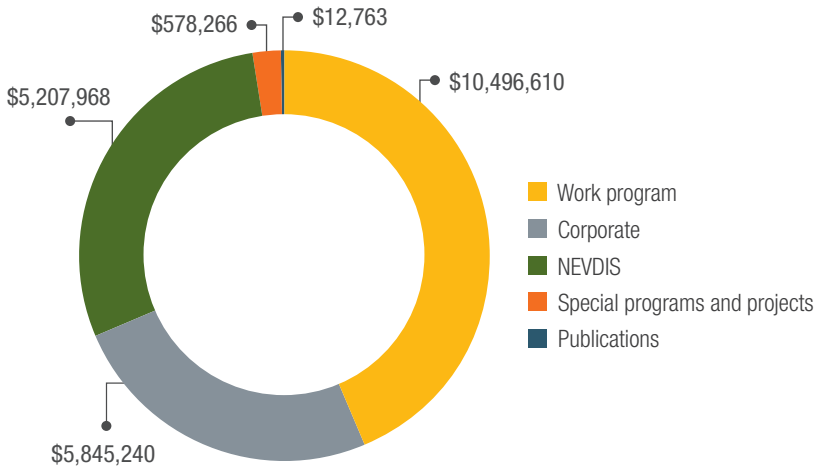
2.9 million
web page views

20,000
webinar participants

INCOME 2019–20



EXPENDITURE 2019–20



Neil Scales, OBE

> A significant achievement during the last year was the funding of the Safety Program by NEVDIS income.

Chair's Report

This year is the final year of the 2016-2020 strategic plan. The plan started Austroads on a journey of transformation that will continue with the delivery of the 2020-2024 strategy.

The 2016–2020 plan delivered 164 projects, 575 publications and 107 webinars. In the time of the plan Austroads invested more than $44.1 million in research, practitioners downloaded more than 1.35 million publications, and NEVDIS enabled more than 790 million transactions.

A significant achievement during the last year was the funding of the Safety Program by NEVDIS income. NEDVIS surplus also funds Austroads administration. This progress towards self-funding has allowed membership financial contributions to remain capped at 2016–17 levels, which was a 10% decrease on the 2015–16 contributions.

In December 2019 I had the pleasure of launching the Guide to Temporary Traffic Management in Brisbane. The Guide is the culmination of a four-year collaborative project between Austroads, Australasian transport agencies and industry. The 10-part Guide has been designed to improve the safety of people working on our roads and all road users. The safety at road worksites project is a board priority that will continue into 2020-21 with delivery of the Temporary Traffic Management Training Framework and Prequalification Scheme. This important work will play a significant role in safeguarding road workers and road users at temporary sites.

As a board priority project, the safety at road worksites project was supervised by then Austroads Deputy Chair Shane Gregory. Shane provided leadership to the project and was crucial to its delivery. In 2020 Shane was awarded the Austroads Medal, only the 11th recipient in the awards 30-year history. The Medal is only awarded to people who have made an exceptional contribution to Austroads and achievement of its objectives over a sustained period. Shane's well-deserved award was in recognition of his leadership of the project and his more than seven years service to the Austroads Board, more than three years as Deputy Chair.

Warm congratulations are due to each of the people recognised with Austroads awards. The awards recognise the contribution of individuals to the Austroads work program. In particular, I acknowledge the work of the people who received outstanding service awards: Mick Savage from IPWEA, John Donbavand from NZTA and Michael Tziotis from ARRB. These three outstanding recipients have served on Austroads Task Forces and working groups for many years, directing projects and providing expert advice. Thank you to all award recipients for your exceptional service.

The 2019-20 year continued to see restructures within transport agencies resulting in changes to the Austroads Board.

In January Shane Gregory resigned from the Board. At the July 2020 meeting Louise McCormick was appointed Deputy Chair. Louise is General Manager for Transport and Civil Services Division with the Northern Territory's Department of Infrastructure, Planning and Logistics. She has served on the Austroads Board for nearly three years and is an Executive Engineer, Chartered Fellow and Senior Civil/Structural Engineer with 19 years experience in the public and private sectors. Louise has played a key role in the ongoing success of the Austroads Board and I am looking forward to working with her as Deputy Chair.

This year I have also had the pleasure of welcoming James Corrigan (Australian Capital Territory), Robyn Seymour (Victoria), Jessica Hall (Commonwealth), Gary Swain (Tasmania) and John Hardwick (New South Wales).

In addition to changes at Board level, we had significant changes to Austroads senior staff. In October David Francis, Austroads Chief Operating Officer retired. David had worked at Austroads for more than 16 years.

Neil Scales launches the *Austroads Guide to Temporary Traffic Management*

> "I have been impressed with how adaptable Board members, staff, task force members and project teams have been as we have moved to online collaboration in the face of COVID.

He was awarded the Austroads Medal for Outstanding Service and the Centre for Pavement Engineering Education Certificate of Appreciation for his significant contribution to the professionalism of Austroads and its strong relationships with stakeholders. He was replaced by Dr Geoff Allan. Geoff's most recent experience was as Chief Operating Officer for the National Transport Commission.

In April, Nick Koukoulas, Austroads Chief Executive, retired after more than five years in the role. Nick provided outstanding leadership in this role. In particular he moulded business units and program areas into focused teams, commercialised NEVDIS, and acquired TCA. In June, Geoff Allan was appointed Austroads Chief Executive. Since joining Austroads Geoff has fostered the development of a new strategic plan and been instrumental in reshaping the organisation to prepare it to deliver the new plan starting in July.

I have confidence that the new plan will continue to enhance the high level of respect afforded Austroads. Respect built on years of delivering high quality research and technical guidance. The quality of work is due to the diligence and commitment shown by Austroads programs and their project managers. On behalf of the Board I offer thanks for your energy and dedication. The National Exchange of Vehicle and Driver Information System (NEVDIS) team has also delivered an excellent result both financially and operationally.

Thank you to everyone who has contributed to Austroads work over the last 12 months. I have been impressed with how adaptable Board members, staff, task force members and project teams have been as we have moved to online collaboration in the face of COVID. While I look forward to the times we can physically meet, I believe these new methods will serve us well into the future as we work together to deliver better transport outcomes for all.

Neil Scales, OBE
Chair, Austroads

Chief Executive's Report

In the short time I have worked with Austroads I have been impressed with the capability, professionalism and dedication of the Austroads team. The first half of 2020 has been dominated by disruption from bushfires, floods and then the COVID-19 pandemic. Through these challenges staff, working groups and task forces have quickly and seamlessly adapted. Working remotely has required everyone, myself included, to learn new skills to ensure we could continue to deliver the research work program and essential services. As a result, there have been no impacts on NEVDIS services and only a handful of research projects have been delayed.

We have continued to recruit and induct new staff remotely. This has been essential as we work to establish a high performing executive team to guide the Austroads Group. In 2020 Leesa Schibeci joined us as Financial Controller. Later in the year the Executive Team will be expanded with the recruitment of Sharon Tooley as Chief Information Officer and Astrid Hekking as General Manager Operations. The executive team also includes Stuart Ballingal, Executive General Manager TCA. The team will provide consistent corporate management across operations in Sydney and Melbourne as we deliver increasingly complex products and services to benefit our members.

The union of TCA, Austroads and NEVDIS into three business units under the corporate governance of the Executive Team will deliver new opportunities for our members and benefits to the community. By harnessing the data resources available through all three units, and through strategic projects such as those delivering the national road infrastructure data standard and the Austroads technical specifications, we have opportunities to deliver microeconomic improvements. The expertise of all three teams has the potential to develop new products and services that will make our road freight more productive, our road networks safer and our journeys more consistent.

This year we have been particularly focussed on developing the Strategic Plan 2020-24 across the Austroads and NEVDIS business units and putting in place systems to support its delivery. The plan builds on our strengths of delivering high quality technical guidance and collectively identifying and solving Australasian transport problems. It challenges us to produce products that are used and are useful. In response we are introducing processes to help the Programs and Task Forces consider product lifecycles and to actively plan for the ongoing maintenance of our Guide and technical content and the delivery of digital tools and data products. Ensuring Austroads has IT systems that allow us to best support members' needs will be a focus in the first year of the plan.

We are continuing to reduce the number of projects while increasing their complexity and potential impacts. This will be particularly noticeable in 2020-21 when we will embark on 33 new work program projects and six NEVDIS enhancement projects.

NEVDIS continued to provide strong financial returns and the team are to be congratulated for their performance throughout the year. We are expecting that the impact of COVID-19 on car sales is likely to impact next year's revenue. We are also considering the potential impact of changes to personal identification services on NEVDIS income and examining other potential revenue streams from deidentified data products.

Finally, I acknowledge both Nick Koukoulas and David Francis who retired this financial year. I appreciated their support and welcome to the organisation and wish them all the very best for the future. I would also like to thank the Austroads Board and Task Force members and Austroads staff. I am excited for Austroads and our future and look forward to continually challenging us all to deliver better outcomes for our members and community.

Dr Geoff Allan
Chief Executive, Austroads

Dr Geoff Allan

> "The expertise of all three teams has the potential to develop new products and services that will make our road freight more productive, our road networks safer and our journeys more consistent.

2019–20 Financial Summary

INCOME AND EXPENDITURE TO 30 JUNE 2020

	Consolidated
Revenue	26,795,457
Expenses	24,058,751
Surplus/deficit for the year	**2,736,706**

STATEMENT OF FINANCIAL POSITION AS AT 30 JUNE 2020

	Consolidated
Total assets	40,854,769
Total liabilities	3,766,001
Net assets	**37,088,768**
Accumulated surplus b/f	34,352,062
Surplus/deficit for the year	2,736,706
Total equity	**37,088,768**

Work Program

There were 110 projects undertaken in 2019–20, 104 projects continuing from previous financial year and six new projects.

The work restrictions due to COVID-19 have influenced the work program and have caused delays in delivering some projects.

Forty-three projects were completed from a scheduled 59. Of these, 33 were completed on time or within three months of scheduled completion, four were completed between three and six months late, three were completed between six and nine months late and four were completed between nine and twelve months late. Three projects were deferred or cancelled.

Thirteen projects that were due to be completed in 2020-21 financial year will continue in 2020-21. Of these, eight are less than three months late, three are between six and twelve months late, three were more than twelve months late. Of those more than twelve months late, two have subsequently been completed. Additionally, Austroads has changed the consultant undertaking the remaining project, which should remedy many of the causes of the delay.

In 2020–21, 65 projects will carry over from 2019–20. In July 2020, the Board approved 33 new projects to commence in the 2020-21 financial year, making a total of 98 projects. New project proposals scheduled to be considered by the Board for approval in April, were deferred until July.

STATUS OF AUSTROADS WORK PROGRAM

Year	Number of projects						
	Completed	Cancelled or Deferred	> 12 months + late	6–12 months late	< 6 months late	On time	Total Active Projects
2015–16	62	3	2	1	22	58	148
2016–17	46	1	1	3	14	60	125
2017–18	43	1	0	0	4	66	114
2018–19	32	0	2	3	12	55	104
2019–20	43	3	3	3	9	49	110

Governance

Austroads Ltd is a company limited by guarantee under the Corporations Act 2001.

Austroads is governed by a Board of directors. There is currently one chief executive or a senior executive officer from each member organisation.

The Austroads national office, based in Sydney, provides secretariat support to the Board. The Chief Executive is the Company Secretary. There is also an Executive Committee.

Neil Scales OBE, Director-General of Queensland Department of Transport and Main Roads, was re-appointed Chair on 22 November 2018. The appointment is for a two-year term.

Shane Gregory, General Manager State Roads for the Department of State Growth, Tasmania, was also re-appointed Deputy Chair on 22 November 2018 for a two year term. Shane resigned in 31 January 2020.

At its July 2019 meeting the Austroads Board determined new appointments to leadership positions on the Board and Executive Committee.

Board members

- Neil Scales QLD DTMR (Chair)
- Shane Gregory DSG TAS (Deputy Chair) (until 31 January 2020)
- Louise McCormick DIPL NT
- Tony Braxton-Smith DIT SA

Executive members

- Nick Koukoulas (Chief Executive) – until 15 April 2020
- Geoff Allan (Chief Executive) – from 16 April 2020

Activities

Austroads:

Conducts strategic research which helps road agencies address current and emerging issues.

Maintains and publishes Guides to promote a nationally consistent approach to the design, maintenance and operation of road networks.

Facilitates knowledge sharing by widely disseminating research outputs, conducting seminars and promoting the use of Austroads work.

Conducts business activities on behalf of Australasian road agencies.

Fosters international collaboration by engaging with and supporting international road organisations.

NEVDIS:

Exchanges information about vehicles and driver licenses across state borders.

Prevents fraud and theft by ensuring ‘one vehicle, one Vehicle Identification Number (VIN)’ and ‘one person, one driver licence

TCA:

Administers the National Telematics Framework, including its rules, specifications, agreements, digital infrastructure and other supporting services.

Provides assurance services for telematic applications and associated information and data services.

Structure

Austroads uses a program management approach to deliver the strategic plan.

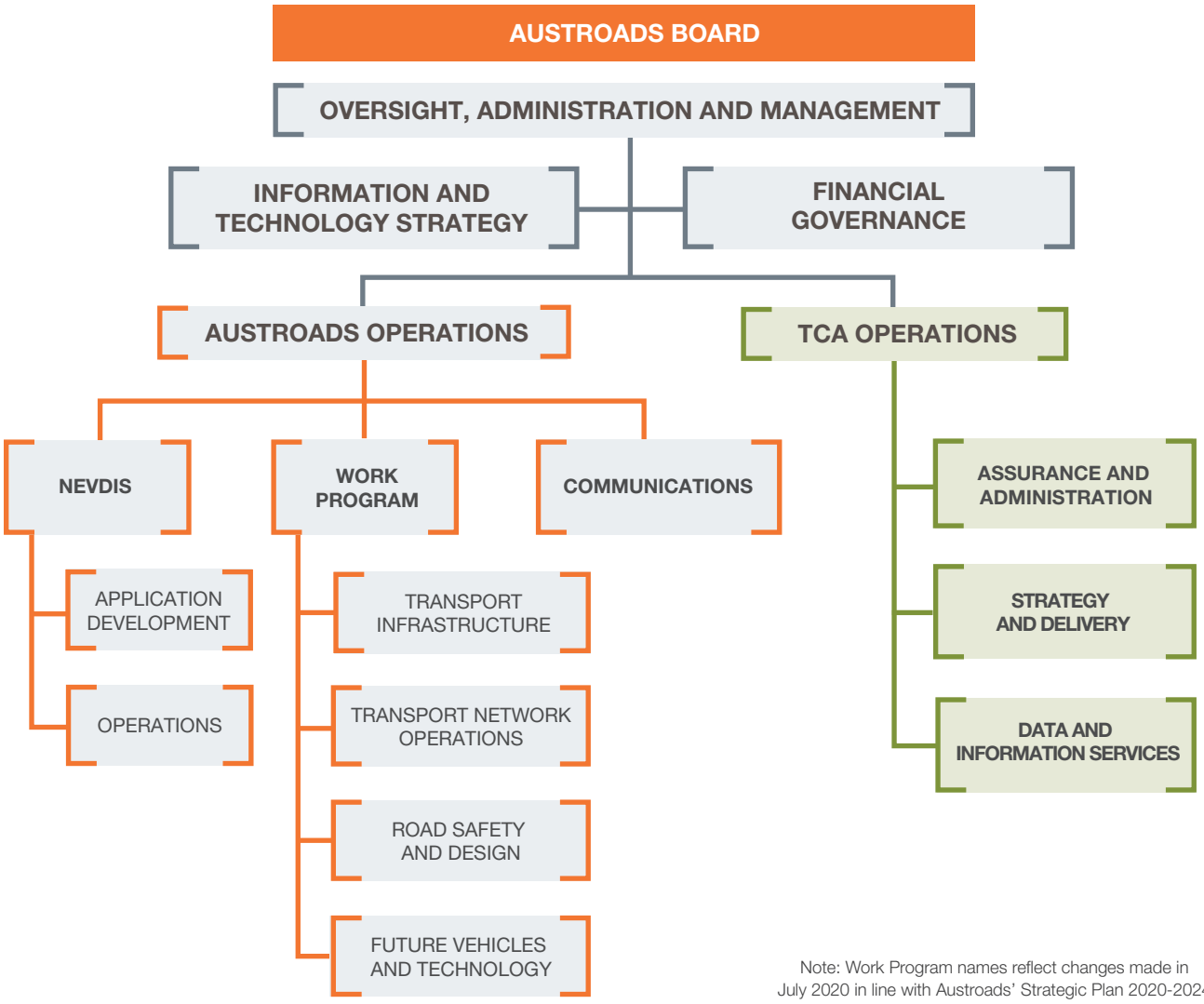
Each program focuses on an operational area of the road system and undertakes a range of projects which contribute to improving road transport in Australia and New Zealand.

Austroads relies on the expertise of its member organisations to achieve its outcomes, and member organisation staff play an integral role in Austroads operations. This encourages a collegiate, collaborative approach and facilitates learning, development, sharing and a high level of consistency across jurisdictions.

Program Managers are responsible for the development and management of annual work programs and provide reports to the Board. The task forces identify areas of interest and develop project proposals, oversee projects, promote the dissemination of results and provide a forum for the exchange of information between Austroads' member and related organisations.

> "Austroads relies on the expertise of its member organisations to achieve its outcomes, and member organisation staff play an integral role in Austroads operations.

AUSTROADS MANAGEMENT STRUCTURE



Note: Work Program names reflect changes made in July 2020 in line with Austroads' Strategic Plan 2020-2024

Awards

Each year, Austroads Awards recognise the contribution of individuals from member organisations to our work program.

The people managing Austroads projects and serving on task forces and working groups often undertake that work in addition to their normal job. The awards acknowledge their efforts and commitment on which our success depends. In 2019-20, Austroads recognised the following people for their exceptional service.

Austroads Medal

SHANE GREGORY – DSG TAS

Shane Gregory has become the 11th recipient of the Austroads Medal in its more than 30-year history.

The Austroads Medal is only awarded to people who have made an exceptional contribution to Austroads and achievement of its objectives over a sustained period.

Shane served on the Austroads Board from September 2012 to February 2020. He became a member of the Executive Committee in September 2013 and was Deputy Chair from October 2016 until his resignation.

Shane led the Austroads Board Strategic Project Safety at Road Worksites, the major component of which was the development of the new Austroads *Guide to Temporary Traffic Management*, released in December 2019. This Guide is now being implemented in jurisdictions throughout Australia and will play a major role in safeguarding road workers and road users at temporary sites.

Austroads Outstanding Service Award

MICK SAVAGE – IPWEA

Mick has served as the Australian Local Government Association Technical Advisor to the Austroads Asset Task Force for 15 years. In that time, he has provided expert advice to the task force, project managed three projects and actively participated in all other projects.

JOHN DONBAVAND – NZTA

John Donbavand was one of the first Austroads committee members from New Zealand. He saw the benefits Austroads membership would bring New Zealand and the contribution New Zealand could make to Austroads. John chaired the Austroads Pavement Reference Group in the late 1990s. He later became a member of the Pavements Task Force in 2014.

MICHAEL TZIOTIS – ARRB

Michael has made an outstanding contribution to Austroads and its member road agencies over his 46-year career in the industry. He has been heavily involved in the development and periodic review of the national Austroads best practice guides in road tunnels, road design and road safety. Michael has authored more than 74 Austroads publications.

Shane Gregory was awarded the Austroads Medal in June 2020. Picture from left are Gary Swain, Deputy Secretary, Transport Services – Department of State Growth Tasmania (Austroads Board member); Shane Gregory, Deputy Secretary, Infrastructure – Department of Health, Tasmania; and Kim Evans, Secretary – Department of State Growth Tasmania.

Mick Savage is presented with his Outstanding Service Award

Austroads Special Commendation Awards

Safety Program

BERNARD CARLON – TFNSW

Bernard Carlon has made a significant contribution to the work and objectives of Austroads including his: leadership, contributions, support and project resourcing to the Road Safety Task Force; advice on key road safety risks, road safety direction, and strategy and action plan development; and leadership and influence in systems and tools for road safety decision making.

Austroads Achievement Awards: Assets Program

STEVE HALLIGAN – MR WA

Steve Halligan has been an active contributor to Austroads' specialist materials work groups over many years and provided valued input into many projects. He has represented Austroads on the Australian Standard Committee CE 006, a committee he has chaired for many years (a role he will continue to fulfil into his retirement).

DR ROBERT URQUHART – ARRB

Dr Robert Urquhart has a long standing and positive track record of leadership, timely delivery and high value outputs for national research projects in the area of bituminous binder technologies. Robert is also the Austroads expert representative on the Standards Australia committee for bitumen and related materials for roads.

Austroads Achievement Awards: Network Program

ROBYN DAVIES – QLD DTMR

Robyn Davies (below, second from right) managed a complex project that updated Austroads pedestrian planning and design guidance. Robyn's exemplary leadership delivered outcomes that support the planning and design of street environments that are comfortable, safe, inclusive and attractive for pedestrians.

VINCENT VONG – DOT VIC

Vincent Vong managed a project that investigated security vulnerability of intelligent transportation systems and devices. Vincent successfully brought together member agencies to exchange information on their cybersecurity challenges and management of their ITS assets, systems and communications networks.

DAVID MITCHELL – BITRE

David Mitchell managed a project that used telematics data provided by Transport Certification Australia (TCA) to better understand freight movements.

Austroads Achievement Awards: Safety Program

JOSEPH LE – TFNSW

Joseph Le leads the Roads and Roadside Theme Group and has managed projects to review the Guide to Road Safety and improve road safety, road infrastructure and road design.

SUE PHILPOTT – TFNSW

Sue Philpott has provided exceptional support to the Austroads Safety Barrier Assessment Panel including establishing the Barrier Assessment Portal, coordinating industry events, managing applications and supporting their assessment, and developing templates and materials.

TIM RISBEY – BITRE

Tim Risbey delivered a staged project to incrementally solve a major issue with non-fatal crash data. The project aims to provide a national perspective of serious injury data and has involved multiple stakeholders including those outside the roads and transport field, legal considerations, information management and managing personal records complying with privacy requirements.

Robyn Davies presented with the Austroads Achievement Award at DTMR QLD

World Road Association

PIARC, the World Road Association, held its annual meetings in Abu Dhabi, UAE, through the week of 6–10 October 2019. During the week, meetings were held for the Strategic Planning Commission, the Executive Committee, the full Council of PIARC, the Communications Commission and the National Committees Group.

The World Road Congress, held to coincide with the meetings, attracts 3,000 participants over the five-day event. Austroads proudly sponsored the Congress prize for the Safety of Road Users and Workers. The prize was awarded to Alberto Mendoza and Maria Cadengo from Mexico for their paper *Efforts in Mexico to implement a Road Safety Audit System*. The paper recommends making provisions in the *Road Audit Safety Manual* a compulsory requirement for all road design projects.

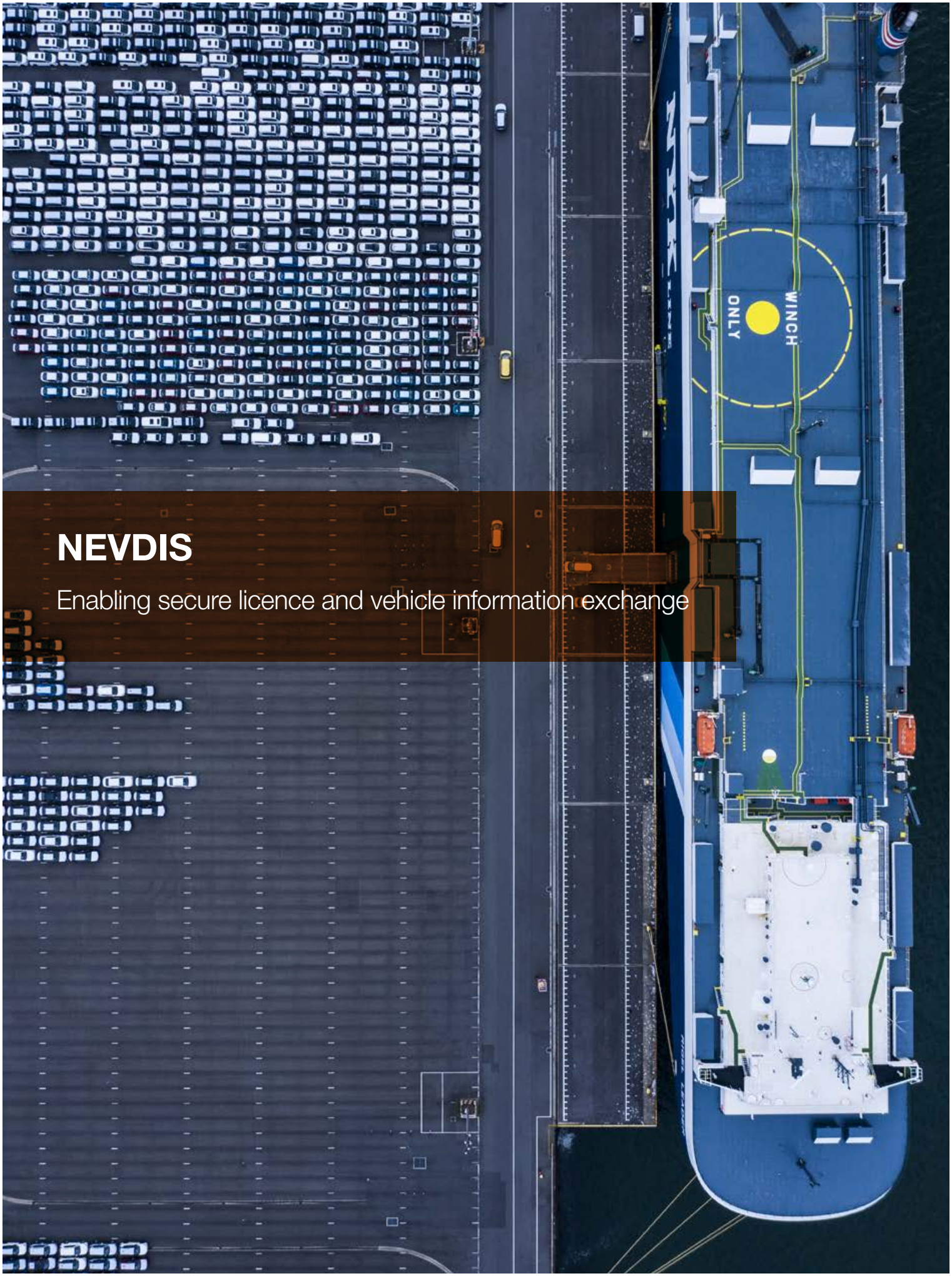
The Deputy Prime Minister of Australia, The Hon Michael McCormack MP, attended the Congress for three days.

During that time, he attended bilateral meetings with Ministers from around the world and senior UAE officials. The Australian delegation, organised by Roads Australia and supported by Austroads, hosted a dinner with the Deputy Prime Minister and Australian and New Zealand ambassadors and trade commissioners.

The key themes of greatest interest were connected and automated vehicles, particularly the societal impacts of automated vehicles and preparedness for their arrival. Road safety, asset management and resilience were also topical. The next World Road Congress will be held in the Czech Republic in October 2023.

> “The key themes of greatest interest were connected and automated vehicles, particularly the societal impacts of automated vehicles and preparedness for their arrival.

Presentation of the Austroads sponsored prize for the Safety of Road Users and Workers by The Hon Michael McCormack MP, Neil Scales OBE, and Claude Van Rooten to Alberto Mendoza.



NEVDIS

Enabling secure licence and vehicle information exchange

Overview

The National Exchange of Vehicle and Driver Information System (NEVDIS) was established in 1998 and is owned by Austroads on behalf of the eight state and territory jurisdictions who contribute information.

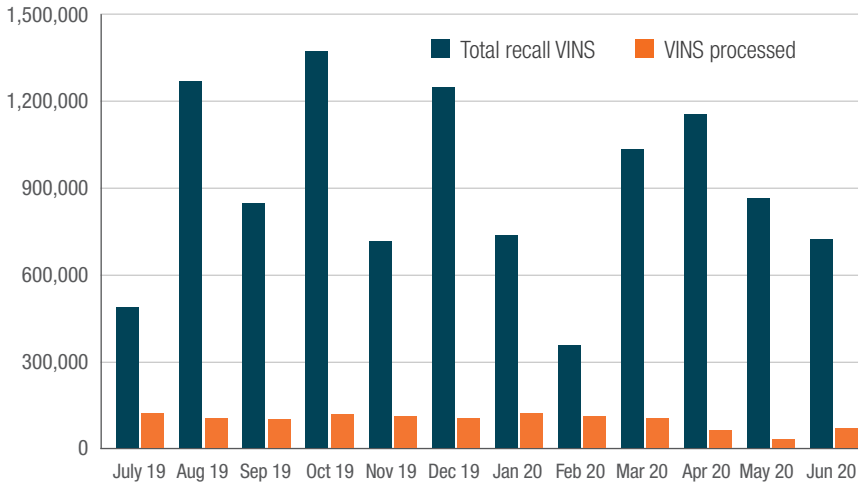
NEVDIS is a national system which enables road authorities to interact across state borders and directly supports the transport and automotive industries.

This essential customer service system exchanges national information about vehicles and driver licences. Its primary purpose is to prevent fraud and theft by ensuring 'one vehicle, one Vehicle Identification Number (VIN)' and 'one person, one driver licence'.

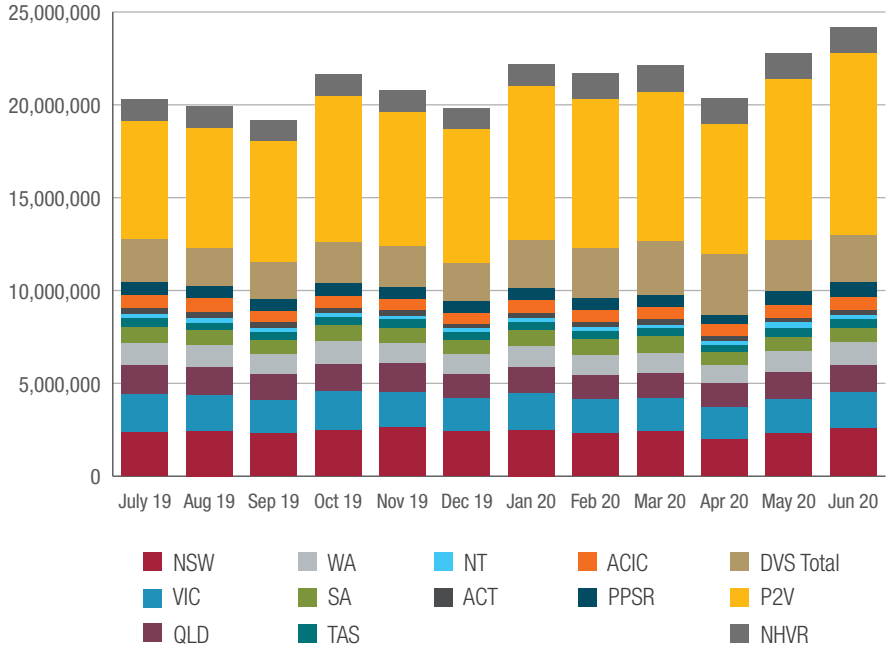
In addition to information supplied by road agencies, NEVDIS collects VIN data for compliance from vehicle wholesalers and information on stolen vehicles from police.

It also provides information to public and private sector organisations to facilitate provenance checking on vehicles, matching of biographic details on licenses, motor vehicle insurance underwriting and vehicle safety recalls.

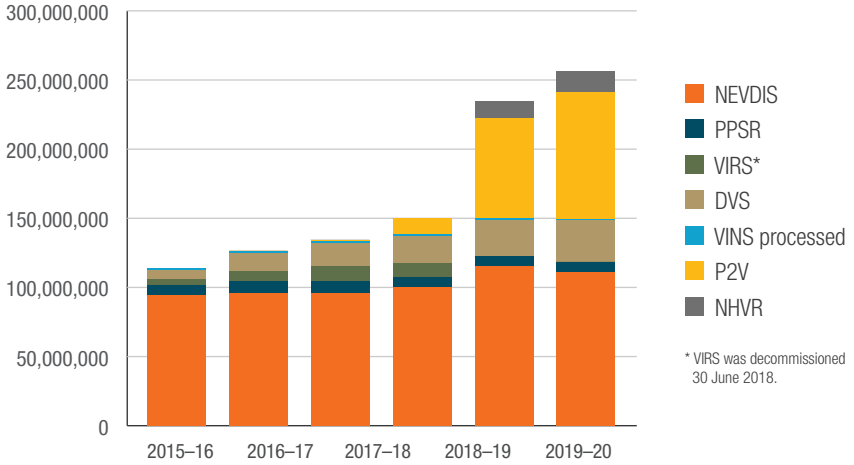
NEVDIS VIN TRANSACTIONS 2019–20



NEVDIS TRANSACTIONS 2019–20



NEVDIS TRANSACTIONS FIVE YEAR COMPARISON



* VIRS was decommissioned 30 June 2018.

Highlights

The NEVDIS system processed 256 million transactions in 2019–20, a 9% increase from 2018–19. This is primarily due to increases in the Plate to VIN Service (up 27.5%) and the Document Verification Service (up 12.7%). The number of VINs subject to safety recall activities has eased by 15% during the year reflecting the reduction in vehicles requiring the Takata airbag inflator replacement.

While NEVDIS participant volumes have slightly decreased (-4%) against the previous year, volumes varied across the states and territories ranging from -23.4% to +8.7%. The National Heavy Vehicle Regulator volumes have increased by 20%.

NEVDIS availability has remained at 99.9% of scheduled uptime.

Significant projects

- The NEVDIS re-write was completed and promoted to the production environment mid-October 2019. The go-live experienced minor issues but these were rectified by the first week in November with little to no impact to stakeholders.
- The Wide Area Network project is 95% completed with one datacentre from one agency pending connection with expectation of completion 2nd quarter FY 2020/21.
- The National Heavy Vehicle Registration System celebrated its second year of operation. The NEVDIS Rewrite go-live did create some data anomalies for NHVR with NEVDIS and NHVR members working together to initially mitigate and then resolve.

Other outcomes

In late 2019, NEVDIS developed a new service supporting the National Heavy Vehicle Regulator to deliver its Regulatory Compliance Mobility Solution (RCMS). RCMS is a valuable tool for NHVR's Safety and Compliance Officers allowing quick and easy roadside access to important national heavy vehicle data. This information allows NHVR's officers to make informed decisions during safety and compliance operations resulting in better safety outcomes for all road users.

While volumes are down 15%, NEVDIS averages 11 safety recalls per month relating to Takata airbag inflators. NEVDIS will continue to support vehicle manufacturers by conducting related safety recall extracts free of charge through to the end of 2020. NEVDIS is also working with the Australian Competition and Consumer Commission to provide supporting data to help ratify manufacturer's reported Takata Airbag rectification works.

The Plate to VIN service growth eased against the previous financial year's record but was still strong at +27.5%. This service along with many others had been impacted by the COVID-19 shutdowns in March and April 2020 but saw greater than average demand in late May and June.

The Personal Property Security Register transaction volumes followed a similar profile to P2V's with a more modest growth of +5.7%. NEVDIS is in discussions with the Australian Financial Security Authority regarding the introduction of additional data to be presented on the PPSR Certificate to better inform potential vehicle purchasers. Discussions are at an early stage but could see the new data integration occur this financial year.

The Document Verification Service saw growth of +10% for public sector activities with the uptake of JobKeeper and JobSeeker services driving the increase. Private sector volumes grew by a little over 15% mainly reflecting the need for proof of identity verification with the increased adoption of online services during the COVID-19 lockdown.

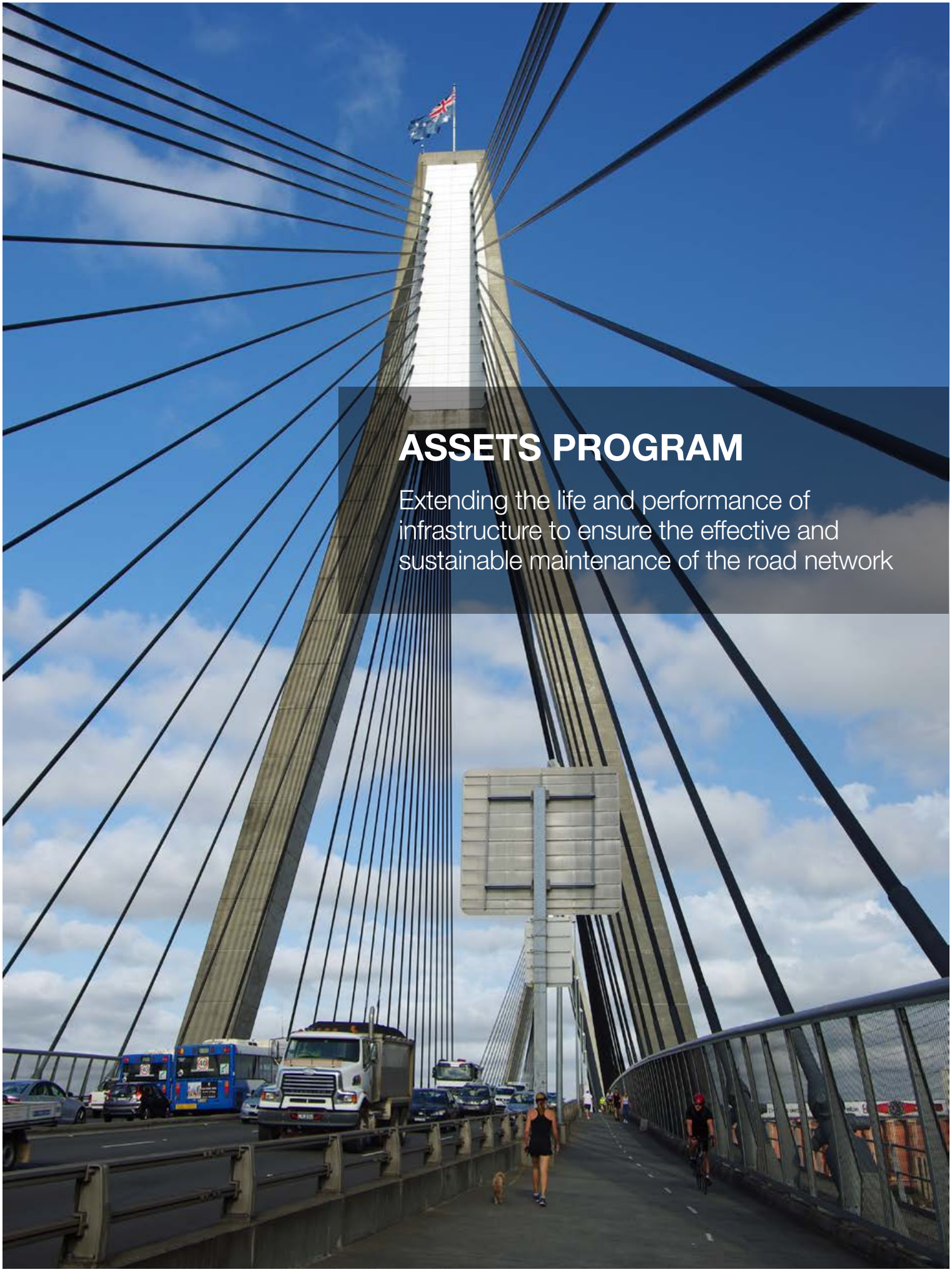
Future Focus

NEVDIS remains not-for-profit but continues to seek opportunities in both operational efficiencies and additional revenue streams which may partially or fully negate the need for funding by jurisdictions.

NEVDIS revenue funds 100% of Austroads administrative costs as well as components of the Austroads program of work. This allows member contributions to be fully utilised in the delivery of the Austroads research programs.

NEVDIS is now building new services leveraging the platform and architecture delivered through the NEVDIS re-platform and rewrite projects. These new services will benefit both NEVDIS and Austroads stakeholders and provide opportunities to add new products to existing services and develop a new suite of services previously not possible.

“ NEVDIS revenue funds 100% of Austroads administrative costs as well as components of the Austroads program of work.



ASSETS PROGRAM

Extending the life and performance of infrastructure to ensure the effective and sustainable maintenance of the road network

Overview

The strategic priority of the Assets Program is to extend the life and performance of infrastructure to ensure the effective and sustainable maintenance of the road network.

Rapid change in the operating environment for the Assets Program continues. Areas of change include sustainability, recycling, circular economy, digitisation, big data, connected and automated vehicles, road user expectations, financial capacity, adverse weather events and pandemics.

The road construction industry is under pressure to help solve Australia's recycling crisis. The make-up of roads lends itself well to the incorporation of recycled materials. However, this is not as simple as replacing raw road construction materials with recycled materials such as glass, plastic or rubber. The right approach must be taken.

In support of member agency operations, the Austroads Guides need continual review and update to ensure they reflect the latest developments and technologies, and this has been a key focus for the Assets Program in 2019–20. As an input to this around 40 projects were progressed across the Assets work streams.

Work streams

- Emerging technology – materials development
- Strategic management of road infrastructure
- Managing loading impacts
- Pavement management
- Bridge management
- Managing for climate change
- Sustainable roads and roadsides
- Managing rural and remote roads

People

ROSS GUPPY, PROGRAM MANAGER ASSETS

Ross has over 30 years' experience in the road and transport infrastructure sector, including 28 years with the Queensland Department of Transport and Main Roads (TMR). During Ross's time with TMR, he held various specialised engineering and senior executive roles across the technologies of Pavements, Materials, Geotechnical, Project Delivery, Asset Management, and Road Design and Standards.

He held a pivotal role in managing TMR's liaison with academia and key industry bodies including AAPA, the ARRB Group, CCF, QMCA, Austroads, and IPWEAQ. As Program Manager Assets, he is a keen advocate for forging and maintaining strong industry relationships.

Ross currently chairs five Austroads task forces covering asset management and the more specific technical disciplines of bridges, tunnels, pavements, and project delivery. With strategic direction from Austroads Board, these task forces drive the research and knowledge sharing activities which support Austroads key deliverables.

PROGRAM COORDINATOR: ELIZ ESTEBAN

Program Governance

ASSETS TASK FORCE

Michelle Baran, QLD DTMR	Fiona McLeod, DSG TAS
David Darwin, NZTA	Georgia O'Cianain, DITRDC
Kym Foster, ALGA	Shane Tepper, DIPL NT
David Jansen, DoT VIC	Andrew Cooper, TfNSW
Tom McHugh, MR WA	Murray Erbs, IPWEA
Dr Michael Moffatt, ARRB	Andrew Hargrave, DSG TAS
Ramon Staheli, NTC	Bryan Matyorauta, DIPL NT
Karl Cloos, TCCS ACT	Nelson Mendoza, DIT SA
George Diamand, TCCS ACT	Mick Savage, IPWEA
Andrew Golding, QLD DTMR	Liam Terris, TfNSW
Qindong Li, MR WA	

PAVEMENTS TASK FORCE

David Alabaster, NZTA	Andrew Papacostas, DoT VIC
Stuart Dack, AustStab	Carlos Rial, AAPA
Graham Hennessy, AustStab	Hugo Van Loon, DIT SA
Paul Keech, ALGA	Karl Cloos, TCCS ACT
John Nichols, CCAA	John Donbavand, NZTA
Bryan Pidwerbesky, CC NZ	Phil Herrington, WSP
Dr Robert Urquhart, ARRB	Kym Neaylon, CPEE
Dr Didier Bodin, ARRB	Mike Pickering, QLD DTMR
Anna D'Angelo, AAPA	Philip Stacey, DIPL NT
Sam Henwood, TfNSW	Barry Walker, DSG TAS
Les Marchant, MR WA	

BRIDGES TASK FORCE

Jay Brewster-O'Brien, DIPL NT	Adrienne Clarke, DoT VIC	Christian Christodoulou, TfNSW
Yew-Chin Koay, DoT VIC	Adam Lim, MR WA	Phil Molloy, DIT SA
Andy Ng, DoT VIC	Parvez Shah, TfNSW	Vincent Tang, DSG TAS
Andrew Wong, QLD DTMR	Barry Wright, NZTA	

ROAD TUNNELS TASK FORCE

Bob Allen, ATOG	Nigel Casey, TfNSW	John Hawes, AFAC
David Kimpton, DoT VIC	Nigel Lloyd, NZTA	George Mavroyeni, AECOM
Geoff McKernan, Transurban	Mohamed Nooru, QLD DTMR	Tony Peglas, ATS
Georgia Stylianos, DoT VIC	Michael Tziotis, ARRB	John Venables, MR WA
Yanyan Xiao, DIT SA	Dr Richard Yeo, ARRB	

PROJECT DELIVERY TASK FORCE

Harold Carn, DIT SA	Leo Coci, MR WA	Adrian Paine, DSG TAS
Graham Hobbs, QLD DTMR	Colin MacKay, NZTA	Andrew Williams, Major Road Projects VIC
Belinda Stopic, MR WA	Richard Underhill, DIPL NT	
Dr Richard Yeo, ARRB	Chris Harrison, TfNSW	

TECHNICAL WORKING GROUPS

Bituminous Surfacings Working Group
chaired by a member agency representative and comprises road agency staff, ARRB and industry practitioners. Reviews projects related to bituminous sprayed seals and the performance of bitumen and polymer modified binders.

Asphalt Research Working Group
chaired by a member agency representative and generally comprises road agency practitioners, ARRB and AAPA representatives.

Pavement Structures Working Group
comprises representatives from member agencies, AAPA, AustStab and ARRB. Reviews projects relating to pavement design and performance.

Road Authority Pavement Marking Working Group
comprises agency and industry practitioners who are working to update national standards and nationally harmonise pavement markings, performance-based requirements and test methods. This work is key as consistency in pavement markings will support optimised asset management outcomes and future connected and automated vehicle operations.

Utilities in Road Reserves Working Group
comprises agency practitioners who are working together to ensure a united position for road agencies in response to the ever growing and complex arrangements related to utilities in road reserves.

Occupational Health and Safety Working Group
shares information about issues and changes to WHS practices for improved safety outcomes.

Prequalification Working Group
manages the highly successful national prequalification scheme for major contractors.

AGREED PRACTICE OUTPUTS

- Guide to Asset Management
- Guide to Pavement Technology
- Guide to Bridge Technology
- Guide to Road Tunnels
- Guide to Project Delivery
- Test Methods
- Technical Specifications
- Work Tips and Technical Notes

Program Activities

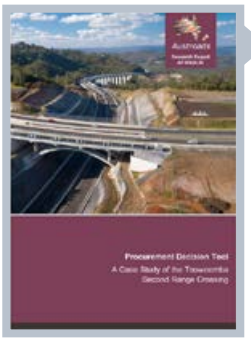
> Austroads can access the latest research on road assets and materials and an opportunity to influence policy and projects in return for sponsorship.

Highlights

- We initiated new Austroads Technical Specifications to make contracting and tendering easier for industry and government when constructing and maintaining roads and bridges across Australia and New Zealand. The specifications will save time and money in the long term, deliver efficiencies to industry, encourage contemporary practices and reduce 1,000 specification documents to 100. As at July 2020, 14 new specifications and six accompanying test methods had been published.
- Our partnership with the Smart Pavements Australia Research Collaboration Hub (SPARC Hub), a collaborative think-tank led by Monash University, means Austroads can access the latest research on road assets and materials and an opportunity to influence policy and projects in return for sponsorship. In 2019-20, Austroads managed seven SPARC Hub projects including Advanced use of recycled materials in pavement construction and Quantifying the benefits of intelligent compaction for unbound/subgrade pavement performance.
- In response to feedback from transport agencies about the need to retrofit rather than maintain tunnels due to excessive congestion, deteriorating structures, technological improvements and higher safety standards, Austroads produced a new Part 4 to its *Guide to Road Tunnels* in August 2019. This Part advises on types of refurbishment, developing project requirements, considering geometric alignment of cross-sections and other issues.

Strategic management of road infrastructure

The focus on strategic asset management has grown internationally, with a range of guidance materials being produced such as the ISO 55000 standards series, the international infrastructure management manual and other guidelines. Australasian road agencies are responding to these developments and aligning their processes with world best practice. Austroads is supporting this response by developing national research and technical projects and updating its Guides.



In **June 2020**, Austroads published a research report on a case study application of a new methodology called the Procurement Decision Tool that guides transport agencies through the infrastructure procurement process to significantly advance Value-for-Money in the delivery of infrastructure .

Developed by the Queensland University of Technology, the tool was trialled on a major road project, the Toowoomba Second Range Crossing, in Queensland.

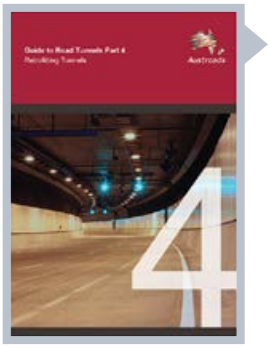
The tool finds the best mode of procurement for a road infrastructure project, based on the state of the market and the needs of the project. It identifies the most efficient contract packaging system and whether to use collaborative or competitive contracting to improve quality, timeliness and value for money.

Download the report:

austroads.com.au/publications/project-delivery/ap-r624-20

View the webinar:

austroads.com.au/publications/project-delivery/web-r624-20



There is an increasing need for tunnels to be retrofitted due to excessive congestion on roads around tunnels, deteriorating structures, technological improvements and demand for higher standards of safety.

Austroads' new part to *Guide to Road Tunnels.* published in **August 2019**, supports Australia and New Zealand road agencies when they are retrofitting or refurbishing tunnels, or replacing assets in tunnels.

Part 4: Retrofitting Tunnels advises when to refurbish and types of refurbishment, and provides processes for developing project requirements, geometric considerations, and traffic management information including signs and lighting.

Part 4 also contains guidance on fire protection and evacuation systems, mechanical systems, electrical and electronic components, and energy efficiency.

Download the Guide:

austroads.com.au/publications/tunnels/agrt04

View the webinar:

austroads.com.au/publications/tunnels/web-agrt04-19

CASE STUDY

Tunnel emergency exit designs emerging in practice

In 2018 Austroads published guidance on the design of emergency egress signages in road tunnels.

In the absence of an AS/NZ design standard jurisdictions had developed bespoke requirements for emergency signage. Requirements varied between jurisdictions and between tunnels within the same jurisdiction, reflecting requirements that have evolved from project to project.

The project requirements for Sydney's WestConnex New M5 project as well as other existing Australian and New Zealand tunnels were a key input into the report.

The report was finished before the completion of the detailed design for Melbourne's West Gate Tunnel Project and was subsequently used as a basis for the tunnel emergency egress signage detailed design package.

Tony Peglas, Technical Director, Infrastructure, Aurecon, worked on the detailed design of both the West Connex New M5 and West Gate Tunnel Projects.

"While the West Gate Tunnel Project is still to be constructed, the guidance has ensured a consistent, efficient and safe design of the emergency egress points within the tunnel, compatible with the tunnel control centre operational procedures," Tony said.

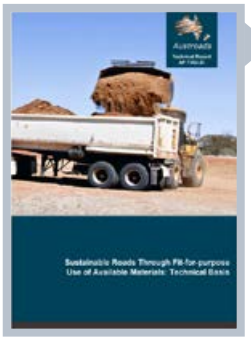
"The report is also useful for refurbishment of existing tunnels as demonstrated by recent signage upgrades undertaken in the Sydney Harbour Tunnel," he said.

The guidance is being worked into the next edition of the *Guide to Road Tunnels Part 2: Planning, Design and Commissioning*, easing its adoption into the design of new tunnels and refurbishment of existing tunnels.

Before and after Sydney Harbour Tunnel emergency exits

Managing rural and remote roads

While much of the population lives in towns and cities, the road network must also deliver road community services and accessibility in rural and remote areas. Marginal and non-standard materials are often the only cost-effective resource for road construction in these areas.



In **March 2020**, Austroads published two technical reports on the use of locally available materials for constructing and maintaining sealed and unsealed roads with low to medium traffic volumes. The project examined influences on material performance and demonstrated how a material can be made fit-for-purpose within different design scenarios and operating conditions. The project also examined life cycle costing to demonstrate how a material can be supported through its in-service life to ensure it performs as initially expected.

Download the reports:

austroads.com.au/publications/asset-management/ap-t352-20 (technical basis)

austroads.com.au/publications/asset-management/ap-t353-20 (evaluation and user guide)

View the webinars:

austroads.com.au/publications/asset-management/web-t353-20

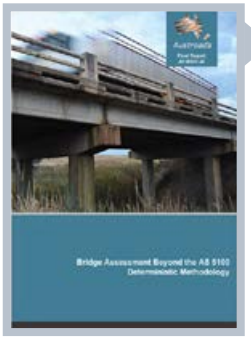
Introduction to the Materials Assessment Framework and its Application in Resource Assessment

Introduction to the Life Cycle Costing Framework and its Application to Unsealed Roads

Introduction to the Life Cycle Costing Framework and its Application to Sealed Roads)

Managing loading impacts

Growing numbers of heavy vehicles on the roads are demanding more from road and bridge assets. High productivity innovative freight vehicles with telematics technologies are leading the way, and road agencies are responding by better matching the asset capacity to demand.



In **March 2020**, Austroads published a research report demonstrating that a probability-based bridge assessment framework could be used to assess the safety of heavy vehicle freight access to problematic bridges.

A probability-based bridge assessment based on structural reliability theory provides objective and quantifiable measures of safety on a continuum. This framework was used to assess the implied safety levels of selected bridges in Australia.

Download the report:

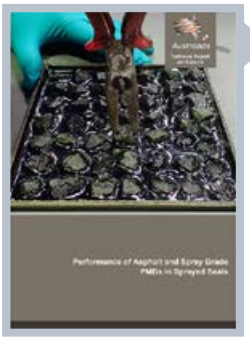
austroads.com.au/publications/bridges/ap-r617-20

View the webinar:

austroads.com.au/publications/bridges/web-r617-20

Materials development

The road network has traditionally been constructed of a wide range of local and manufactured materials to meet road user needs while being cost-effective. As the level of service expectations grow and with rapid technology change, it is important to undertake materials research to encourage fit-for-purpose and sustainable use of available materials for roads.



In **July 2019**, Austroads published a technical study that proposed merging four grades of polymer modified binders into two in the Australian specification. Extensive testing revealed the grades were comparable and showed similar performance in asphalt and sprayed seals.

Polymer modified binders are increasingly used in road construction as they resist permanent deformation and cracking better than conventional bitumen. Reducing the number of binder grades will simplify jurisdictional technical specifications and cut production costs as fewer tanks will be needed to store different products.

Download the report:

austroads.com.au/publications/pavement/ap-t345-19

View the webinar:

austroads.com.au/publications/pavement/web-t345-19

In **September 2019**, Austroads released a report which concluded that it would be inadvisable to entirely replace Australian general-purpose cement with cement containing 12% limestone.

AS 3972:2010 specifies that general-purpose cement may contain up to 7.5% limestone as a mineral addition. The cement industry had proposed that general-purpose cement contain up to 12% limestone without changing the cement designation from general-purpose or providing alternative cements in the market with lower limestone content.

Austroads commissioned research to investigate whether adoption of general-purpose cement containing 12% limestone could be justified with respect to performance and durability.

Download the report:

austroads.com.au/publications/bridges/ap-t346-19

View the webinar:

austroads.com.au/publications/bridges/web-t346-19

The new **Austroads Technical Specifications** standardise construction and maintenance of roads and bridges across Australia and New Zealand. They aim to make contract and tendering processes easier and more streamlined for industry and government by reducing each jurisdiction's test methods and prequalification schemes that make it difficult for companies tendering for projects across jurisdictions to standardise construction and management processes, increasing costs.

Adopting the Austroads Technical Specifications will save time and money in the long term by delivering efficiencies for industry, and encourage contemporary best-practice road and bridge construction practice. Transport agencies will benefit by no longer needing to maintain and update separate sets of specifications across Australasia. A list of all technical specifications and test methods published in 2019–20 is provided in the Knowledge Sharing Section of this report. They can be downloaded from the Austroads website:

austroads.com.au/publications/test-methods/agpt-t000

Pavement management

In the context of the freight task (tonnes of freight per kilometre) and international best practice in road asset management, Austroads supports its member agencies in harmonising and improving pavement management.

In **July 2019**, *Guide to Pavement Technology Part 5: Pavement Evaluation and Treatment Design* was updated to incorporate recent research focused on improving design methods for road pavement strengthening treatments, to enhance the cost-effectiveness of rehabilitating pavements.

The revision aligns the structural design of rehabilitation treatments with the structural design method for new flexible pavements described Guide to Pavement Technology Part 2.

Download the Guide:

austroads.com.au/publications/pavement/agpt05

View the webinar:

austroads.com.au/publications/pavement/web-agpt05-19

In **October 2019**, Austroads published a new edition of *Guide to Pavement Technology Part 8: Pavement Construction*, providing practitioners with up-to-date practices and the latest research to improve their pavement construction planning and delivery. In the past two decades since the Part was last updated, pavement construction practices have improved. More emphasis on construction safety by road agencies and industry means new plant has been developed, such as the forward moving aggregate spreader for sprayed sealing.

Download the Guide:

austroads.com.au/publications/pavement/agpt08

Austroads published a report in **October 2019** describing the findings of a project to improve pavement rehabilitation design by investigating more cost-effective ways of assessing the strength of existing pavements based on surface deflection measurements.

The project assessed the feasibility of using traffic speed deflectometer data to improve pavement rehabilitation treatment design. It also explained improving the back-calculation algorithm that determines the pavement layer moduli from pavement surface deflection data.

Download the report:

austroads.com.au/publications/pavement/ap-t350-19

in **October 2019**, Austroads published the results of a field study to test the long-term performance of polymer modified binders used in sprayed seals in Australia.

The resistance of non-modified bituminous binders to premature ageing has been assessed in Australasia using the durability test in AS/NZS 2341.13. This test, however, cannot assess the ageing performance of polymer modified binders and uses some equipment that can no longer be obtained.

Austroads commissioned research into developing a long-term ageing or durability test for polymer modified binders based on widely available test equipment, namely the pressure ageing vessel and the dynamic shear rheometer, which were used to age and then test binder samples.

Download the report:

austroads.com.au/publications/pavement/ap-t349-19

Sustainable roads and roadsides

The Australasian road network is one of the most extensive per head of population. Sustainability is therefore a key objective for road agencies as road user expectations and freight demands grow. It is important to make the best use of available resources to sustain the road network and understand how the network changes in response to traffic and environmental impacts.

In **October 2019**, Austroads published a report exploring the benefits and challenges of using recycled plastics in asphalt and sprayed seals on roads. It follows countries such as China and Indonesia banning the import of waste from Australia, leading to a growing interest in using recycled plastics in infrastructure.

The research found that some waste plastics could be a partial aggregate replacement in bituminous mixes and a binder extender without significantly influencing asphalt properties.

However, most laboratory trials conducted overseas were not performed in accordance with Australian bitumen standards and specifications, and very little is known about the manufacturing processes of the commercially available proprietary products currently being trialled on Australian and New Zealand roads.

As a result, there are concerns about hazards road workers could be exposed to while handling recycled plastics. Some plastics, when heated, release toxic emissions such as chloride, formaldehyde, toluene and ethylbenzene. Another major concern is microplastics leaching out from pavements into waterways, posing a serious threat to marine life.

Download the report:

austroads.com.au/publications/pavement/ap-t351-19

Austroads' Bridges Task Force on a site visit to the West Gate Tunnel project

Austroads' Project Delivery Task Force on a site visit to the Sydney Light Rail

Significant Outputs

Austroads Technical Advisory Group

The Austroads Board approved the establishment of the Austroads Technical Advisory Group (ATAG) during the year. The group provides governance and strategic direction to project ASP6089 Austroads Technical Specifications. The group, made up of a senior representative from each jurisdiction, held its first meeting in October 2019. Their current focus is to develop an industry engagement strategy for the technical specifications.

Use of recycled materials in road infrastructure

Austroads has embarked on a program of work to develop guidelines and model specifications on the use of recycled materials in road construction. The work, endorsed by Ministers in June, is due to be complete by the end of 2021. It consists of three projects:

APT6311 Use of crushed glass in road infrastructure
will develop guidelines and model specifications that consolidate information on the use of crushed glass as bedding sand replacement and assess opportunities for its use in concrete, road drainage, embankment fill and landscaping.

APT6173 National specification for crumb rubber binders in asphalt and seals
will accelerate delivery of a National Specification for Crumb Rubber Binders in Asphalt and Seals to standardise its use and make it more readily available to road authorities and councils.

APT6305 Use of road-grade recycled plastics for sustainable asphalt pavements
will develop evidence- and performance-based specifications to establish a road-grade plastic polymer sourced from recycled plastic, increasing the use of recycled plastics in roads without hindering long-term durability.

AAPA International Flexible Pavements Conference & Exhibition

Austroads was an exhibitor at the biannual AAPA International Flexible Pavements Conference & Exhibition, held in Sydney in 2019. The conference gave Austroads the opportunity to profile our pavement projects and publications to visitors.

KNOWLEDGE SHARING FORUMS

Throughout the year, the Program held internal forums and meetings to provide jurisdictional members an opportunity to share knowledge on specific topics. In early 2020, monthly online meetings were initiated with the Project Delivery Task Force to discuss the impacts of COVID-19 on infrastructure procurement and policies. Jurisdictions shared their experience of managing contractual risks and impacts including time extensions, delay costs, and changes to security provisions.

Austroads also initiated regular Building Infrastructure Modelling/ Digital Engineering Forums allowing jurisdictional members to network, share experiences, and learn from others to contribute towards an effective approach for major road infrastructure in Australasia.

Future focus

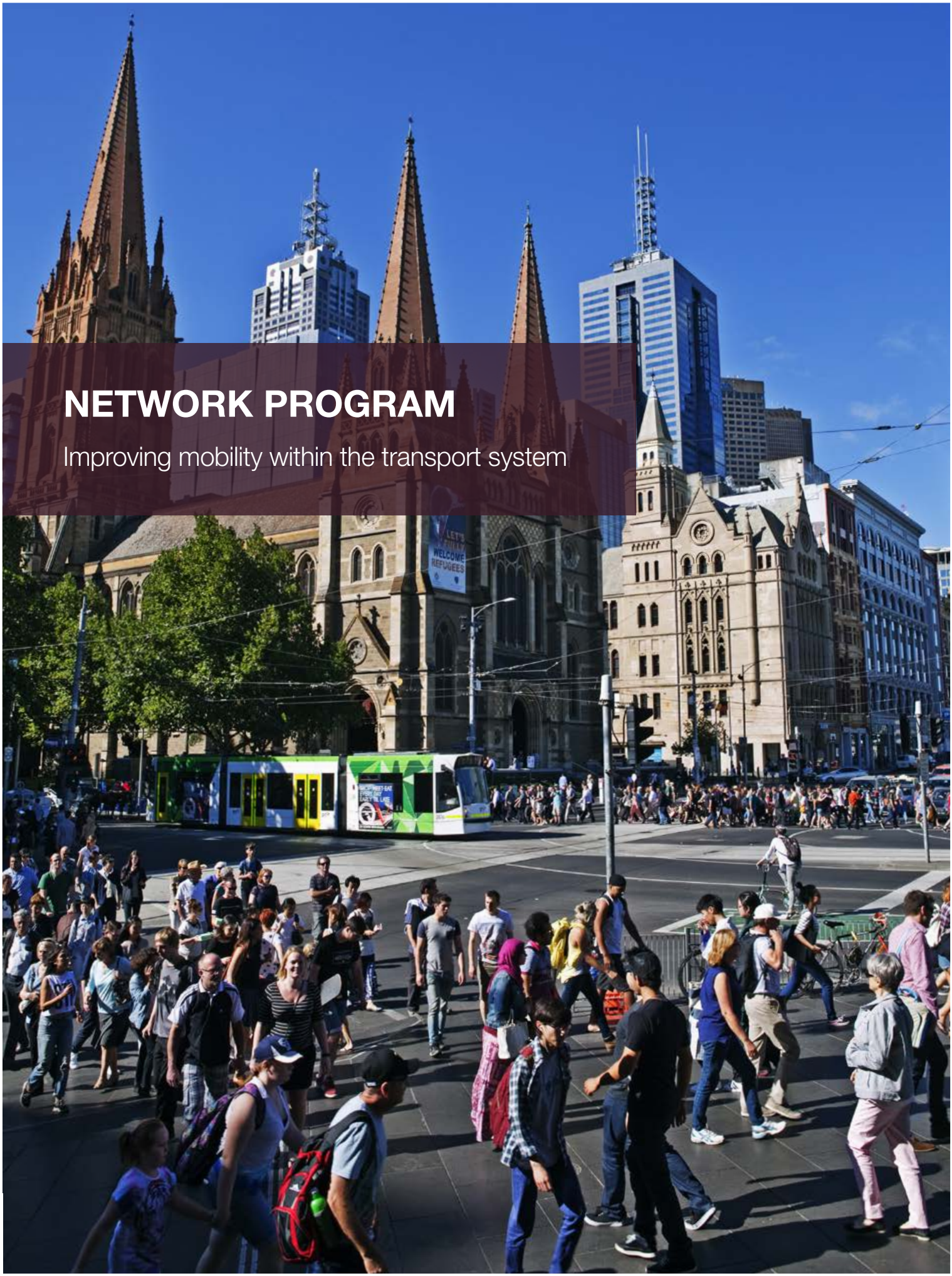
The *Austroads Strategic Plan 2020-2024* outlines a new direction for Austroads, focusing on solving transport agencies' problems and providing high-quality, practical and impartial advice based on comprehensive research. The Assets Program will be renamed the Transport Infrastructure Program to reflect the importance of helping asset managers deliver well-maintained, reliable and sustainable infrastructure. The aim of the new program is to 'Improve the management and performance of transport infrastructure by helping asset managers deliver an affordable and sustainable level of service appropriate for road users and the community'.

The Strategic Plan contains eight themes that focus the work and direction of Austroads. Although all themes apply to all programs, the Transport Infrastructure Program will be driven by sustainability, infrastructure, customers, technology, data and investment. Its objectives are to:

- promote update and enhance the Guides to Asset Management, Pavement Technology, Bridge Technology, Road Tunnels, and Project Delivery; and the Austroads Technical Specifications and Test Methods
- support members to prepare for new technologies, building data management capabilities and providing systems that harmonise data collection and analysis
- support reuse of materials, sustainable material use and waste reduction, and extend the performance of existing infrastructure.

The Transport Infrastructure forward work program is developed by the respective Task Forces on an annual basis guided by the Austroads strategic plan and focus areas. Projects approved by the Board for commencement in 2020-21 are:

Asset Management	
AAM6201	Development of a machine learning based maintenance decision support tool guideline
AAM6214	Road deterioration models update
Project Delivery	
APD6252	Guide to Project Delivery Parts 2 and 3 update
APD6251	Review of impact of service authorities on infrastructure projects
APD6244	Review of financial assessment criteria of the National Prequalification System (NPS)
Bridge Technology	
ABT6141	Guide to Bridge Technology Part 7 update: Bridge inspection harmonisation
ABT6152	Standard bridge barrier design guidelines update
Pavement Technology	
APT6240	Guide to Pavement Technology update Part 4B – validation of Superpave™ method of asphalt mix design for Australasia
APT6249	Protocol for the assessment of waste materials in road surfacings and update to Guide to Pavement Technology Parts 2, 4E & 5
APT6247	Increasing asphalt recycling with binder rejuvenators
APT6250	Development of software to facilitate/enhance the design of treatments to existing pavements
Road Tunnels	
ART6153	Tunnel fire incident information system
ART6243	Guide to Road Tunnels update: sustainable road tunnels
ART6233	Guide to Road Tunnels Part 2 supplement: rationalising network signage for over-height vehicles



NETWORK PROGRAM

Improving mobility within the transport system

Overview

The Network Program's strategic priority is to improve mobility for all users within the transport system.

In alignment with the Austroads Strategic Plan 2016-2020, the Network Program supports road transport agencies by sharing knowledge based on their practical experience and Austroads research, researching national and international best practice, and developing consistent approaches to road network operations and the movement of people and goods.

We provide guidance for transport agencies on real-time traffic operations, management of planned and unplanned disruptions such as roadworks and accidents, road user information, road network performance management and reporting, deployment and operation of Intelligent Transport Systems (ITS), and multi-modal integration.

Regarding freight and the movement of goods, the Network Program supports member agencies and other national bodies such as the National Transport Commission and National Heavy Vehicle Regulator by delivering key research supporting national reform agendas and initiatives to enhance freight productivity and safety.

Work streams

- Emerging technology, including Intelligent Transport Systems (ITS)
- Managing urban congestion
- Traffic management planning and infrastructure
- Freight transport and road productivity
- Active travel such as cycling and walking, and integration with public transport
- Funding models

People

RICHARD DELPLACE, NETWORK PROGRAM MANAGER

Richard is a recognised Engineer with a Masters in Electronics and a certified Project and Program Manager with 17 years' experience in senior technical roles.

Before joining Austroads full-time in June 2019, he worked in the public sector, major consultancy companies and the construction industry, in France and since 2007 in Australia, covering emerging technology, traffic engineering, road network and public transport operations.

Richard is based in Perth, Western Australia.

"My first year in the role has been focused on delivering the projects our Board approved in July 2019 and continuing the initiatives already under way, such as our strategic project on safety at road worksites. The research and guidance delivered this year addresses key pain points and opportunities for our members", says Richard.

"In parallel, our focus has been on aligning our future projects with our Strategic Plan for 2020-2024, which starts by strategic review of both our Network and Freight sub-programs in this new financial year, and improving the engagement with our member agencies on key network operations disciplines, which led to the establishment of new Technical Reference Groups covering ITS/technology, data for network operations, and operational processes revolving around Transport Management Centres."

"I look forward to delivering through the years to come more practical value to our members and the broader industry through our research, guidance, harmonisation efforts and services!".

PROGRAM COORDINATOR: RACHEL HASSAN

Program governance

NETWORK TASK FORCE

Kellee McGilvray, TfNSW
John Oppes, QLD DTMR
Glenn Bunting, NZTA
Kym Foster, ALGA
Paul Bennett, DIT SA
Mark Beasley, MRWA
Aftab Abro, DIPL NT
Daniel Verdouw, DSG TAS
Benjamin Hubbard, TCCS ACT
Andrew Wall, DoT VIC

FREIGHT TASK FORCE

Scott Greenow, TfNSW
Ian Mond/Andrew Wall, DoT VIC
Russell Hoelzl, QLD DTMR
Mike Wilde, DIT SA
Phoebe Flinn, MRWA
Andrew Poole, DSG TAS
Tim Wyatt, TCCS ACT
Brett Clifford, DIPL NT
Frederic Beale, DITRDC
Kym Foster, ALGA
Chris Watson, NZTA
Observers
Gavin Hill/John Gordon, TCA
Mandi Mees/Paul Davies, NTC
Jose Arredondo/Peter Caprioli, NHVR

TECHNICAL REFERENCE GROUPS

The Network Task Force is supported by five Technical Reference Groups (TRGs):

Temporary Traffic Management TRG

ensures that the *Guide to Temporary Traffic Management* represents best practice and is adopted by jurisdictions. The group, established in late 2019, also leads the national harmonisation of training, prequalification and device assessment.

Data & Information TRG

is the primary forum for member agencies to collaborate on research and guidance relating to data and information for transport network operations. It was established early 2020.

Intelligent Transport System TRG

is the primary forum for member agencies to collaborate on research and guidance relating to Intelligent Transport Systems practice. The group, established in early 2020, is a key custodian of the Austroads *Guide to Smart Motorways* (AGSM) to ensure it represents contemporary best practice applied in practice in all jurisdictions.

Transport Management Centres TRG

is the primary forum for member agencies to collaborate on research and guidance relating to traffic/transport management centres (also referred to as Traffic Operations Centres) and their operations. The group was established early 2020.

Traffic Management TRG

has been in place since 2007 and ensures that the Austroads guidance on traffic management and traffic engineering is best practice and is developed and maintained to meet the needs of the member agencies.

Agreed practice outputs

- Guide to Traffic Management
- Guide to Temporary Traffic Management
- Guide to Smart Motorways

Program activities

Highlights

- Following a four-year journey, the 10-Part *Guide to Temporary Traffic Management* was released in December 2019. The Guide ensures national consistency and best practice in the design and implementation of temporary traffic management at roadworks sites. It will be adopted into practice by Austroads member agencies throughout 2021.
- All 13 parts of the *Guide to Traffic Management* were updated in April 2020 to incorporate the learnings and recommendations from multiple research projects. Updates included improved guidance to create safer and attractive walking environments. Two supporting webinars on planning for and measuring pedestrian activities attracted more than 1,000 attendees.

Emerging technology

The work of the Network Program helps agencies identify and assess new technology designed to improve road network operations. Recognising the increasing use of Intelligent Transport Systems (ITS) assets and solutions for real-time traffic operations, agencies are implementing processes and controls to protect themselves against malicious attacks and security vulnerabilities. An Austroads project examining the security vulnerability of existing intelligent transportation systems and devices, provided agencies with an opportunity to learn from international best practice and share their knowledge and experiences.

In **November 2019**, Austroads published a report presenting standardised condition and performance datasets for ITS assets. The specifications cover 155 data items including 56 inventory items, 20 condition items, 39 performance items and 40 key performance indicators.

The report includes a business case analysing possible implementation options, with potential benefits and a benefit-cost analysis for each option. For road users, consistent data collection will reduce road congestion, improve reliability and make roads safer.

Download the report:

austroads.com.au/publications/traffic-management/ap-r608-19

View the webinar:

austroads.com.au/publications/traffic-management/web-r608-19

CASE STUDY

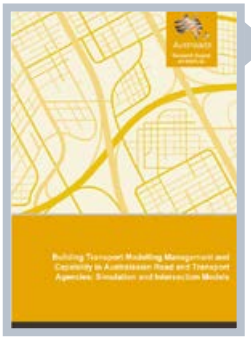
Austroads' project on standardising ITS assets increases efficiency on Auckland's main roads

> "Austroads' standardised condition and performance datasets helped us eliminate free form fields and improve our defined attributes and options.

Auckland System Management have used outcomes of the Austroads project: '*Standardisation of ITS technology asset-management datasets*' to digitise and streamline their ITS asset database for Auckland's main roads.

"We had concerns about our inefficient, disjointed asset maintenance," said Dean Parker, Transport Technology Asset Manager, Auckland System Management (ASM). "We were drowning in Excel spreadsheets, Word files and diverse data files. With the manual system, field staff and contractors were collecting and recording data inconsistently, and when procedures were online, sometimes misinterpreting free form fields and not providing the required data."

"Austroads' standardised condition and performance datasets helped us eliminate free form fields and improve our defined attributes and options. This means our people in the field understand what information we need them to provide, and the system is easy and quick to use. We're also trying to automate as many procedures as we can to cut down on inconsistent reporting. We now have, for example, a system that, if a vehicle crashes into a barrier, automatically activates a response team."



In **June 2020**, Austroads published guidance to help project managers make informed decisions when commissioning simulation and intersection modelling services, as well as managing or communicating the associated processes.

Download the report:

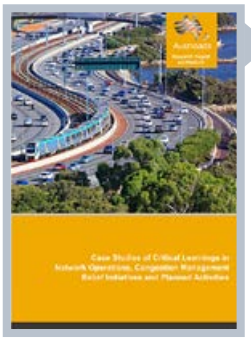
austroads.com.au/publications/network/ap-r621-20

View the webinar:

austroads.com.au/publications/network/web-r621-20

Managing urban congestion

Congestion results in significant costs to the community and industry by increasing journey times and reducing reliability. There is no single solution for improving road congestion. Carefully selected solutions integrated across transport modes, rather than operated independently, will have a greater combined impact than strategies adopted by one jurisdiction or for one mode of transport.



In **July 2019**, Austroads released *Case Studies of Critical Learnings in Network Operations, Congestion Management Relief Initiatives and Planned Activities* to share initiatives Australian and New Zealand road and transport agencies are implementing to deal with the growing issue of congestion in major cities and regional centres.

Agencies use a diverse range of treatments and operational improvements to tackle traffic congestion, including technology for real-time network operations such as smart motorways schemes, and investing in data acquisition, analytics and visualisation to evaluate events and conditions and ultimately design more informed congestion management strategies. The report will help agencies learn from each other's experiences and adapt them for their own use.

Download the report:

austroads.com.au/publications/network/ap-r600-19

In **May 2020**, Austroads published an issues paper analysing the contributions of the Australia and New Zealand road transport sectors to greenhouse gas emissions and highlighting the role that road transport network operations need to play to support state and national emissions reduction goals.

The issues paper recommends a strategic rebalancing of priorities so greenhouse gas emissions reduction is a key consideration in all road network transport operations thinking and decision making.

Download the issues paper:

austroads.com.au/publications/network/ap-c110-20

Download the webinar:

austroads.com.au/publications/network/web-ap-c110-20

Active travel and public transport

Mobility as a Service (MaaS) integrates transport services allowing customers to plan, undertake and pay for door-to-door journeys through a single mobile app, using as many services as they need.

In **August 2019**, Austroads published research exploring ways the public sector can influence the evolution of MaaS which has social and environmental benefits.

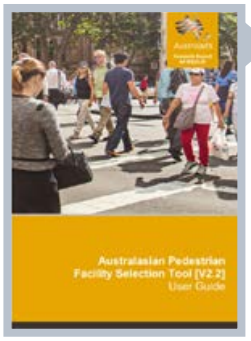
The report explores challenges and opportunities for international and local transport agencies and captures current thinking and approaches to encourage further collaboration.

Download the report:

austroads.com.au/publications/network/ap-r601-19

View the webinar:

austroads.com.au/publications/network/web-r601-19



In **June 2020** Austroads updated the Australasian Pedestrian Facility Selection Tool with revised economic evaluation parameters and expected crash reduction factors, and integration of the Australian Transport Assessment and Planning Guidelines. An updated user guide was also released.

Download the user guide:

austroads.com.au/publications/active-travel/ap-r625-20

Access the tool:

austroads.com.au/network-operations/network-management/pedestrian-facility-selection-tool

In **September 2019** Austroads published the results of the 2019 Australian Cycling Participation Survey. The results indicate that cycling is one of the most common forms of physical activity with around 3.43 million Australians riding bikes for transport or recreation in a typical week.

Measured over the previous week the cycling participation rate has declined from 15.5% in 2017, to 13.8% in 2019. This decline is statistically significant and appears to be consistent with the trend since the survey was first conducted in 2011.

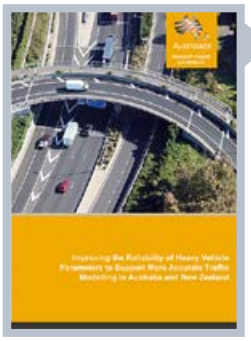
This is the last year the National Cycling Participation Survey will be undertaken by Austroads. Cycling and Walking Australia and New Zealand may undertake a national survey that includes walking in the future.

Download the reports, summaries and data:

austroads.com.au/publications/active-travel/ap-c91-19

Traffic management, planning and infrastructure

The 13-part Austroads *Guide to Traffic Management* provides comprehensive traffic management guidance for traffic engineering, road design and road safety practitioners. As contemporary practice in areas such as Safe System and network operations are evolving, the program is ensuring that Austroads continues to provide an agreed and consistent approach across Australasia.



Road agencies were concerned their traffic modelling software could not correctly calculate the capacity of arterial roads when there were many heavy vehicles, resulting in inaccurate scenario testing and policy analysis. In response, in **November 2019** Austroads published parameters that could accurately model heavy vehicle movements during interrupted traffic flows in Australia and New Zealand.

Researchers surveyed vehicle length, clearance space, acceleration, start-up and saturation headways, turning speeds, critical gap and follow-up headway for five heavy vehicle types: rigid trucks, single articulated trucks, B-double trucks, double road trains and triple road trains.

The heavy vehicle modelling parameters can be applied to similar modelling conditions used in the study, that is, arterial roads that are relatively flat and in speed limit zones of between 60 to 70 kilometres an hour. Application of the parameters to dissimilar traffic and highway conditions should be reviewed using field observations. The methodology in this report can be used as a guide to further refine and expand the scope of the model parameters.

Download the report:

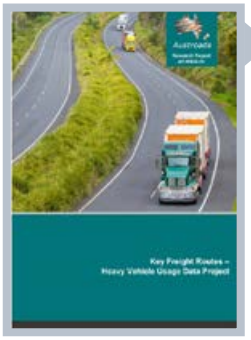
austroads.com.au/publications/traffic-management/ap-r609-19

View the webinar:

austroads.com.au/publications/traffic-management/web-r609-19

Freight transport and road productivity

The program recognises the impacts of increasing freight demand, changing funding arrangements for infrastructure development and maintenance, and the need for better integration of modes across the transport sector.



In **August 2019**, Austroads published research by Transport Certification Australia (TCA) which analysed telematics data collected from a range of heavy vehicles, including rigid trucks, articulated combinations and special purpose vehicles. The research explored if telematics systems could inform road agencies about ways heavy vehicles use key freight routes and where congestion occurs.

The project aggregated, de-identified 2016 data for heavy vehicle road usage, travel speed, journey time and congestion information on 288 roads and 18 interstate corridors and from 4,300 heavy vehicles and 1,000 transport operators.

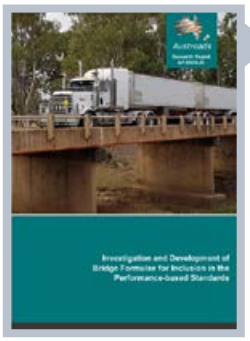
The report recommends key steps to develop broader freight vehicle telematics data collection. This data could be used to inform all levels of road policy and planning.

Download the report:

austroads.com.au/publications/freight/ap-r602-19

View the webinar:

austroads.com.au/publications/freight/web-r602-19



In **March 2020**, Austroads published research examining ways to reduce the impacts of heavy vehicles on bridge infrastructure while maintaining freight productivity. The work supported reforms to the Australian Performance-Based Standards Scheme proposed by Australian Transport Ministers in 2018.

PBS Tier 1 bridge formulae govern the minimum axle spacing, extreme axle spacing and total mass for heavy vehicles to mitigate their impacts on bridge infrastructure. Vehicles that comply with the formulae are Tier 1 PBS vehicles and are permitted to use the bridges.

However, the current bridge formulae can allow for vehicles with greater loads than bridges have been designed for. In response, road agencies assess all applications individually rather than granting automatic access when heavy vehicles comply with the bridge formulae. This approach is necessary but slows the approval process.

Austroads commissioned research into options to reduce uncertainty and create faster access decisions, while ensuring safety and productivity outcomes. The research recommended development of a national database and application process using an automated line model comparison.

Download the report:

austroads.com.au/publications/freight/ap-r615-20

Significant outputs

Guide to Temporary Traffic Management

In **December 2019**, Austroads released the new 10-Part *Guide to Temporary Traffic Management* (AGTTM) to improve the safety and efficiency of temporary traffic management on road worksites across Australia and New Zealand.

Temporary traffic management creates safe work areas for construction, maintenance and other activities which occur on or near a road using traffic control devices installed with the approval of a local or state road agency. In Australia, around 250,000 people and more than 800 companies provide temporary traffic management services.

The Guide provides information to manage the wide range of issues that must be considered during temporary traffic management activities. These include protecting pedestrians, cyclists, motorcyclists and public transport users; considering road freight trains; managing congestion; and considering lack of maintenance on some rural and remote roads.

State and territory road transport agencies are implementing the Guide based on their existing jurisdictional guidance and need for further consultation with local councils and industry.

Download the Guide:

austroads.com.au/publications/temporary-traffic-management/agttm-set

View the webinar:

austroads.com.au/network-operations/network-management/temporary-traffic-management

Guide to Traffic Management updated to incorporate the latest research

Austroads' *Guide to Traffic Management* (AGTM) was updated in **April 2020** to incorporate learnings and recommendations from six Austroads research projects. The 13 AGTM parts were retitled and their overall structure improved, with an additional focus on improving pedestrian safety, access and health.

Three practical webinars to accompany the updates were also held in May and June 2020.

Download the Guide:

austroads.com.au/publications/traffic-management/agtm-set

View the webinar *Charting changes in Austroads Guide to Traffic Management*:

austroads.com.au/publications/traffic-management/web-agtm-20

View the webinar Pedestrian planning concepts:

austroads.com.au/publications/traffic-management/web-ped1-20

View the webinar Measuring pedestrians: survey and audit methods:

austroads.com.au/publications/traffic-management/web-ped2-20

Future focus

The *Austroads Strategic Plan 2020-2024* outlines a new direction for Austroads, focusing on solving transport agencies' practical problems and providing high-quality, practical and impartial advice based on comprehensive research.

From 1 July 2020, the Network Program will be the Transport Network Operations Program to reflect the importance of improving end-to-end journeys that often rely on multiple modes of transport. The aim of the new program is to 'Improve mobility for all users within the transport system'.

The Strategic Plan contains eight themes that focus the work and direction of Austroads. Although all themes apply to all programs, the Transport Network Operations Program is especially driven by journeys, customers, technology, data and sustainability.

The key objectives of the Program for the 2020–2021 financial year (and beyond) are as follows:

- Set a clear plan for changes to the Austroads Guide to Traffic Management so that the Guide provides leadership and national consistency and continues as a relevant critical resource for member agencies and the industry.
- Review and define the role, directions and priorities of the Austroads Freight work program and develop a framework for Austroads road freight guidance to be managed as an enduring product.
- Deliver a national training framework and prequalification scheme for temporary traffic management, and expand the guidance beyond roadworks sites towards other scenarios such as planned events, incidents, roadside compliance activities.
- Develop a clear vision to address road freight access challenges by developing the case for a National Heavy Vehicle Bridge/Asset Assessment system (NHVBAS/NHVAAS)

Projects approved for commencement in 2020–21 are:

Network	
NEG6299	Best practice guidance to meet the changing needs of transport network operations: strategic review of Austroads Guide to Traffic Management (AGTM)
NEG6266	Best practice in road incident management
NEG6269	Guidelines for best practice in ITS testing, asset management and maintenance
NEG6270	Guidelines for smart motorways operations
NTM6267	Improved temporary traffic management guidance for planned events
NTM6272	Extended Austroads 94 vehicle classification scheme
Freight	
NEF6274	Options evaluation for potential National Heavy Vehicle Bridge/Asset Assessment system (NHVBAS/NHVAAS)
NEF6293	(Module 1) Strategic research direction and plan for Austroads Freight sub-program
NEF6293	(Module 2) Guide for Road Freight Productivity: Framework for guiding and managing road freight productivity

SAFETY PROGRAM

Improving the efficient, reliable and safe operation of the road network

Overview

The purpose of the Safety Program is to design, build and manage road transport systems that will protect road users and reduce the number of deaths and serious injuries.

Work Streams

- Emerging technology – C-ITS, automated vehicles
- National Road Safety Strategy priorities
- Understanding crashes and risks
- Safe System, incorporating safer road and roadside infrastructure, safer speeds and safer vehicles
- Driver licensing and vehicle registration
- Vulnerable road users including pedestrians, cyclists, motorcycle riders, older people and indigenous people.

People

DAVID BOBBERMEN, PROGRAM MANAGER SAFETY

David Bobbermen has worked in a variety of road infrastructure disciplines for more than 40 years and held senior engineering, policy, operational and management positions for Transport and Main Roads Queensland. David led the planning and rapid implementation of an affordable network-wide response to one of the worst performing highways in Australia. This resulted in reducing fatalities by 40% within two years which was recognised by the 3M Australasian College of Road Safety Diamond Award for 2015.

David is working with practitioners across all jurisdictions to share best practice and make a significant change to improve road safety performance across Australia and New Zealand. With approximately 50% of crashes occurring on local government roads, Austroads is also ensuring practices are developed with local government practitioners in mind. “This will be important as Austroads adopts and implements Safe System thinking for all roads and supports jurisdictions in implementing the Road Safety Action Plan 2018 to 2020. I want to develop a culture where no stone is unturned in the endeavour to save lives,” David said.

PROGRAM COORDINATOR: LEONIE PATTINSON

Program Governance

ROAD SAFETY TASK FORCE

Chris Brennan, DoT Vic	Fabian Marsh, NZTA
Amanda Capper, NHVR	Mandi Mees, NTC
Bernard Carlon, TfNSW	David Moyses, MR WA
Sarah Clark, DIT SA	Elizabeth Murphy, VIC Police
Brett Clifford, DIPL NT	Gabby O’Neill, DITRDC
Kym Foster, ALGA	Belinda Owen, JCS ACT
Craig Hoey, DSG TAS	Melissa Parry, RSC WA
Brent Johnston, MoT NZ	Roland Pittar, DITRDC
Mike Keating, QLD Police	Joanna Robinson, QLD DTMR
Leanne Kennedy, DITRDC	Lisa Rossiter, NZTA
Ann-Maree Knox, QLD DTMR	Nicole Spencer, DITRDC

ROAD DESIGN TASK FORCE

Andrew Baker, GHD Pty Ltd	Ben McHugh, TCCS ACT
Peter Ellis, TfNSW	David Milling ARRB
Richard Fanning, DoT Vic	Michael Tziotis, ARRB
Sam Hatzivalsamis, DIPL NT	Edi Winkler, DIT SA
Michael Hogan Blacktown City Council	Albert Wong, MR WA
James Hughes, NZTA	Bernard Worthington, QLD DTMR
Ken Marshall, TCCS ACT	

REGISTRATION AND LICENSING TASK FORCE

Charmaine Berry, NZTA	Geoff Hughes, NMVTRC
Roger Chao, DoT Vic	Kane Patena, NZTA
Chris Davers, DoT WA	Tammy Wigg, NHVR
Claudia Huertas, TfNSW	Adrian Chippendale, DITRDC
Tim Matthews, Austroads NEVDIS	Melissa Cummins, QLD DTMR
Cheryl Richey, TfNSW	Don Hogben, DIT SA
Jeremy Wolter, NTC	Claire Manalo DIPL NT
Amanda Capper, NHVR	Rod Paule, JCS ACT
Sarah Clark, DIT SA	Andrew Wright, DSG TAS
Nicole Denton, DoT Vic	

AUSTROADS SAFETY BARRIER ASSESSMENT PANEL (ASBAP)

Austroads Safety Barrier Assessment Panel assess products proposed for deployment in Australia and New Zealand. Products are evaluated in accordance with Safe Work Australia's Safe Design of Structures Code of Practice, and the Safety in Design requirements of the Work Health and Safety Acts enacted by Australian State governments.

Julian Chisnall, NZTA	Daniel Naish, QLD DTMR
Sam Hatzivalsalmis, DIPL NT	Santosh Tripathi, QLD DTMR
Phil Molloy, DIT SA	George Diamond, TCCS ACT
Bruce Snook, MR WA	Peter Hubble, DSG TAS
Evan Coulson, DoT Vic	Sue Philpott, Secretariat, TfNSW
Jade Hogan, Chair, TfNSW	Rod Troutbeck, Independent

Highlights

- The Road Design Task Force has completed a world-first process for making cross-section and intersection decisions consistently across a road network to achieve the safest road network. The process uses tables on cross-sectional guidance, safety solutions, and speed management to achieve value for money for both mid-blocks and significant intersections. Member agencies and industry are already using the process to develop network safety plans (see case study).
- There are more serious crashes on regional and remote than urban roads. A new edition of *Guide to Road Safety Part 5: Road Safety for Regional and Remote Areas* provides detailed advice about countermeasures to reduce such crashes including continuous roadside and central barriers, education on wearing seatbelts and, where possible, the use of vehicle features such as electronic stability control and adaptive cruise control.
- Local government manages a large proportion of Australian and New Zealand road networks. Our new guideline will help councils develop road safety management plans. A practical webinar showed council workers how to, for example, develop the best road safety treatments for regional and remote roads, introduce lower speed limits, choose the most appropriate roadside and median barriers and develop off-road shared cycleways and walkways.

OTHER TECHNICAL REFERENCE AND WORKING GROUPS

Safe System Theme Groups

These groups comprise representatives from state and territory government agencies and the Commonwealth. They are aligned with the Safe System elements:

- Safe roads and roadsides
- Safe speeds
- Safe vehicles
- Safe people
- Safe management (integration and coordination by the Task Force).

AGREED PRACTICE OUTPUTS

- Guide to Road Safety
- Guide to Road Design
- Assessing Fitness to Drive

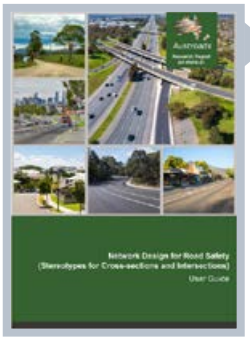
Program Activities

National Road Safety Strategy Priorities

Ambitious trauma targets have been set through the United Nations Decade of Action for Road Safety 2011-2020, with a global goal of stabilising and then reducing the level of global road fatalities. Australian and New Zealand governments support the decade of action and are committed to the National Road Safety Strategy 2011-2020 (NRSS) to achieve those targets by 2020.

While fatalities were reducing in line with the targeted outcome, more recently performance has plateaued in Australia, New Zealand and other OECD countries. In this context, Australasian road and transport agencies have focused on initiatives to immediately mitigate crashes and longer-term actions to reduce the number of incidents and fatalities.

Austroads through the Road Safety, Road Design, and Registration and Licensing Task Forces has published research and guidance to support the delivery of the National Road Safety Action Plan 2018–2020.



In **May 2020**, Austroads produced a user guide and report to help road managers, planners and designers develop sustainable network safety plans that reduce serious and fatal crashes, deliver 'self-explaining roads' and facilitate decisions resulting in the safest network.

Road safety treatments are traditionally considered on a project by project basis which may not result in the safest network with consistent corridor outcomes. Inconsistent corridor standards do not support the principle of a 'self-explaining road' and make it difficult for drivers to make decisions and match driving behaviour to the road environment.

Austroads developed a simple five-step process that applies to all roads across a network. The process enables quicker decisions by practitioners and simplifies the complex calculations required without losing the contemporary evidence. This project supports Action A in the National Road Safety Action Plan 2018–2020.

Download the user guide:

austroads.com.au/publications/road-design/ap-r619-20

Download the report:

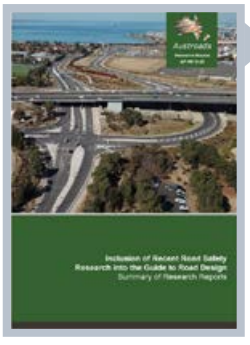
austroads.com.au/publications/road-design/ap-r618-20

In **January 2020**, Austroads and the Australia New Zealand Policing Advisory Agency published the National Road Safety Speed Enforcement Approach under the National Road Safety Strategy.

This document contains Australasia's strategic approach to managing enforcement of travel speeds on the nation's roads. The principles provide guidance and acknowledge jurisdictional variations in the development of policies, programs and practices to reduce speed as a cause of road trauma. This is the first step in supporting Action D in the National Road Safety Action Plan 2018–2020.

Download the document:

austroads.com.au/publications/road-safety/ap-c108-20



In **January 2020**, Austroads published a review recent research reports for their potential impact on the content of Guide to Road Design.

The Road Design Task Force reviewed 30 Austroads research reports to determine whether material should be included in the Guide. A new procedure has been developed to help ensure research outcomes are incorporated into guidance and so brought into practice in a timely manner.

Download the report:

austroads.com.au/publications/road-design/ap-r610-20

CASE STUDY

Austroads' network-wide road design reports help plan safer roads in Victoria

Austroads' simple five-step process for safe, cost-effective and good practice design of roads across a network is the first documented performance-based road design standard for Australia and New Zealand.

Published in May 2020, the user guide and report were developed after transport agencies raised concerns about road features on a network being designed on a project basis, meaning individual project managers make different decisions. These inconsistent road treatments can confuse drivers when standards suddenly change on a road corridor and create more risk of serious crashes.

These guidelines help agencies standardise decisions across a network, and are especially helpful for devising network safety plans.

The Department of Transport Victoria are already using them in the field. Allison Heskey, Senior Planning Engineer as at June 2020, said: "As a strategic planner, I found the user guide very useful to bring back planning thinking at the start of a project to a wider corridor-link sense rather than focusing on particular solutions. Once the purpose and performance expectations of the corridors and links were established, assessment of solutions followed logically and became easier to explain to stakeholders."

Michael Mattingley, Team Leader Planning, agreed and added: "I used the reports to help determine the appropriate cross section for the realigned section of a major road. Following the process enabled me to decide on the appropriate cross section for the road in light of previous and future investment in the corridor. The reports were easy to follow. I could work out the logic and how they should be used."

Allison found the concept of self-explaining roads especially helpful and said that: "The corridor standards that balanced objectives against various funding scenarios were useful for strategic consideration of recommendations."

For more information on the reports, visit austroads.com.au/latest-news/network-wide-road-design-a-simple-yet-effective-process-for-developing-sustainable-network-safety-plans

Understanding Crashes and Risks

By focusing on key risks, resources can be applied to comprehensively contribute to fatal and serious injury reductions across our road networks, Austroads has developed research programs to support both system-wide and targeted responses for the highest trauma risks identified by road and transport authorities.

Austroads published a policy and regulatory framework to reduce drink driving and guide the implementation of future countermeasures, in **February 2020**.

Drink driving is involved in about 18% of all road fatalities nationally, resulting in more than 200 deaths a year and thousands of serious injuries.

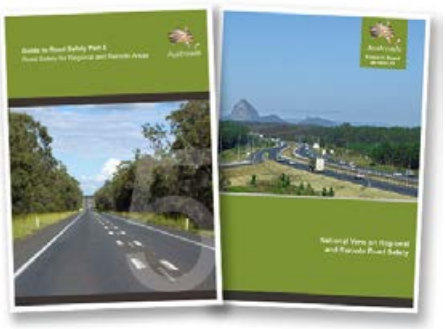
The report documents effective countermeasures different jurisdictions have in place. It is hoped all jurisdictions can improve their policies and practices in the short term by learning from each other, implementing some of the effective measures used in other states and thereby reducing fatalities and serious injuries.

Download the report:

austroads.com.au/publications/road-safety/ap-r613-20

View the webinar:

austroads.com.au/publications/road-safety/web-r613-20



In **September 2019**, Austroads released an updated edition of Guide to Road Safety Part 5: Road Safety for Regional and Remote Areas containing updated research from an accompanying report, National View on Regional and Remote Road Safety.

The new edition of the Guide analysed crash data from Australia and New Zealand to understand issues and trends, reviewed national and international literature, identified people who were most at risk of being involved in crashes, and identified measures and initiatives to reduce harm.

Countermeasures investigated in the Guide and report were evidence-based and incorporated the four Safe System pillars. Emerging vehicle technology could offer the most potential for reducing crashes in regional and remote areas. Recommended road treatments include audio tactile line marking, wide centre lines and speed management techniques with continuous roadside and central barriers, and divided road used on more heavily trafficked regional roads.

Download the guide:

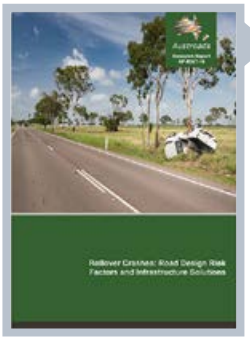
austroads.com.au/publications/road-safety/agrs05

Download the report:

austroads.com.au/publications/road-safety/ap-r603-19

View the webinar:

austroads.com.au/publications/road-safety/web-r603-19



In **September 2019**, Austroads published research which attempted to identify and quantify road and roadside design factors associated with roll-over crashes on high-speed rural roads. However, the data analysis provided largely non-statistically significant results, and few conclusive factors could be drawn from this work due to data limitations.

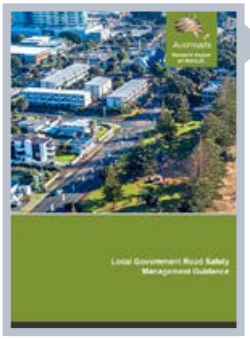
The literature review did reconfirm known contributing factors including sharp curvature, lack of sealed shoulders, roadside slopes and ditches, hitting unforgiving roadside objects (high-severity risk) and vehicle factors.

Download the report:

austroads.com.au/publications/road-design/ap-r607-19

Embedding Safe Systems

The Safe System approach has been endorsed by the OECD and adopted in the National Road Safety Strategy and the supporting National Road Safety Action Plan. It recognises that people make mistakes that can lead to road crashes. Further, while all road users (pedestrians, passengers, drivers, motorcyclists and cyclists) have a responsibility to act with care and within traffic laws, a shared responsibility exists with those who design, build, manage and use roads and vehicles, to prevent crashes resulting in serious injury or death and to provide post-crash care.



In **January 2020**, Austroads published guidance to help local government develop and implement road safety management frameworks according to Safe System principles.

The report includes incorporating Safe System practices into road safety management systems and plans. There is information on road safety treatments for regional and remote roads including low speed limits, one-way traffic, flexible roadside and median barriers, off-road shared cycleways and walkways, and curve chevron markers. Guidance includes forming strategic partnerships, managing shared responsibilities, capacity building, program development and delivery and funding. Monitoring and evaluation principles are explained, with the final section identifying useful tools and resources.

Download the report:

austroads.com.au/publications/road-safety/ap-r612-20

View the webinar:

austroads.com.au/publications/road-safety/web-r612-20

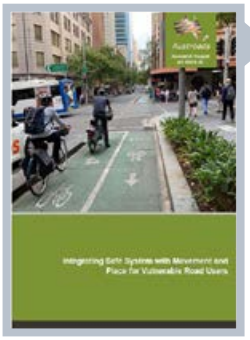
In **September 2019**, Austroads published a note on Road Safety Leadership to answer commonly asked questions on using Safe System to improve road safety.

While Australia and New Zealand have been early adopters of the Safe System approach since 2004, practitioners have sometimes been unclear on how best to integrate the approach into their daily activities. The note:

- provides an introduction to the Safe System approach
- highlights the key messages related to Safe System infrastructure solutions
- highlights key references on the Safe System approach and
- clarifies the responsibilities of leaders in communicating this message.

Download the note:

austroads.com.au/publications/road-safety/ap-c105-19



In **February 2020**, Austroads completed a project to better safeguard pedestrians and cyclists, by integrating Safe System principles with the Movement and Place Framework.

The report assesses safety measures for pedestrians and cyclists based on the extent to which a treatment or design addresses the risks of a severe injury or death occurring during a crash, and the likelihood of a crash occurring given the volume of traffic and the exposure of vulnerable road users to motor vehicles.

Download the report:

austroads.com.au/publications/road-safety/ap-r611-20

View the webinar:

austroads.com.au/publications/road-safety/web-r611-20

CASE STUDY

Austroads' Guide key factor in more than halving road casualties in Thailand

Austroads' *Guide to Road Safety* and accompanying research reports are being used in Thailand to reduce numbers of road casualties at 900 high-risk sites. Principles, strategies and actions in the Guide have been put into practice, reducing fatal crashes by 57% and serious crash injuries by 60%.

Safe System Solutions Pty Ltd train Thai agencies in road safety through practical hands-on workshops along with lectures, field work, individual assignments and group work.

"We developed road safety capability and capacity building program for Thailand's Department of Rural Roads (DDR) over two years from 2017 using the *Guide to Road Safety* and associated research reports as key resources," said Kenn Beer, Principal Engineer, Safe System Solutions Pty Ltd. "DDR immediately utilised the advice in Parts 6 and 6A of the Guide to manage and implement road safety audits and identified high-risk sites using principles in Part 7. They then investigated these sites and identified effective treatments based on the guidance in Part 8.

The most effective mechanisms in the Guide were the systematic process for site identification, and the deployment of treatments based on sound research rather than opinion-based infrastructure development."

DDR invested in infrastructure based on advice from the Guide and Austroads Technical Report *AP-T151-10: Road Safety Engineering Risk Assessment Part 6: Crash Reduction Rates* which assesses crash risk from road, traffic and roadside infrastructure. They installed roundabouts and road safety barriers, upgraded signs and line marking, and improved sight lines at intersections.

"Of all the road safety guidance available around the world, the Thai Department of Rural Roads gravitated to the Austroads Guide to Road Safety because of its sound principle based approach which could be adapted to their processes, practices and culture," said Kenn.

"Having the Austroads Guides and research reports available as training resources has been a key component of making our programs so successful, and in the Thais deploying effective on-ground safety solutions that have more than halved fatal and serious injuries at specific sites on their road network."

> "Of all the road safety guidance available around the world, the Thai Department of Rural Roads gravitated to the Austroads Guide to Road Safety because of its sound principle based approach.

Field exercise during the Advanced Road Safety Audit course, Southern Thailand, 2019. Photo provided courtesy of Safe System Solutions Pty Ltd

Driver licensing and vehicle registration

Our Registration and Licensing work program is focus on delivering harmonised driver licensing practice, secure driver licensing and vehicle identification, improved access to driver licences, and encouraging the use of safe and efficient vehicles.

In **June 2020**, Austroads collated stakeholder feedback provided in response to a discussion paper on motorised mobility devices (MMDs) circulated in August 2019. Responses were received from a range of stakeholders, including user representative groups, government and industry representatives.

As stakeholders opposed national registration and licensing arrangements for MMDs and their users, Austroads recommended no further action be taken regarding registration and licensing schemes. Austroads recommended not adopting a technical specification for MMDs due to the potential impact of reviews that were underway or planned.

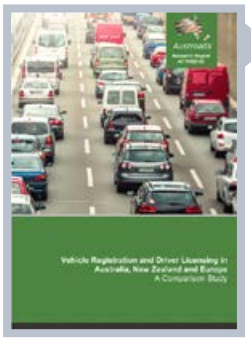
Options for third party insurance were also explored in the report.

Download the report:

austroads.com.au/publications/registration-and-licensing/ap-r622-20

Download the discussion paper:

austroads.com.au/publications/registration-and-licensing/ap-c107-19



In **April 2020**, Austroads published a report comparing vehicle registration and driver licensing practices in Australia, New Zealand and Europe. The report summarised registration and licensing practices between the three regions.

The report found similar challenges in the regions, including ensuring that training, assessment and licensing conditions promoted driver safety; combating vehicle identity crime and drink and drug driving; and protecting data.

Many jurisdictions also developed strategies to embrace new vehicle technologies including electric and autonomous vehicles, and digital services

Download the report:

austroads.com.au/publications/registration-and-licensing/ap-r620-20

In **December 2019**, Austroads and the National Motor Vehicle Theft Reduction Council updated two guides to support the consistent classification of light and heavy written-off vehicles.

The guides are used by insurance personnel and other notifiers to classify written-off vehicles for regulatory purposes. They provide sufficient technical precision to be expressly referenced as an incorporated instrument under State and Territory law.

Download the guidance for light vehicles:

austroads.com.au/publications/registration-and-licensing/ap-g89-19

Download guidance for heavy vehicles:

austroads.com.au/publications/registration-and-licensing/ap-g90-19

Significant Outputs

Australasian Road Safety Conference 2019

Austroads is a major sponsor of the annual Australasian Road Safety Conference, which in September 2019 was held in Adelaide and attracted more than 600 attendees.

Road Safety Program Manager David Bobbermen presented on 'Austroads Road Safety Research: Are there any stones unturned?' and profiled several projects including the local government guide, regional and remote road safety and vehicles as a workplace. There was also a workshop on network-wide road design for road safety plans.

At the Austroads booth, we talked to attendees about trends and developments in road safety (see video at vimeo.com/367665512).

David Bobbermen speaks to Australasian Road Safety Conference 2019 delegates about future disruptors and their impact on transport and safety.

ISO 18013-5 Testing Event and Workshop

Digital or mobile driver licences (mDLs) are becoming the first widespread application of digital credential technology. New South Wales and South Australia have issued mDLs and Queensland is planning a pilot.

In recognition of the global move towards the development and deployment of mDLs, an international standard is under development to provide an agreed secure platform on which to build mDLs in an interoperable environment.

In August 2019 the Registration and Licensing Task Force completed the first of a potentially two stage project to examine the interoperability of mDLs.

Later in the year TMR agreed to host with Austroads an ISO 18013-5 testing event and workshop in Brisbane. The event was attended by more than 70 delegates including policy and technical representatives of seven Australian jurisdictions and New Zealand.

> "Digital or mobile driver licences (mDLs) are becoming the first widespread application of digital credential technology.

Delegates participating in the Austroads ISO Testing Event and Workshop

Suicide in road transport

Work is being undertaken by Austroads in partnership with the National Road Safety Partnership Program to understand and provide support for road agencies, industry and people who are touched by suicide related to road transport operation.

Suicide is a prominent public health concern with around 3,000 deaths each year in Australia. While it is a relatively rare cause of death, it affects many people within the community as the impact of even a single suicide death can be widespread.

> “Suicide is a prominent public health concern with around 3,000 deaths each year in Australia.

Due to the complexity and sensitivity of the project, it will be delivered as four streams of work:

- **Stream 1:** Communications and Language – development of guidelines, which are evidence-based and consistent with best-practice communication of suicide by related methods, led by Everymind.
- **Stream 2:** Data – identification and analysis of data sources to understand the size of the problem, trends, and identify the optimal identification, classification, collection and reporting of suicides in road transport led by Griffith University.
- **Stream 3:** Interventions – reviewing what has been done to date to understand what has been developed, and its effectiveness and transferability to the road related sector led by Griffith University.
- **Stream 4:** Research – expanding the research base of suicides in road transport in relation to partnering with larger relevant research projects and stimulating research centres through three research projects to explore the:
  - impact of suicide on road transport on third parties led by Chartered Institute of Logistics and Transport Australia consortia;
  - barriers to interventions in relation to suicide in road transport led by the Australian Institute for Suicide Research and Prevention based in Griffith University; and
  - interventions in relation to suicide in public places as a supporting funding partner with the University of Melbourne National Health and Medical Research Council.

The National Working Group involves nearly 100 different partners all of which are actively contributing to the project.

Future Focus

The Austroads Strategic Plan 2020-2024 outlines a new direction for Austroads, focusing on solving transport agencies’ problems and providing high-quality, practical and impartial advice based on comprehensive research.

From 1 July 2020, the Road Safety Program is renamed the Road Safety and Design Program to reflect the importance of effective road design in reducing serious and fatal crashes and achieving Safe System outcomes. The aim of the new program is ‘Improve the safety of the road network’.

The Strategic Plan contains eight themes that focus the work and direction of Austroads. Although all themes apply to all programs, the Road Safety and Design Program is especially driven by safety, infrastructure, customers, technology, data and investment. Its objectives are to:

- continually update and enhance *Guide to Road Design* and *Guide to Road Safety* so they contain the most up-to-date guidance and research for member agencies to improve safety outcomes
- bring Safe System into practice, maximise safety benefits across the network, deliver National Road Safety Strategy priorities, and contribute through innovation to Vision Zero.

Projects approved for commencement in 2020-21 are:

Road Safety	
SAG6290	Guide to Road Safety – speed management – effective road authority practices
SAG6291	Guide to Road Safety update – practical approaches for managing regional road safety priorities
Road Design	
SRD6288	Guide to Road Design update – Parts 4, 4a, 4b and 4c: Intersections and crossings
SRD6289	Guide to Road Design update – Part 6: Roadside design, safety and barriers: Sections 4, 5 and 6
SRD6296	Guide to Road Design update – all user groups and all stereotypes
Registration and Licensing	
SRL6287	Incorporating advanced driver assistance systems into driver licensing, education and training practices
SRL6259	NHVDCF Stage 3 (accelerated to commence in 2019-20)
SRL6286	Overseas Driver Licensing (accelerated to commence in 2019-20)

FUTURE VEHICLES AND TECHNOLOGY PROGRAM

Optimising the societal benefits of new technologies

Overview

The Future Vehicles and Technology Program is Austroads' newest program established in July 2019. The program builds on and extends the work of the previous Connected and Automated Vehicles Program. The vision for the program is that *all the employees of our member organisations have an understanding of how future vehicles and technology can help them improve the lives of people in the communities they serve*.

The program is supporting transport agencies to maximise the benefits of new vehicle-based technologies whilst minimising the risk associated with their introduction. A key focus for 2019-20 was to develop a detailed forecast on the availability and penetration into the vehicle fleet of connected, automated and electric vehicles in 2030. Based on these forecasts, the program is now aiming to develop a ten-year roadmap of guidance and associated research to support our members to take full advantage of what future vehicles have to offer in the areas of safe, efficient, sustainable and equitable road transport.

Work Streams

- Connected and automated mobility
- Digital infrastructure
- Physical infrastructure
- Low and zero emission vehicles
- Member capability

People

JOHN WALL IS PROGRAM MANAGER, FUTURE VEHICLES AND TECHNOLOGY

John established the Road Safety Technology Section in the former Roads and Traffic Authority of NSW in 2008 and he is recognised as one of Australia's leading specialists in applying intelligent transport systems to meet road safety goals. In 2014, his team established the CITI Project, the world's largest Heavy Vehicle Co-operative Intelligent Transport Systems test bed.

John is the author of numerous research papers on the role of technology in reducing the incidence and severity of crashes on the road network. His work has been published in several peer reviewed journals and he is a much sought-after speaker both nationally and internationally. He was an active member of the previous Austroads CAV Program Steering Committee established in 2011.

John's qualifications include a Diploma of Applied Science (Ag), Graduate Diploma of Education and Master of Public Health. John is also a recipient of the National Medal for more than 30 years of active service with the NSW State Emergency Service.

Program Governance

The program's governance is supported through the Future Vehicles and Technology Task Force which consists of representatives from each member agency as well as the National Transport Commission. The Task Force is responsible for nominating projects for funding to the Austroads Board as well as monitoring their progress throughout the year.

FUTURE VEHICLES AND TECHNOLOGY TASK FORCE

Aftab Abro, DIPL NT	Lee McKenzie, NZTA
Marcus Burke, NTC	Joanne Murray, DIT SA
Chris Coghlan, DoT VIC	Raj Roychaodhry, TfNSW
Ramy Gokal, DSG TAS	Sally Todd, DTIRD
Benjamin Hubbard TCCS ACT	Kamal Weeratunga, MR WA
Geoff McDonald, QLD TMR	

FUTURE VEHICLES AND TECHNOLOGY RESEARCH COMMUNITIES OF PRACTICE

More than 70 staff across Austroads member agencies participate in our research communities of practice (RCoPs). The RCoPs help identify, evaluate and prioritise research projects for submission to the Future Vehicles and Technology Task Force. RCoP members also serve on project working groups if required.

In our RCoPs, members do not represent their agency as such but their role in their organisation. RCoPs include agency employees with a wide range of experience from less than one year of service to staff who have worked for an agency for more than 30 years. RCoPs include staff from a large variety of backgrounds including civil, mechanical and electrical engineering as well as policy, data science and human resources.

The five communities of practice are based around:

- Connected and automated mobility
- Digital infrastructure
- Physical infrastructure
- Low and zero emission vehicles
- Member capability.

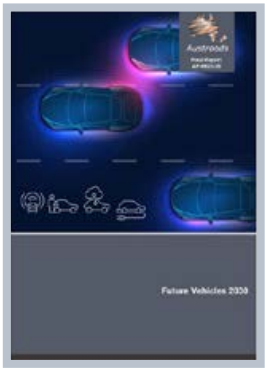
Program Activities

Highlights

- Releasing detailed forecasting on the availability and penetration into the vehicle fleet of connected, automated and electric vehicles by 2030 for Australia and New Zealand (see case study).
- Developing a new audit method that uses vehicle-based vision-based sensors and machine learning to determine infrastructure readiness for automated driving (see case study).
- Identifying the gaps in physical and digital road infrastructure to support the operation of connected and automated vehicles across 25,000 km of highways and freeways in Australia and New Zealand.
- Improving member capability to support the rapid increase in electric vehicle ownership in Australia and New Zealand by recommending development of a national charging systems guide to encourage safety, consistency and efficiency.

Connected and automated vehicles

Connected and automated vehicles have the potential to improve the safety, efficiency and equity of our road transport systems.



Building on the work of Austroads' previous Connected and Automated Vehicles Program, the Future Vehicles and Technology Program has provided detailed forecasts to members on the likely adoption of key technologies by vehicle manufacturers including automated driving, cloud connectivity and cooperative intelligent transport systems. The program has also investigated the readiness of members' licensing systems as well as our highway and freeway infrastructure to support these technologies.

By 2030 in Australia, almost all new passenger vehicles will contain automatic emergency braking and about 73% will be fitted with other safety features such as lane keeping assistance and adaptive cruise control, according to Austroads' research report, *Future Vehicles 2030*, released in June 2020.

Austroads used the latest knowledge and evidence to predict features and technologies new passenger vehicles, light commercial vehicles and heavy vehicles will contain in 2030, in both Australia and New Zealand. The report also covers the likely make-up of vehicle fleets in both countries and possible differences between vehicle capabilities in urban and rural areas.

Forecasts in the report focus on specific attributes, that is, active safety systems, automated driving, connectivity via Cooperative Intelligent Transport Systems or to the cloud, battery electric vehicles, and vehicles used for hire in cities with a driver such as taxis and rideshare services.

Download the report:

austroads.com.au/publications/connected-and-automated-vehicles/ap-r623-20

View the webinar:

austroads.com.au/publications/connected-and-automated-vehicles/web-r623-20

CASE STUDY

Austroads future vehicles report influences transport policy and the vehicle industry

Austroads only published Future Vehicles 2030 in June 2020 but it immediately caught policy makers' attention, especially those promoting uptake of automotive, connected and low emission vehicles and associated technologies.

"The report provided expert evidence for our contribution, as a member of the Automotive Strategic Reference Committee, to PWC's Skills for Australia submission to the Australian Government. This submission was about ensuring automotive technicians are trained in powertrain electrification for hybrid, plug-in hybrid and battery electric vehicles," said Rob Langridge, Director – Emerging Technologies, Federal Chamber of Automotive Industries. "We must ensure technicians know how to safely work on the high voltage parts of these vehicles and make non-high voltage parts safe for general service and repair. We're also encouraging introduction of apprenticeships for these emerging technologies.

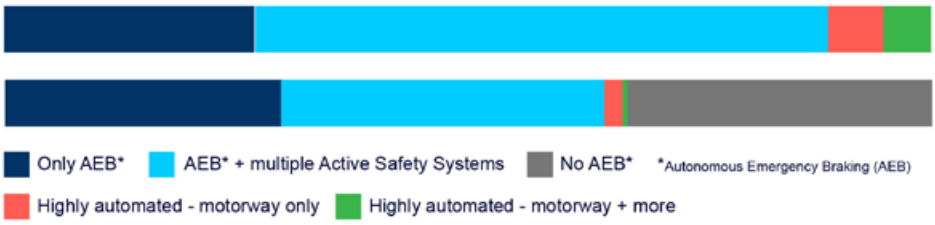
We used the report's projections on sales and fleet penetration of electric vehicle technologies to inform the government of the likely demand for this education and to provide authoritative research specific to the Australian market."

State government agencies are using the report too. For example, Transport for NSW have reported that they found the report invaluable when developing a strategic business case for upgrading a major NSW highway and framing a response to the National Transport Commission discussion paper on the use of vehicle generated data. The independent and expert research and analysis in the report provided the agency with confidence and assurance.

Rob Langridge believes Future Vehicles 2030 will inform policy makers in other areas such as EV charging requirements across the road network, and adoption and coordination of cooperative intelligent transport systems for connected vehicles.

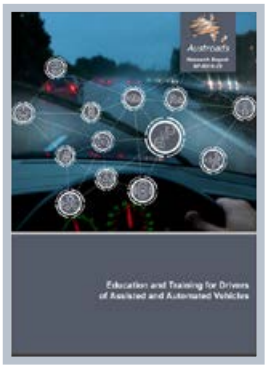
> "We must ensure technicians know how to safely work on the high voltage parts of these vehicles and make non-high voltage parts safe for general service and repair.

What proportion of vehicles will have automation features?



What proportion of vehicles will have connectivity features?

What proportion of vehicles will be electric?



In **March 2020**, Austroads published research identifying the skills, knowledge and behaviours people need, now and in the future, to operate vehicles equipped with technologies that support and automate driving tasks. The report also examined what role, if any, registration and licensing authorities could undertake to ensure that licence applicants were competent in the use of these technologies.

As vehicles increasingly incorporate new technologies, drivers will need to perform new functions and tasks. The report investigated whether licensing requirements should change to ensure drivers have the necessary education and training to safely operate these technologies on the road network.

The focus of the project was to identify education and training requirements for drivers of light and heavy vehicles equipped with Society of Automotive Engineers (SAE) Level 0 to 2 advanced driver assistance systems, and Level 3 automated driving features.

Download the report:

austroads.com.au/publications/connected-and-automated-vehicles/ap-r616-20

View the webinar:

austroads.com.au/publications/connected-and-automated-vehicles/web-r606-19

Digital and physical infrastructure

While connected and automated vehicles have the potential to improve the safety, efficiency and equity of our road transport systems, they will need to be supported by physical and digital infrastructure. Physical infrastructure requirements will include readable signs and lines and fewer at-grade cross-intersections on our highways. Digital infrastructure requirements will include access to mobile data networks, cooperative ITS devices and systems that collect, store and disseminate data.

In **October 2019**, Austroads published five reports examining the readiness of road infrastructure for automated vehicles.

Module 1 recommended specifications to be used in an audit to identify physical and digital infrastructure on key main roads in Australia and New Zealand that automated vehicles using machine vision systems could and could not interpret. The specifications cover line marking, traffic signs, route and lane discontinuities, temporary conditions due to roadworks and incidents, cellular data coverage and availability of map data.

Module 2 reported the results of a road audit on a 25,000 km sample of the road network. The audit included more than 8 million lines and 8,000 signs. It found that most freeways and highways of Australia and New Zealand could support safety assistance system operation and lane positioning when there were good quality lines and cellular availability.

Module 3 investigated road asset standards for connected and automated vehicles on main roads in Australia and New Zealand. It found the main reason road agencies had not developed asset standards was lack of clear guidance. As a result, the report provides some initial guidance on thresholds for line marking width and reflectivity, and sign maintenance, to benefit both human drivers and CAVs.

Module 4 investigated emerging asset attribute and condition capture techniques, such as data capture from sensors in vehicles, to determine how this information could supplement or potentially replace some asset condition information collected by road agencies.

Module 5 outlined the findings of the project and provided recommendations including prioritising the addition of edge lines to roads and improving contrast between edge lines and adjacent pavements.

Download the reports:

austroads.com.au/publications/connected-and-automated-vehicles/ap-t347-19

austroads.com.au/publications/connected-and-automated-vehicles/ap-t348-19

austroads.com.au/publications/connected-and-automated-vehicles/ap-r604-19

austroads.com.au/publications/connected-and-automated-vehicles/ap-r605-19

austroads.com.au/publications/connected-and-automated-vehicles/ap-r606-19

View the webinar:

austroads.com.au/publications/connected-and-automated-vehicles/web-r606-19

CASE STUDY

Austroads' methodology assesses safety of European roads for connected and automated vehicles

The methodology in an Austroads' research project is being used to assess the readiness of major European roads for connected and automated vehicles (CAVs).

The European Road Assessment Programme (EuroRAP), works towards achieving the United Nations and the European Commission's road safety goals, is the lead partner of the European Commission's CEF Project SLAIN. The project aims to improve the safety of European roads through a program of systematic assessment of risk.

Among its activities, SLAIN will assess the readiness of roads to support CAVs, 'Roads that cars can read'.

"We are planning to measure and record physical road attributes from a sample of 2,000 km of TEN-T roads in four countries. Specifically, we will collect data on road markings, lines and signage from Croatia, Greece, Italy, and Spain and assess their CAV readiness," said Lina Konstantinopoulou, Secretary-General, European Road Assessment Programme.

"To do this, we're using the readiness audit in the Austroads' series of research reports published in 2019: Infrastructure Changes to Support Automated Vehicles on Rural and Metropolitan Highways and Freeways."

The Austroads project used a survey vehicle fitted with a Mobileye camera with machine vision technology used in late model or near future market vehicles. This technology analysed three main attributes on the road in real-time: speed signs, lines and roadworks warnings. It also measured digital infrastructure in terms of cellular network coverage.

"We were impressed by the volume and quality of data this methodology could access. Austroads' consultants also helpfully provided technical specifications for Mobileye units and HERE maps."

"The SLAIN project is planning to use Ai-RAP to code the data collected. This system incorporates artificial intelligence and machine learning convert data into iRAP attributes. This has the potential to expand the iRAP safety Star Ratings for roads on a scale not previously possible."

"The project findings will provide recommendations for a common set of specifications for road markings and signs that human drivers and automated driver assistance systems can detect. It will improve future road safety throughout Europe," said Lina.

> "With 95% of all light vehicles imported into Australia being European models, working with Europe allows us to be better prepared for new technologies and their associated infrastructure requirements.

"The specifications will influence the planning of road safety investments and be incorporated into our 2021 edition of Roads that Cars Can Read, a series of reports recommending the requirements for AVs with respect to digital and physical infrastructure."

"We're delighted to be working with EuroRAP," said John Wall, Austroads' Program Manager, Future Vehicles and Technology. "With 95% of all light vehicles imported into Australia being European models, working with Europe allows us to be better prepared for new technologies and their associated infrastructure requirements."

"Lina has now also invited us to be part of a new proposed EU project on the Harmonisation of Line Marking in Europe," John said.

To see Mobileye technology working in real time on roads under different conditions, view vimeo.com/365172024.

Low and zero emission vehicles

The road transportation sector is a substantial contributor to greenhouse gas (GHG) emissions in both Australia and New Zealand. Austroads' previous analysis has shown that left unabated, the sector will continue to drive emissions growth. Many of our member agencies have released policies that aim to transfer their road transport system from one reliant on the consumption of fossil fuels to one based on green energy sources and low and zero emission vehicles. The Future Vehicles and Technology Program is working with agencies to support this transition.

In **February 2020**, Austroads published research investigating ways Australasian road operators in can support the transition to electric vehicles (EVs).

EVs could impact on registration and licensing, road access, road design and maintenance, road operations, road corridor planning, road signage and road operator standards. In addition, to support the transition to EVs, new functions may emerge. Guidance in the report is divided into core and non-core areas. It recommends that all road operators adopt the core actions, and then adopt non-core actions as appropriate.

A major core action is for road operators to work with other stakeholders to develop guidelines for electric vehicle charging systems to encourage safe and efficient charging operations. Other core actions include developing universal standard signage for EV charging stations, sharing data and possibly conducting trials relating to new charging technologies including plug-less systems.

Download the report:

austroads.com.au/publications/low-and-zero-emission-vehicles/ap-r614-20

View the webinar:

austroads.com.au/publications/low-and-zero-emission-vehicles/web-r614-20

Member capability

The way transport agencies work is changing. Most of our members are now larger transport agencies rather than specific road network based organisations. The emergence of coronavirus SARS-CoV-2 leading to the COVID-19 pandemic has required many of us to adopt different work practices, including working from home. The adoption of new vehicle technologies will also change the way agencies work, and the skill sets of their employees. Future projects in this area will prepare and support members as they expand their workforce from a traditional engineering base to a broad range of information management, technology and communications specialists.

Significant outputs

Pavement markings for machine vision

We are working on a project to outline how longitudinal pavement markings affect automated steering functions and whether changes to design and maintenance practices could improve the support lane markings provide for Advanced Driver Assistance Systems and, in the future, automated vehicles.

The project is being undertaken in four key stages: a literature review, stakeholder consultation, on-road and off-road trials and a cost impact assessment. The literature review and testing showed that while machine vision-enabled lane-guidance functions do not operate perfectly; they do provide significant road safety benefits. This project will progress further in 2020-21.

Road authority data for connected and automated vehicles

Austroads' project *Connected and Automated Vehicles Open Data Recommendations* previously identified high-priority data sets required for connected and automated vehicles. These include information on roadworks (including closures), incidents, variable speed limits, static speed limits, traffic signals and vehicle restrictions. This new project has started to investigate the optimal model for providing this data to vehicles along with guidance for implementation.

Future focus

The *Austroads Strategic Plan 2020-2024* outlines a new direction for Austroads focusing on solving problems for transport agencies and providing high-quality, practical and impartial advice based on comprehensive research.

The Strategic Plan contains eight themes that focus the work and direction of Austroads. Although all themes apply to all programs, the Future Vehicles and Technology program is especially driven by technology, data, customers, sustainability and safety. Its objectives are to:

- support members to identify and prepare for technologies that could significantly impact on their businesses and customers
- support members to build the data management capabilities of their staff and provide systems that harmonise data collection and analysis
- research the implications for transport agencies of introducing low and zero emission vehicles which could significantly reduce the carbon footprint of road transport
- deliver new guidance and products to ensure new knowledge is translated into practical applications.

From 1 July 2020, the Future Vehicles and Technology program is moving its focus from research to the development of guidance to support agencies working on connected, automated and low emission vehicles. Following the release of *Future Vehicles 2030*, the number of projects focusing on automated vehicles in 2020–2021 will be reduced whilst the proportion of projects focusing on low and zero emission vehicles and their infrastructure needs will increase. Major work around the provision, storage and analysis of vehicle and agency generated data is expected to continue through 2020-¬21 as Austroads takes on a national leadership role in this space.

Projects approved for commencement in 2020–21 are:

Connected and automated vehicles	
FCA6276	Future vehicle trials, pilots and demonstrations database
SAG6291	Guide to Road Safety update – practical approaches for managing regional road safety priorities
Physical and digital infrastructure	
FCI6258	Understanding the benefits and costs of providing a minimum physical infrastructure standard for the operation of automated driving
FDI6304	Guidance for road agencies supporting cloud connected road users
Low and zero emission vehicles	
FLZ6261	Standardised signage and pavement symbols for electric vehicles
FLZ6262	Guidelines to support the installation of low and zero emission vehicle charging and refueling infrastructure within the road reserve

KNOWLEDGE SHARING

Building capacity through exchange and collaboration

Overview

Knowledge sharing and capacity building are core activities for all Austroads Programs.

The delivery of the Austroads website, publications, tools, webinars and events is supported by a small communications team based in the Austroads national office.

2019–20 Activities

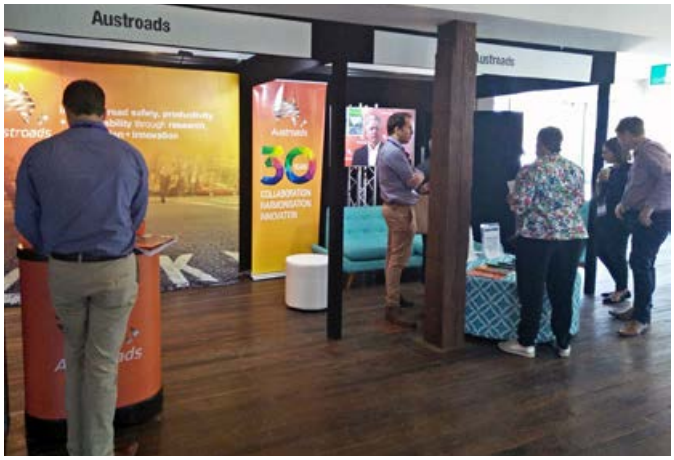
Use of the Austroads website continues to grow with more than 450,000 visits made to the site in 2019-20, a 20% increase on the previous year. The site had close to 69,000 registered users by the end of the financial year, more than double the users in the previous year. More than 2.9 million pages (200,000 more than the previous year) were viewed on the website.

During the year we produced 133 publications including 36 guides, 76 reports and 21 test methods and technical specifications. More than 338,000 publications were downloaded (10,000 more than the previous year).

Austroads' webinar series continues strongly with 44 online sessions delivered to an audience of about 6,000. More than 14,000 watched recordings of the sessions either on our website or as podcasts. The webinars continue to receive excellent feedback from participants. In 2020 we refocussed the webinars to provide more practical guidance.

Austroads sponsored three conferences during the year, providing an opportunity to meet with practitioners and present research and project findings to attendees. Booths and presentations were made at the: 18th AAPA International Flexible Pavement Conference held in Sydney in August 2019; fifth Australasian Road Safety Conference, of which Austroads is a founding partner, held in September 2019 in Adelaide; and ALGA National Local Roads and Transport Congress held in Adelaide in November 2019.

In December 2019 we launched the Guide to Temporary Traffic Management in Brisbane with more than 100 people attending in person and 300 people watching the live stream.

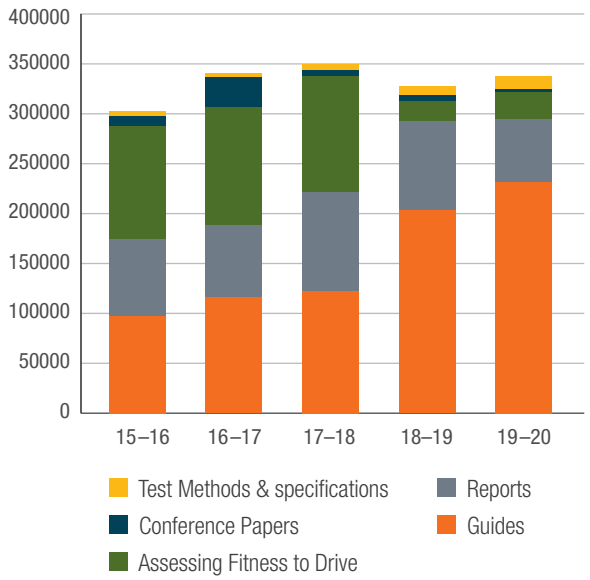


Above left: Austroads' booth at the AAPA Flexible Pavements Conference 2019

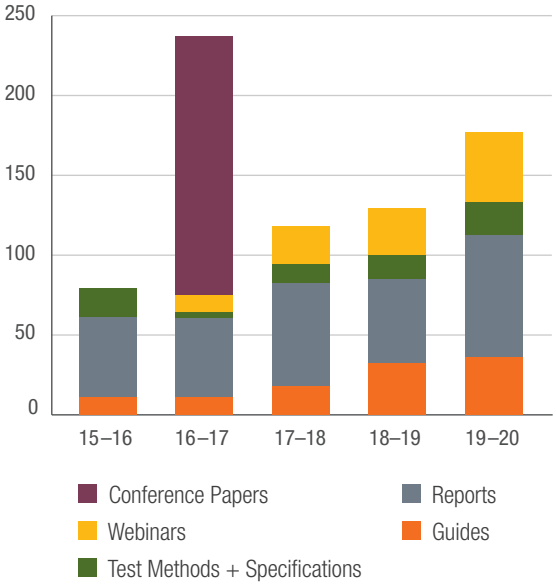
Above right: Austroads' booth at the ALGA National Local Roads and Transport Congress 2019

Left: Austroads' booth at the Australasian Road Safety Conference 2019

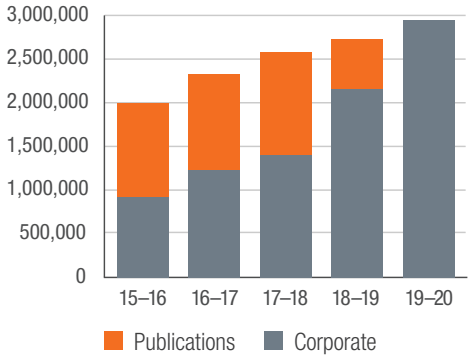
PUBLICATION DOWNLOADS AND SALES 5 YEAR COMPARISON



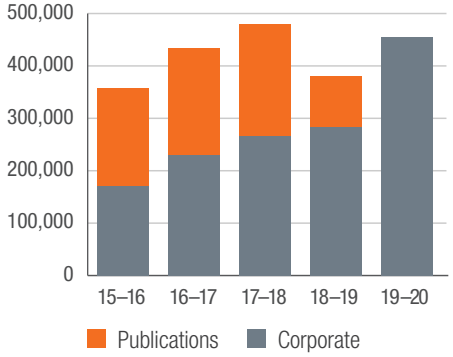
PUBLICATIONS AND WEBINARS PRODUCED 5 YEAR COMPARISON



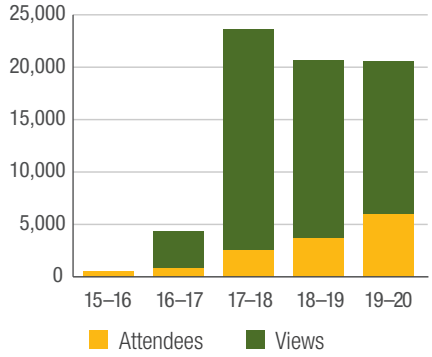
WEBSITE PAGE VIEWS 5 YEAR COMPARISON



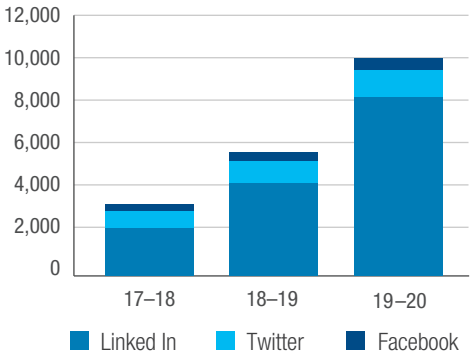
WEBSITE USERS 5 YEAR COMPARISON



WEBINARS 5 YEAR COMPARISON



SOCIAL MEDIA FOLLOWERS



PUBLICATIONS AND WEBINARS: 1 JULY 2019– 30 JUNE 2020

Guides		Downloads
AGPT02-17	Guide to Pavement Technology Part 2: Pavement Structural Design (Ed 4.3)	9,609
AGPT04K-18	Guide to Pavement Technology Part 4K: Selection and Design of Sprayed Seals (Ed 1.3)	1,507
AGPT05-19	Guide to Pavement Technology Part 5: Pavement Evaluation and Treatment Design (Ed 4.0)	2,790
AGPT05-19	Guide to Pavement Technology Part 5: Pavement Evaluation and Treatment Design (Ed 4.1)	349
AGPT08-19	Guide to Pavement Technology Part 8: Pavement Construction (Ed 2.0)	2,192
AGPD02-14	Guide to Project Delivery Part 2: Planning and Control (Ed 2.1)	324
AGRD03-16	Guide to Road Design Part 3: Geometric Design (Ed 3.3)	4,175
AGRS05-19	Guide to Road Safety Part 5: Road Safety for Rural and Remote Areas (Ed 2.0)	984
AGRS06-19	Guide to Road Safety Part 6: Managing Road Safety Audit (Ed 1.0)	2,183
AGRS06A-19	Guide to Road Safety Part 6A: Implementing Road Safety Audit (Ed 1.2)	1,794
AGTTM01-19	Guide to Temporary Traffic Management Part 1: Introduction (Ed 1.0)	2,571
AGTTM02-19	Guide to Temporary Traffic Management Part 2: Traffic Management Planning (Ed 1.0)	1,489
AGTTM03-19	Guide to Temporary Traffic Management Part 3: Static Worksites (Ed 1.0)	1,786
AGTTM04-19	Guide to Temporary Traffic Management Part 4: Mobile Works (Ed 1.0)	1,206
AGTTM05-19	Guide to Temporary Traffic Management Part 5: Short Term Low Impact Worksites (Ed 1.0)	1,369
AGTTM06-19	Guide to Temporary Traffic Management Part 6: Field Staff – Implementation and Operation (Ed 1.0)	1,095
AGTTM07-19	Guide to Temporary Traffic Management Part 7: Traffic Controllers (Ed 1.0)	1,146
AGTTM08-19	Guide to Temporary Traffic Management Part 8: Processes and Procedures (Ed 1.0)	1,127
AGTTM09-19	Guide to Temporary Traffic Management Part 9: Sample Layouts (Ed 1.0)	1,760
AGTTM10-19	Guide to Temporary Traffic Management Part 10: Supporting Guidance (Ed 1.0)	973
AGTM01-19	Guide to Traffic Management Part 1: Introduction to Traffic Management (Ed 3.1	1,199
AGTM01-20	Guide to Traffic Management Part 1: Introduction to the Guide to Traffic Management (Ed 4.0)	898
AGTM02-20	Guide to Traffic Management Part 2: Traffic Theory Concepts (Ed 3.0)	301
AGTM03-20	Guide to Traffic Management Part 3: Transport Study and Analysis Methods (Ed 4.0)	529
AGTM04-20	Guide to Traffic Management Part 4: Network Management Strategies (Ed 5.0)	254
AGTM05-20	Guide to Traffic Management Part 5: Link Management (Ed 4.0)	252
AGTM06-20	Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings Management (Ed 4.0)	762
AGTM07-20	Guide to Traffic Management Part 7: Activity Centre Transport Management (Ed 3.0)	125
AGTM08-20	Guide to Traffic Management Part 8: Local Street Management (Ed 3.0)	415
AGTM09-20	Guide to Traffic Management Part 9: Transport Control Systems – Strategies and Operations (Ed 4.0)	246
AGTM10-20	Guide to Traffic Management Part 10: Transport Control – Types of Devices (Ed 3.0)	589
AGTM11-20	Guide to Traffic Management Part 11: Parking Management Techniques (Ed 3.0)	399
AGTM12-20	Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments (Ed 3.0)	274
AGTM13-20	Guide to Traffic Management Part 13: Safe System Approach to Transport Management (Ed 4.0)	151
AGRT04-19	Guide to Road Tunnels Part 4: Retrofitting Tunnels (Ed 1.0)	476
AGPD02-14	Guide to Project Delivery Part 2: Planning and Control (ed 2.1)	266

Research and Technical Reports		Downloads
AP-R625-20	Australasian Pedestrian Facility Selection Tool [V2.2]: User Guide	71
AP-R624-20	Procurement Decision Tool: A Case Study of the Toowoomba Second Range Crossing	30
AP-R623-20	Future Vehicles 2030	233
AP-R622-20	Motorised Mobility Devices: Establishing a Nationally Consistent Framework and Adopting Technical Specification 3695.3.2018	95
AP-R621-20	Building Transport Modelling Management Capacity	445
AP-R620-20	Vehicle Registration and Driver Licensing in Australia, New Zealand and Europe: A Comparison Study	185
AP-R619-20	Network Design for Road Safety (Stereotypes for Cross-sections and Intersections) User Guide	783
AP-R618-20	Road cross-section design for road stereotypes (including Network Safety Plans) and a Safe System	746
AP-R617-20	Bridge Assessment Beyond the AS 5100 Deterministic Methodology	525
AP-R616-20	Education and Training for Drivers of Assisted and Automated Vehicles	337
AP-R615-20	Investigation and Development of Bridge Formulae for Inclusion in the Performance-based Standards	327
AP-R614-20	Assessment of Key Road Operator Actions to Support Electric Vehicles	637
AP-R613-20	Effectiveness of Drink Driving Countermeasures: National Policy Framework	693
AP-R612-20	Local Government Road Safety Management Guidance	1,229
AP-R611-20	Integrating Safe System with Movement and Place for Vulnerable Road Users	2,236
AP-R610-20	Inclusion of Recent Road Safety Research into the Guide to Road Design: Summary of Research Reports	556
AP-R609-19	Improving the Reliability of Heavy Vehicle Parameters to Support More Accurate Traffic Modelling in Australia and New Zealand	618
AP-R608-19	Standardisation of ITS Technology Asset Management Datasets	656
AP-R607-19	Rollover Crashes – Road Design Risk Factors and Infrastructure Solutions	488
AP-R606-19	Infrastructure Changes to Support Automated Vehicles on Rural and Metropolitan Highways and Freeways: Project Findings and Recommendations (Module 5)	464
AP-R605-19	Infrastructure Changes to Support Automated Vehicles on Rural and Metropolitan Highways and Freeways: Emerging Asset Information Technology (Module 4)	305
AP-R604-19	Infrastructure Changes to Support Automated Vehicles on Rural and Metropolitan Highways and Freeways: Asset Standards (Module 3)	267
AP-R603-19	National View on Regional and Remote Road Safety	400
AP-R602-19	Key Freight Routes: Heavy Vehicle Usage Data Project	406
AP-R591-19	Guidelines for the Provision of Heavy Vehicle Rest Area Facilities V1.1	303
AP-R601-19	Opportunities in Mobility as a Service (MaaS)	409
AP-R600-19	Case Studies of Critical Learnings in Network Operations, Congestion Management Relief Initiatives and Planned Activities	312
AP-T353-20	Sustainable Roads Through Fit-for-purpose Use of Available Materials: Evaluation Tool and User Guide	874
AP-T352-20	Sustainable Roads Through Fit-for-purpose Use of Available Materials: Technical Basis	495
AP-T351-19	Viability of Using Recycled Plastics in Asphalt and Sprayed Sealing Applications	1,597
AP-T350-19	Improved Methods of Using Pavement Deflection Data in the Design of Rehabilitation Treatments	911
AP-T349-19	Accelerated Long-term Ageing Methods for Sprayed Sealing Binders: A Field Validation Study	280
AP-T348-19	Infrastructure Changes to Support Automated Vehicle on Rural and Metropolitan Highways and Freeways: Road Audit (Module 2)	347
AP-T347-19	Infrastructure Changes to Support Automated Vehicle on Rural and Metropolitan Highways and Freeways: Audit Specification (Module 1)	504
AP-T262-19	Performance Requirements for Bitumen Sprayers (Edition 1.1)	193
AP-T346-19	Properties of General-purpose Cement with Increased Percentages of Limestone (Edition 1.1)	113
AP-T346-19	Properties of General-purpose Cement with Increased Percentages of Limestone (Edition 1.0)	155
AP-T345-19	Performance of Asphalt and Spray Grade PMBs in Sprayed Seals	221
AP-T344-19	Relationships Between Cutter Oil Properties and Sprayed Seal Performance (Edition 1.1)	208

Test methods and specifications		Downloads
AGPT-T000-20	Hyperlinked list of the Austroads Test Methods and Specifications	1,151
AGPT-T102-20	Protocol for Handling Modified Binders in Preparation for Laboratory Testing	273
AGPT-T103-20	Mass Change or Loss on Heating of Polymer Modified Binders after Rolling Thin Film Oven (RTFO) Treatment	199
AGPT-T112-20	Flash Point of Polymer Modified Binders	197
AGPT-T254-20	Stripping of Aggregate from Sprayed Seals	265
AGPT-T530-19	Calibration of Bitumen Sprayers: General Introduction and List of Methods	180
AGBT-T701-20	Alkali Silica Reactivity – Accelerated Mortar Bar	52
AGBT-T702-20	Alkali Silica Reactivity – Concrete Prism	66
ATS 2210	Supply of Steel Reinforced Precast Concrete Pipes	158
ATS 2230	Supply of Small Box Culverts	116
ATS 3110	Supply of Polymer Modified Binders	401
ATS 3470	Bituminous Pavement Crack Sealing	275
ATS 3480	Bituminous Surface Retexturing	309
ATS 5330	Supply of Geopolymer Concrete	156
ATS 5340	Cementitious Patch Repair of Concrete	185
ATS 5341	Repair of Concrete Cracks	424
ATS 5343	Coating of Concrete	153
ATS 5350	Waterproofing of Concrete Bridge Decks	119
ATS 5380	Fibre Reinforced Polymer Composite Strengthening	115
ATS 5390	Cathodic Protection of Concrete Structures	75
ATS 5420	Supply of Bolts, Nuts and Washers	59

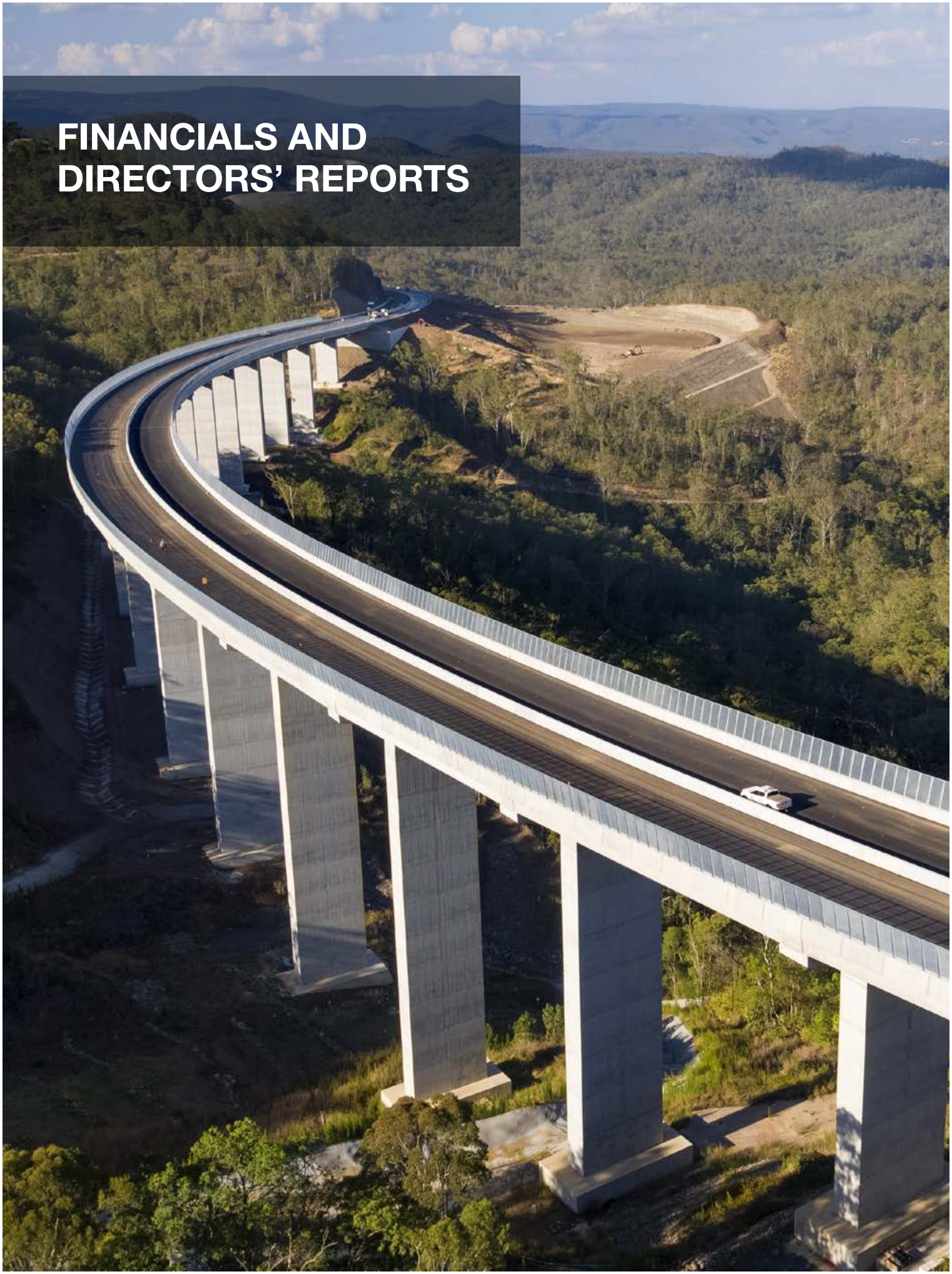
Internal Reports		Downloads
IR-303-20	Trip Generation Rates for Australia and New Zealand	-
IR-302-20	National Written Off Heavy Vehicle Register: Pre-implementation Tasks Relating to Inspection Capability	-
IR-301-20	Austroads Scoping Study: Heavy Vehicle Bridge Assessment System	-
IR-300-20	Vehicles as Workplace: Deployment and Promotion	-
IR-299-19	National interoperability protocol for digital licences and other digital products	-
IR-298-19	ITS Product Pilot for HITS Validation	-
IR-297-19	Review of Austroads National Prequalification System	-
IR-295-19	Survey of Australia and New Zealand Road Safety Practices	-
IR-294-19	Survey of Road Safety Practices: Project Report	-
IR-293-19	Exploration of Heavy Freight Vehicle Dimensions: productivity, safety and other considerations	-
IR-292-19	Optimising Drug Driving Deterrence Regimes	-
IR-291-19	Review of the National Framework for Heavy Vehicle Driver Competency – Phase 2	-
IR-290-19	Overseas Driver Licensing Policy Review	-
IR-289-19	A Review of the Delivery of Quality Assurance in Road Construction	-
IR-288-19	Security Vulnerability of Existing Intelligent Transportation Systems and Devices	-

Other Publications		Downloads
AP-C29-20	Austroads Strategic Plan 2020-2024	290
AP-C110-20	Decarbonisation of Road Transport Network Operations in Australia and New Zealand	355
AP-C109-20	Mapping Comparison: Guide to Temporary Traffic Management and Australian Standard 1742.3 (2009)	778
AP-C108-20	National Road Safety Speed Enforcement Approach	408
AP-C20-19	Austroads Annual Report 2018-19	202
AP-C107-19	Motorised Mobility Devices: Discussion Paper	133
AP-C96-19	National Prequalification System for Civil (Road and Bridge) Construction (2017 Edition)	713
AP-C106-19	Safe System Workshop Materials	-
AP-C105-19	Safe Roads Leaders Pack	385
AP-C91-19	National Cycling Participation Survey 2019	1,211
	National Cycling Participation Survey 2019: New South Wales	
	National Cycling Participation Survey 2019: Australian Capital Territory	
	National Cycling Participation Survey 2019: Victoria	
	National Cycling Participation Survey 2019: Tasmania	
	National Cycling Participation Survey 2019: South Australia	
	National Cycling Participation Survey 2019: Northern Territory	
	National Cycling Participation Survey 2019: Western Australia	
	National Cycling Participation Survey 2019: Queensland	
AP-C104-19	General Conditions of Contract for Construction - National Capital Works: NCW4 (Ed 1.1)	231
	Conditions of Subcontract for Construction - National Capital Works: NCW4 (Ed 1.1)	
	Explanatory Notes - National Capital Works: NCW4 (Ed 1.1)	
	Annexures - National Capital Works: NCW4 (Ed 1.1)	

Webinars		Attendees	Recording views
WEB-AAM6141-3	Introduction to the Life Cycle Costing Framework and its Application to Unsealed Roads	128	57
WEB-AAM6141-2	Introduction to the Life-Cycle Costing Framework and its Application to Sealed Roads	163	77
WEB-C110-20	Decarbonisation of Road Transport Network Operations in Australia and New Zealand	177	120
WEB-PED2-20	Measuring Pedestrians – Survey and Audit Methods	427	202
WEB-AAM6164-1	Introduction to the Materials Assessment Framework and its Application in Resource Assessment	111	113
WEB-PED1-20	Pedestrian Planning Concepts	681	324
WEB-AGTM-20	Charting Changes in Austroads' Guide to Traffic Management	360	170
WEB-R616-20	Education and Training for Drivers of Assisted and Automated Vehicles	161	121
WEB-R617-20	Bridge Assessment Beyond the AS5100 Deterministic Methodology	168	208
WEB-R615-20	Investigation and Development of Bridge Formulae for Inclusion in the Performance-based Standards	118	148
WEB-T353-20	Sustainable Roads Through Fit-for-purpose Use of Available Materials	230	310
WEB-R613-20	An Australian Drink Driving Policy and Regulatory Framework	101	159
WEB-R614-20	Assessment of Key Road Operator Actions to Support Electric Vehicles	128	187
WEB-R611-20	Integrating Safe System with Movement and Place with for Vulnerable Road Users	531	540
WEB-R612-20	Local Government Road Safety Management Guidance	287	357

Webinars		Attendees	Recording views
WEB-MSULR-20	Webinar: Managing Sealed and Unsealed Local Roads	247	505
AGTTM-10	Guide to Temporary Traffic Management Part 10: Supporting Guidance	-	229
AGTTM-09	Guide to Temporary Traffic Management Part 9: Sample Layouts	-	255
AGTTM-08	Guide to Temporary Traffic Management Part 8: Processes and Procedures	-	162
AGTTM-07	Guide to Temporary Traffic Management Part 7: Traffic Controllers	-	199
AGTTM-06	Guide to Temporary Traffic Management Part 6: Field Staff – Implementation and Operation	-	132
AGTTM-05	Guide to Temporary Traffic Management Part 5: Short Term Low Impact Worksites	-	189
AGTTM-04	Guide to Temporary Traffic Management Part 4: Mobile Works	-	205
AGTTM-03	Guide to Temporary Traffic Management Part 3: Static Worksites	-	192
AGTTM-02	Guide to Temporary Traffic Management Part 2: Traffic Management Planning (Presentation Video)	-	218
AGTTM-01	Guide to Temporary Traffic Management Part 1: Introduction (Presentation Video)	-	388
WEB-R609-19	Improving the Reliability of Heavy Vehicle Parameters to Support More Accurate Traffic Modelling	55	94
WEB-R609-20	Standardisation of ITS Technology Asset Management Datasets	75	165
WEB-R597-19	Australasian Road Asset Data Standard – Opportunities for Local Government	94	137
WEB-R606-19	Infrastructure Changes to Support Automated Vehicles on Rural and Metropolitan Highways and Freeways	147	382
WEB-IR-293-19	Exploration of Heavy Freight Vehicle Dimensions: Productivity, Safety and Other Considerations (Internal)	15	0
WEB-T346-19	Properties of General-purpose Cement with Increased Percentages of Limestone	59	148
WEB-SAG1871	Vehicles as a Workplace	127	66
WEB-R602-19	Key Freight Routes - Heavy Vehicle Usage Data Project	65	258
WEB-R603-19	National View on Regional and Remote Road Safety	149	267
WEB-R590-19	Dangerous Goods in Tunnels	80	183
WEB-R601-19	Opportunities in Mobility as a Service (MaaS)	172	237
WEB-AGRT04-19	Guide to Road Tunnels Part 4: Retrofitting Tunnels	63	149
WEB-AGPT05-19	Guide to Pavement Technology Part 5: Pavement Evaluation and Treatment Design	242	484
WEB-T345-19	Development of a Sprayed Seal Binder Cracking Test	102	182
WEB-C140-19	General Conditions of Contract for Construction - National Capital Works 4 (NCW4)	89	167
WEB-NSP6090-19	Opportunities in Artificial Intelligence Applied to Road Network Operations	115	398
WEB-T344-19	Relationships Between Cutter Oil Properties and Sprayed Seal Performance	83	240
WEB-AGAM-19	Austroads Guide to Asset Management	191	400

FINANCIALS AND DIRECTORS' REPORTS



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The directors of Austroads Ltd present this report on Austroads Ltd (the "Company") for the year ended 30 June 2020.

Directors

The names of each person who has been a director during the year and to the date of this report are:

- Neil Scales OBE
- Shane Gregory (ended 31 Jan 2020)
- Adrian Beresford-Wylie
- Alex Foulds (ended 7 Nov 19)
- Peter Woronzow
- Louise McCormick
- Brett Gliddon
- Tony Braxton-Smith
- James Corrigan (commenced 12 Jul 19)
- Matthew Fuller (commenced 4 Sep 19 and ended 11 Mar 2020)
- Robyn Seymour (commenced 5 Nov 19)
- Jessica Hall (commenced 7 Nov19)
- Gary Swain (commenced 19 Feb 2020)
- John Hardwick (commenced 12 Mar 2020)

Directors have been in office since the start of the financial year and are still directors to the date of this report unless otherwise stated.

Principal Activities

The principal activities of the Company during the financial year were to coordinate road transport related research and projects and to produce publications related to road transport.

The Company's short-term objectives are to:

- conduct strategic research that assists road agencies to address current and emerging issues;
- develop guides to establish national consistency on technical and operational aspects of road networks;
- facilitate knowledge sharing by promoting the wide dissemination of outputs and technology, conducting seminars and promoting the use of the Company's work;
- maintain and develop NEVDIS on behalf of road agencies as an essential national vehicle and driver licence information exchange; and
- foster international involvement by engaging with and supporting international road organisations.

The Company's long-term objectives are to:

- promote improved Australian and New Zealand transport outcomes;
- provide expert technical input to national policy development on road and road transport issues;
- promote improved practice and capability by road agencies;
- promote consistency in road and road agency operations; and
- redevelop NEVDIS and pursue opportunities to make the system financially self sufficient.

Strategies

The Company uses a program management approach to the delivery of the strategic plan. Each program focuses on an operational area of the road system but in doing so they address the Company's strategic priorities by undertaking a range of projects and contribute to improving transport outcomes in Australia and New Zealand. Austroads utilises the expertise of its member organisations to develop and deliver its research programs. This encourages a collaborative approach and facilitates learning, development, knowledge sharing and a high level of consistency across jurisdictions. An Operational Plan, which is monitored and reviewed by the Board, includes a number of proposed outputs for each program and an indicative four-year work plan with projects to produce these outputs.

Key Performance Measures

The Company's Outputs

The following measures have been developed to assess performance and progress against the delivery of actions identified in each of the Company programs:

- **Projects completed on time and on budget**

  This is a quantitative measure. Austroads had 110 projects underway or commence in 2019-20 financial year and 43 projects were completed. A further five were completed except for the webinar. At the end of the financial year, fifty-three projects were progressing in line with estimated schedule, three were running more than twelve months late and 12 were more than six months late. Projects were completed within the total project budget.

- **Take up of project outputs by road agencies and other stakeholders**

  This will be a quantitative and qualitative measure using metric for a small number of case studies.

  Case 1: Austroads established a national library of Hazard Perception Test (HPT) scenarios to provide a nationally consistent outcome and minimise jurisdictional capital investment by adopting a "Build Once Use Many" approach, estimated to save jurisdictions around $1 million each in development costs.

  The Hazard Perception Test clips have been:

  - **Downloaded by** – Western Australia, Victoria, New South Wales, Queensland and Australian Capital Territory
  - **Jurisdictions currently using** – Western Australia

  Austroads has been approached by two overseas jurisdictions (excluding New Zealand) on options to use the Hazard Perception Test clips.

  Case 2: In February Austroads completed the Integrating Safe System with Movement and Place for pedestrians and cyclists project. The report Integrating Safe System with Movement and Place for Vulnerable Road Users has been downloaded more than 2,400 times, 530 people attended the webinar and a further 620 have subsequently viewed it online.

- **Adoption of Austroads Guides by road agencies**

  At the start of the financial year, Austroads had nine Guides:
  - Guide to Road Design
  - Guide to Traffic Management
  - Guide to Asset Management
  - Guide to Pavement Technology
  - Guide to Project Delivery
  - Guide to Road Safety
  - Guide to Smart Motorways
  - Guide to Road Tunnels
  - Guide to Bridge Technology.

  Each of these Guides had been adopted Australian state and territory members and the New Zealand Transport Agency.

  In the financial year, Austroads also completed the *Guide to Temporary Traffic Management*.

Recognition by national policy bodies and road industry as a source of competent, professional research and guidance on road transport."

This is a qualitative performance measure and is demonstrated using a small number of cases.

Case 1: The Austroads Design Vehicles and Turning Path Templates Guide which is used by road designers to design intersections that allow for a swept path of a wide variety of vehicles was downloaded 13,400 times in 2019-20.

Case 2: When the Guide to Pavement Technology Part 2 Pavement Structural Design was extensively updated AustPADS, pavement design software, was developed to support the revised design procedures. AustPADS allows pavement engineers to conduct advanced mechanistic analysis of the response-to-load of road pavements. It is used at Australian universities to help train future road agency and local government pavement engineers. AustPADS was used by more than 1,600 users across more than 4,700 sessions in the financial year.

Case 3: The Commonwealth funded Best Practice Guides for local governments (Road Materials, Unsealed Roads, Sealed Roads and Bridge Management) drew from the existing Austroads Guides. This reflects the rigour in development of the Austroads Guides.

Board member satisfaction with progress delivering the strategic priorities

Austroads will work with the Board in 2020-21 to develop a metric for this performance measure.

Information on Directors

Neil Scales OBE | ONC (Eng), HNC (EEng), DMS, BSc (Eng), MSc (Control Engineering and Computer Systems), MBA, CEng (UK), FIEAust, FIET, FIMechE, FICE, FCILT, FCIT, FLJMU, FRSA, FSOE, MAICD

Neil Scales is Director-General of Queensland Department of Transport and Main Roads. He was previously CEO of TransLink, the public transport operator across Queensland. Prior to joining TransLink, Neil was the Chief Executive and Director General of Merseytravel; the transport authority for Merseyside in the north of England. Along with almost 40 years experience in the transport industry, he is a Fellow of three major UK engineering institutions. He received an OBE for services to public transport in 2005 and in 2011 he was awarded an honorary Fellowship from Liverpool John Moores University for his services to the region.

Shane Gregory | Assoc Dip Eng (Civil), MAICD

Shane Gregory is the General Manager State Roads for the Department of State Growth, Tasmania. He started his career in 1985 with the former Highways Department of South Australia where he spent 11 years in various design roles. He moved to Western Australia in 1996 to work with Connell Wagner on public and private infrastructure projects, before relocating to Tasmania in 2000 to work in the civil contracting industry. Prior to his current role, he was Manager of Planning and Design for the Department of Infrastructure, Energy and Resources between 2009 and 2012.

Adrian Beresford-Wylie | BA(Hons) LLB

Adrian Beresford-Wylie was appointed Executive Director of the Australian Local Government Association (ALGA) in 2006. He was previously a senior public servant in the Australian Public Service and headed the area dealing with local government and natural disasters in the Federal Department of Transport and Regional Services. Other roles include head of the road safety area of the Australian Transport Safety Bureau in 2000-2002 and advisor on maritime and land transport issues to the Hon. John Anderson MP, Deputy Prime Minister and Minister for Transport and Regional Services. He began his public service career in 1984 as a Foreign Affairs Officer with the Department of Foreign Affairs. He has also worked in corporate sales in Telstra and for a large law firm in Sydney.

Alex Foulds | B. Hist, MBA

Alex Foulds was Executive Director of Surface Transport Policy Division in the Department of Infrastructure, Regional Development and Cities. He was responsible for progressing the Australian Government's national reforms in surface transport policy and regulation (maritime, shipping, rail and road transport), road safety and vehicle design standards. He previously led implementation of the Australian Government's Infrastructure Investment Program, including the delivery, in partnership with states and territories, of major land transport infrastructure projects across Australia. Prior to this, he worked in a variety of Australian Public Service senior policy development, procurement and program delivery roles after a career as an infantry officer in the Australian Defence Force.

Peter Woronzow | BA (Economics), Grad Dip Public Sector Management, CPA

Peter Woronzow was appointed Managing Director of Main Roads in 2018. In managing the day to day operations of the agency, he draws on extensive experience from roles he has undertaken across the organisation. He manages strategic partnerships and develops strong relationships to deliver successful outcomes for the State. Prior to this appointment he was Executive Director of Finance and Commercial Services and Chief Finance Officer for over 10 years. Peter is a member of CPA Australia, he is Chairman of the Australian Road Research Board Group Ltd and is Board Director on Austroads Ltd, and through these and other roles actively contributes to the achievement of strong national transport outcomes.

Louise McCormick | B. Eng – Civil Engineering, Dip. Project Management

Louise McCormick is an Executive Engineer, Chartered Fellow and Senior Civil/Structural Engineer with 19 years' experience in the public and private sectors. In 2016, Louise was appointed as the General Manager for Transport and Civil Services Division within the Department of Infrastructure, Planning and Logistics NT. Louise has managed some of the largest transport infrastructure projects in the Territory. Louise has played an active role in Engineers Australia, and her work has been recognised through industry awards for projects and individual awards including Young Professional Engineer of the Year for the NT in 2007; Winner of the 2010 NT Telstra Business Women's Award for Innovation; National Finalist for the 2010 Telstra Business Women's Award for Innovation.

Brett Gliddon

Brett Gliddon joined the New Zealand Transport Agency when it was previously known as Trust New Zealand. Brett is the General Manager System Design and Delivery and is responsible for overseeing design, delivery and management of a single integrated transport system. Brett is a qualified Civil Engineer and has more than 18 years' experience in infrastructure planning, design and delivery including maintenance and operations. Brett has been involved in the development of some of New Zealand's largest infrastructure projects including the $200M Multi Modal Northern Busway project, the $360M Northern Gateway Toll Road project (New Zealand's first Electronic Toll road), the $1.4B Waterview Tunnel Project.

Tony Braxton-Smith | MBA

Tony Braxton-Smith became Chief Executive of the Department of Planning, Transport and Infrastructure in October 2018. He is also the South Australian Rail Commissioner and Commissioner for Highways. His role encompasses overseeing a broad range of government objectives ensuring the effective delivery of services involving planning, transport and valuable social and economic infrastructure throughout the State of South Australia. Formerly the Deputy Secretary Customer Services at Transport for New South Wales for seven years, Tony's prior career spans 20 years in senior executive roles in the private sector with Great Southern Rail and Serco; Dreamworld and the P&O Group.

James Corrigan

Jim Corrigan has qualifications in urban and regional planning and environmental design and has over 25 years public sector experience in a range of positions within the ACT and NSW Governments. Jim is currently the Deputy Director-General City Services for the ACT Government which has responsibility for managing the public areas of

Canberra and provision of core services including Waste Management, civil infrastructure such as roads and stormwater system, urban parks and associated capital works delivery.

Matthew Fuller

Matt Fuller was Transport for NSW's A/Deputy Secretary Regional NSW and Outer Metropolitan. Matt has spent almost two years within the Transport Cluster at Roads and Maritime Services, transforming the delivery of the Corporate and Commercial Services provided to the organisation by the Business Services team. In his new role, Matt has the opportunity to link his executive experience with two of his great passions: high quality customer experiences and enhancing outcomes for Regional Communities.

Jessica Hall

Jessica Hall is the First Assistant Secretary, COVID Surface Transport, for the Australian Government's Department of Infrastructure, Transport, Regional Development and Communications. Prior to this, Jessica held a number of senior positions in the infrastructure, science and education portfolios, having worked on economic and social policy issues in the Australian Public service for over 15 years. She has undertaken an Executive program in infrastructure financing at Harvard Kennedy School, and has masters degree in international law and Asian studies.

Robyn Seymour

Robyn Seymour is Deputy Secretary, Network Planning, and Head of Road Safety Victoria both within the Department of Transport (Victoria). Working across all transport modes, in an integrated manner, Robyn is responsible for the Department's outputs on transport strategy, system design and service planning. As inaugural head of Road Safety Victoria, Robyn is leading the consolidation and strengthening of the work of Victoria's road safety partners to reduce the road toll as part of Towards Zero strategy while also developing the next Road Safety Strategy. Robyn has worked in road safety for 20 years and is committed to reducing trauma on the roads. She held a number of senior positions most recently serving as the Chief Executive of VicRoads.

Gary Swain

Gary currently holds the positions of Deputy Secretary, Transport Services Group, Department of State Growth, Transport Commissioner for Tasmania and Interim CEO of Infrastructure Tasmania. As Deputy Secretary Transport Services, Gary's role spans network planning, capital program delivery, asset management, passenger transport policy, procurement, regulation, road safety and registration and licensing. As Commissioner for Transport he makes complex statutory decisions, and supports co-ordinated outcomes between road managers, particularly state and local government. Through his Interim CEO responsibilities, Gary plays a broad strategic infrastructure policy and planning role within Tasmania. Gary has more than 25 years experience, primarily in the infrastructure sectors of transport, electricity, natural gas and water and sewerage. He is Director of Austroads, Chair of Transport Certification Australia and a member of the Road Safety Advisory Council for Tasmania.

John Hardwick

John Hardwick is the Executive Director of the Asset Management Branch at Transport for NSW and is responsible for leading and enabling transport service outcomes for customers and communities through effective whole of life asset management. John was previously the Executive Director, Sydney Division for the former Roads and Maritime Services. John has a background of over 30 years in asset management within the electricity and transport industries. He is a graduate of the Australian Institute of Company Directors and serves as a board member for numerous global and Australian asset management organisations and co-authored the book Living Asset Management. In 2018 John was awarded the MESA medal by the Asset Management Council.

Company Secretary

The following person held the position of entity Secretary at the end of the financial year:

Nick Koukoulas | MBA

Mr Koukoulas commenced with Austroads Ltd on 3 November 2014 as Chief Executive and was appointed company secretary on 6 November 2015 at the Austroads Board meeting. He is also a member of the Executive Committee. Mr Koukoulas retired from his role on 15 April 2020.

Dr Geoff Allan

Dr Allan holds a PhD in public sector management. He commenced with Austroads Ltd on 21 October 2019 as Chief Operating Officer and was appointed Company Secretary on 2 April 2020. He was appointed as the Chief Executive in June 2020 and is also a member of the Executive Committee.

Meetings of Directors

During the financial year, three meetings of directors were held. Attendances by each director were as follows:

Director	Eligible meetings	Meetings attended
Adrian Beresford-Wylie	3	2
Alex Foulds	1	1
Brett Gliddon	3	3
Gary Swain	1	1
James Corrigan	2	2
Jessica Hall	2	1
John Hardwick	1	1
Louise McCormick	3	3
Matthew Fuller	1	1
Neil Scales	3	3
Peter Woronzow	3	2
Robyn Seymour	2	2
Shane Gregory	2	2
Tony Braxton-Smith	3	2

Alternate directors attended meetings as follows:

Alternate director	Alternate for	Meetings attended
Dennis Walsh	Neil Scales	-
Desmond Snook	Peter Woronzow	-
Emma Kokar	Tony Braxton-Smith	1
Jeff McCarthy	Matthew Fuller	-
Kym Foster	Adrian Beresford-Wylie	1
Nicholas Papandonakis	Nicholas Papandonakis Louise McCormick	-

The Company is limited by guarantee and is incorporated under the Corporations Act 2001. If the Company is wound up, the constitution states that each member is required to contribute a maximum of $10 each towards meeting any outstanding obligations of the Company. At 30 June 2020, the total amount that members of the Company are liable to contribute if the Company is wound up is $110 (2019: $110).

Auditor's Independence Declaration

The lead auditor's independence declaration for the year ended 30 June 2020 has been received and can be found on page 68 of the financial report.

Signed in accordance with a resolution of the Board of Directors.

Neil Scales OBE
Chair
Dated this 12th day of October 2020

PITCHER PARTNERS

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Sydney NSW 2000

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Sydney NSW 2001

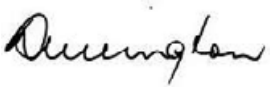
p. +61 2 9221 2099
e. sydneypartners@pitcher.com.au

Auditor's Independence Declaration
To the Directors of Austroads Ltd
ABN 16 245 787 323

In relation to the independent audit for the year ended 30 June 2020, to the best of my knowledge and belief, there have been:

(i) no contraventions of the auditor independence requirements of the *Corporations Act 2001*; and
(ii) No contraventions of APES 110 Code of Ethics for Professional Accountants (including Independence Standards).

This declaration is in respect of Austroads Ltd during the year.



C MILLINGTON
Partner

PITCHER PARTNERS
Sydney

12 October 2020

Statement of Profit or Loss and Other Comprehensive Income for the Year Ended 30 June 2020

	Notes	2020 $	2019 $
Revenue	2	26,795,457	26,024,700
Expenses			
Corporate Expenses	3(a)	5,845,240	5,513,277
Work Program	3(b)	10,496,610	10,470,894
Specific Projects	3(c)	578,266	985,024
Publications	3(d)	12,763	20,937
Other NEVDIS Related Expenses	3(e)	5,207,968	4,540,289
Depreciation and Amortisation Expenses		1,917,904	875,167
Total expenses		24,058,751	22,405,588
Surplus for the year		**2,736,706**	**3,619,112**
Other comprehensive income		-	-
Total comprehensive income for the year		**2,736,706**	**3,619,112**
Total comprehensive income attributable to members of the entity		**2,736,706**	**3,619,112**

Statement of Financial Position as at 30 June 2020

	Notes	2020 $	2019 $
ASSETS			
Current assets			
Cash and Cash Equivalents	4	8,388,876	4,601,586
Financial Assets at Amortised Cost – Term Deposits		23,500,000	23,349,863
Trade and Other Receivables	5	2,515,209	2,506,302
Other Assets	6	101,942	103,841
Total current assets		34,506,027	30,561,592
Non-current assets			
Plant and Equipment	7	86,785	78,791
Intangible assets	8	5,831,305	6,971,467
Lease Assets	10	304,017	-
Other Assets	6	126,635	123,526
Total non-current assets		6,348,742	7,173,784
Total assets		**40,854,769**	**37,735,376**
LIABILITIES			
Current liabilities			
Trade and Other Payables	9	2,960,350	2,876,406
Lease Liabilities – Current	10	317,425	-
Provision for Employee Benefits	11	296,715	199,861
Total current liabilities		3,574,490	3,076,267
Non-current liabilities			
Make Good Provision		21,840	21,840
Provision for Employee Benefits	11	169,671	285,207
Total non-current liabilities		191,511	307,047
Total liabilities		**3,766,001**	**3,383,314**
Net assets		**37,088,768**	**34,352,062**
Equity			
Accumulated Surplus		6,569,113	6,744,872
NEVDIS Reserve	1(m)	30,519,655	27,607,190
Total Equity		**37,088,768**	**34,352,062**

Statement of Changes in Equity for the Year Ended 30 June 2020

	NEVDIS Reserve $	Accumulated Surplus $	Total Equity $
Balance at 1 July 2018	24,376,130	6,356,820	30,732,950
Comprehensive income			
Surplus for the year	-	3,619,112	3,619,112
Transfer to Reserve	3,231,060	(3,231,060)	-
	27,607,190	6,744,872	34,352,062
Balance at 30 June 2019	27,607,190	6,744,872	34,352,062
Comprehensive income			
Surplus for the year	-	2,736,706	2,736,706
Transfer to Reserve	2,912,465	(2,912,465)	-
	30,519,655	**6,569,113**	**37,088,768**
Balance at 30 June 2020	**30,519,655**	**6,569,113**	**37,088,768**

Statement of Cash Flows for the Year Ended 30 June 2020

	Notes	2020 $	2019 $
Cash Flows from Operating Activities			
Member Contributions		14,216,652	14,232,428
Receipts from Customers and Other Sources		11,928,147	11,087,516
Payments to Suppliers and Employees		(22,056,633)	(22,060,306)
Interest Received		641,751	679,406
Interest Paid		(21,210)	-
Net Cash Inflow from Operating Activities	13	**4,708,707**	**3,939,044**
Cash Flow from Investing Activities			
Movement in Term Deposits		(150,137)	(2,449,863)
Purchase of Plant and Equipment		(56,628)	(56,031)
Purchase of Intangible Assets		(424,043)	(3,684,324)
Net cash used in Investing Activities		**(630,808)**	**(6,190,218)**
Cash Flow from Financing Activities			
Repayment of Lease Liabilities		(290,609)	-
Net cash used in Investing Activities		**(290,609)**	**-**
Net increase in cash held		3,787,290	(2,251,174)
Cash at the beginning of the financial year		4,601,586	6,852,760
Cash at the end of the financial year	4	**8,388,876**	**4,601,586**

The accompanying notes form part of these financial statements.

Notes to the Financial Statements for the Year Ended 30 June 2020

The financial statements are for Austroads Ltd. ("the Company") as an individual entity. The Company is a public entity limited by guarantee, incorporated and domiciled in Australia.

Note 1 — Summary of Significant Accounting Policies

Basis of Preparation

The directors have prepared the financial statements on the basis that the Company is a non-reporting entity because there are no users who are dependent on general purpose financial statements. These financial statements are therefore special purpose financial statements that have been prepared in order to meet the requirements of the Corporations Act 2001. Consolidation financial statements, including the results and operations of Austroads subsidiary, Transport Certification Australia, have not been prepared as the directors have determined that the group is not a reporting entity.

These financial statements have been prepared in accordance with the recognition and measurement requirements specified by the Australian Accounting Standards and Interpretations issued by the Australian Accounting Standards Board ('AASB') and the disclosure requirements of AASB 101 'Presentation of Financial Statements', AASB 107 'Statement of Cash Flows', AASB 108 'Accounting Policies, Changes in Accounting Estimates and Errors', AASB 1048 'Interpretation of Standards' and AASB 1054 'Australian Additional Disclosures', as appropriate for not-for-profit entities. The principal accounting policies adopted in the preparation of the financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

The financial statements, except for the cash flow information, have been prepared on an accruals basis and are based on historical costs unless otherwise stated in the notes.

The financial statements were authorised for issue on 12 October 2020 by the directors of the Company.

New accounting standards and interpretations adopted

The company has adopted all of the new or amended Accounting Standards and Interpretations issued by the Australian Accounting Standards Board ('AASB") that are mandatory for the current reporting period.

Any new or amended Accounting Standards or Interpretations that are not mandatory have not been early adopted.

The adoption of these Accounting Standards and Interpretations did not have any significant impact on the financial performance or position of the company.

The following Accounting Standards and Interpretations are most relevant to the company:

AASB 16 Leases

The company has adopted AASB 16 from 1 July 2019. The standard replaces AASB 117 'Leases' and for lessees eliminates the classifications of operating leases and finance leases. Except for short-term leases and leases of low-value assets, right-of-use assets and corresponding lease liabilities are recognised in the statement of financial position. Straight-line operating lease expense recognition is replaced with a depreciation charge for the right-of-use assets (included in operating costs) and an interest expense on the recognised lease liabilities (included in finance costs). In the earlier periods of the lease, the expenses associated with the lease under AASB 16 will be higher when compared to lease expenses under AASB 117. However, EBITDA (Earnings Before Interest, Tax, Depreciation and Amortisation) results improve as the operating expense is now replaced by interest expense and depreciation in profit or loss. For classification within the statement of cash flows, the interest portion is disclosed in operating activities and the principal portion of the lease payments are separately disclosed in financing activities. For lessor accounting, the standard does not substantially change how a lessor accounts for leases.

In accordance with the transition requirements of AASB 16, the company has elected to apply AASB 16 retrospectively to those contracts that were previously identified as leases under the predecessor standard.

The company has elected to apply the following practical expedients to the measurement of right-of-use assets and lease liabilities in relation to those leases previously classified as operating leases under the predecessor standard:

- to not recognise a right-of-use asset and a lease liability for leases for which the underlying asset is of low value; and
- to not recognise a right-of-use asset and a lease liability for leases for which the lease term ends within 12 months of the date of initial application.

AASB 15 Revenue from Contracts with Customers

The company has adopted AASB 15 from 1 July 2019. The standard provides a single comprehensive model for revenue recognition. The core principle of the standard is that an entity shall recognise revenue to depict the transfer of promised goods or services to customers at an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The standard introduced a new contract-based revenue recognition model with a measurement approach that is based on an allocation of the transaction price. This is described further in the accounting policies below. Credit risk is presented separately as an expense rather than adjusted against revenue. Contracts with customers are presented in an entity's statement of financial position as a contract liability, a contract asset, or a receivable, depending on the relationship between the entity's performance and the customer's payment. Customer acquisition costs and costs to fulfil a contract can, subject to certain criteria, be capitalised as an asset and amortised over the contract period.

AASB 1058 Income of Not-for-Profit Entities

The company has adopted AASB 1058 from 1 July 2019. The standard replaces AASB 1004 'Contributions' in respect to income recognition requirements for not-for-profit entities. The timing of income recognition under AASB 1058 is dependent upon whether the transaction gives rise to a liability or other performance obligation at the time of receipt. Income under the standard is recognised where: an asset is received in a transaction, such as by way of grant, bequest or donation; there has either been no consideration transferred, or the consideration paid is significantly less than the asset's fair value; and where the intention is to principally enable the entity to further its objectives. For transfers of financial assets to the entity which enable it to acquire or construct a recognisable non-financial asset, the entity must recognise a liability amounting to the excess of the fair value of the transfer received over any related amounts recognised. Related amounts recognised may relate to contributions by owners, AASB 15 revenue or contract liability recognised, lease liabilities in accordance with AASB 16, financial instruments in accordance with AASB 9, or provisions in accordance with AASB 137. The liability is brought to account as income over the period in which the entity satisfies its performance obligation. If the transaction does not enable the entity to acquire or construct a recognisable non-financial asset to be controlled by the entity, then any excess of the initial carrying amount of the recognised asset over the related amounts is recognised as income immediately.

Impact of adoption

AASB 15, AASB 16 and AASB 1058 were adopted using the modified retrospective approach and as such comparatives have not been restated. There was no impact on opening retained surplus as at 1 July 2019. The incremental borrowing rate applied is 5%.

	1 July 2019 $
Operating lease commitment at 30 June 2019 as disclosed under AASB 117 in the company's financial statements	615,819
Discounted using the incremental borrowing rate at 1 July 2019	7,785
Lease liabilities recognised at 1 July 2019	608,034

Accounting Policies

(a) Revenue

The company recognises revenue as follows:

Revenue from contracts with customers

Revenue is recognised at an amount that reflects the consideration to which the company is expected to be entitled in exchange for transferring goods or services to a customer. For each contract with a customer, the company: identifies the contract with a customer; identifies the performance obligations in the contract; determines the transaction price which takes into account estimates of variable consideration and the time value of money; allocates the transaction price to the separate performance obligations on the basis of the relative stand-alone selling price of each distinct good or service to be delivered; and recognises revenue when or as each performance obligation is satisfied in a manner that depicts the transfer to the customer of the goods or services promised.

Variable consideration within the transaction price, if any, reflects concessions provided to the customer such as discounts, rebates and refunds, any potential bonuses receivable from the customer and any other contingent events. Such estimates are determined using either the 'expected value' or 'most likely amount' method. The measurement of variable consideration is subject to a constraining principle whereby revenue will only be recognised to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur. The measurement constraint continues until the uncertainty associated with the variable consideration is subsequently resolved. Amounts received that are subject to the constraining principle are recognised as a refund liability.

Fees and charges

Fees and charges are recognised over the period to which the provision of services relate.

Contribution revenue

Contribution revenue is recognised at a point in time when received or when the right to receive payment is established.

Grant revenue

Grant funding that contain specific conditions on the use of those funds are recognised as and when the Company satisfies its performance obligations. A contract liability is recognised for unspent grant funds for which a refund obligation exists in relation to the funding period. General grants that do not impose specific performance obligations on the Company are recognised as income when the Company obtains control of those funds, which is usually on receipt.

Interest Income

Interest income is recognised on an accruals basis using the effective interest.

Other Revenue

Other revenue are recognised as income upon receipt of those income.

(b) Currency

The financial statements of the Company are presented in Australian dollars, the Company's functional and presentation currency.

(c) Income tax

The Company has been exempted from income tax under section 50-5 of the *Income Tax Assessment Act 1997*.

(d) Right-of-use assets

A right-of-use asset is recognised at the commencement date of a lease. The right-of-use asset is measured at cost, which comprises the initial amount of the lease liability, adjusted for, as applicable, any lease payments made at or before the commencement date net of any lease incentives received, any initial direct costs incurred, and, except where included in the cost of inventories, an estimate of costs expected to be incurred for dismantling and removing the underlying asset, and restoring the site or asset.

Right-of-use assets are depreciated on a straight-line basis over the unexpired period of the lease or the estimated useful life of the asset, whichever is the shorter. Where the company expects to obtain ownership of the leased asset at the end of the lease term, the depreciation is over its estimated useful life. Right-of use assets are subject to impairment or adjusted for any remeasurement of lease liabilities.

(e) Plant and Equipment

Plant and equipment are measured on the cost basis less depreciation and impairment losses.

The carrying amount of plant and equipment is reviewed annually by directors to ensure it is not in excess of the recoverable amount from these assets. The recoverable amount is assessed on the basis of the expected net cash flows that will be received from the assets employment and subsequent disposal.

Depreciation

The depreciable amount of all fixed assets is depreciated on a straight line basis over the asset's useful life to the entity commencing from the time the asset is held ready for use.

The depreciation rates used for each class of depreciable assets are:

Class of Fixed Asset	Depreciation Rate
Furniture and office equipment	20 - 33.33%

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Gains and losses on disposals are determined by comparing proceeds with the carrying amount. These gains or losses are included in the statement of profit or loss and other comprehensive income.

(f) Cash and cash equivalents

Cash and cash equivalents include cash on hand, deposits held at call with financial institutions, and other short term highly liquid investments with original maturities of three months or less.

(g) Trade receivables

All trade debtors are recognised at the amounts receivable as they are due for settlement no more than 120 days from the date of recognition, and no more than 30 days for other debtors.

There is no provision for expected credit loss allowance, as all receivables are fully recoverable.

(h) Goods and Services Tax (GST)

Revenues, expenses and assets are recognised net of the amount of GST, except where the amount of GST incurred is not recoverable from the Tax Office. In these circumstances the GST is recognised as part of the cost of acquisition of the asset or as part of an item of expense. Receivables and payables in the statement of financial position are shown inclusive of GST.

Cash flows are presented in the statement of cash flows on a gross basis, except for the GST component of investing and financing activities, which are disclosed as operating cash flows.

(i) Provision for employee entitlements

Provisions for long service leave and annual leave are made for all employees from the date of their commencement and are calculated at current pay rates. Additionally, provision is made for On Costs of 13% on long service leave and annual leave.

Provisions for long service leave for service under six years is treated as a non current liability.

(j) Trade and other payables

These amounts represent liabilities for goods and services provided to the Company prior to the end of financial year which are unpaid. The amounts are unsecured and are usually paid within 30 days of recognition.

(k) Lease liabilities

A lease liability is recognised at the commencement date of a lease. The lease liability is initially recognised at the present value of the lease payments to be made over the term of the lease, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the company's incremental borrowing rate. Lease payments comprise of fixed payments less any lease incentives receivable, variable lease payments that depend on an index or a rate, amounts expected to be paid under residual value guarantees, exercise price of a purchase option when the exercise of the option is reasonably certain to occur, and any anticipated termination penalties. The variable lease payments that do not depend on an index or a rate are expensed in the period in which they are incurred.

Lease liabilities are measured at amortised cost using the effective interest method. The carrying amounts are remeasured if there is a change in the following: future lease payments arising from a change in an index or a rate used; residual guarantee; lease term; certainty of a purchase option and termination penalties. When a lease liability is remeasured, an adjustment is made to the corresponding right-of use asset, or to profit or loss if the carrying amount of the right-of-use asset is fully written down.

(l) Intangible assets

Intangible assets acquired separately are recorded at cost less accumulated amortisation and impairment. Amortisation is charged on a straight-line basis over their estimated useful lives. The estimated useful life and amortisation method is reviewed at the end of each annual reporting period, with any changes in these accounting estimates being accounted for on a prospective basis.

Software

Significant costs associated with software are deferred and amortised on a straight-line basis over the period of their expected benefit, being their finite life of 5 years.

(m) NEVDIS Reserve

A separate NEVDIS reserve is being shown to highlight profit and loss from NEVDIS activities and historical NEVDIS reserves brought forward. This reserve is separate to the other activities of Austroads.

(n) Comparative figures

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

(o) Financial instruments

Initial recognition and measurement

Financial assets and financial liabilities are recognised when the company becomes a party to the contractual provisions of the instrument. For financial assets, this is equivalent to the date that the company commits itself to either the purchase or sale of the asset. Financial instruments are initially measured at fair value adjusted for transaction costs, except where the instrument is classified as fair value through profit or loss, in which case transaction costs are immediately recognised as expenses in profit or loss.

Classification of financial assets and financial liabilities

Financial assets recognised by the company are subsequently measured in entirety at either amortised cost or fair value, subject to their classification in accordance with the relevant criteria in AASB 9.

Financial liabilities recognised by the company are subsequently measured at amortised cost.

(p) Critical accounting estimates and judgements

The directors evaluate estimates and judgements incorporated into the financial statements 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.

Provision for expected credit loss

Except as disclosed in the financial statements, the directors have assessed each debtor and believe that the full amount of debtors is recoverable.

Estimation of useful lives of assets

The company determines the estimated useful lives and related depreciation and amortisation charges for its property, plant and equipment and finite life intangible assets. The useful lives could change significantly as a result of technical innovations or some other event. The depreciation and amortisation charge will increase where the useful lives are less than previously estimated lives, or technically obsolete or non-strategic assets that have been abandoned or sold will be written off or written down.

Impairment of non-financial assets other than goodwill and other indefinite life intangible assets

The company assesses impairment of non-financial assets other than goodwill and other indefinite life intangible assets at each reporting date by evaluating conditions specific to the company and to the particular asset that may lead to impairment. If an impairment trigger exists, the recoverable amount of the asset is determined. This involves fair value less costs of disposal or value-in-use calculations, which incorporate a number of key estimates and assumptions.

Note 2 — Revenue

	2020 $	2019 $
Revenues from contracts with customers		
Fees and Charges		
NEVDIS		
PPSR Enhancements Recovery	2,500,000	2,500,000
Safety Recalls	472,596	653,586
Data Extracts	229,590	236,085
Document Verification Services	5,498,910	4,785,842
VSA income	20,300	26,250
WMI income	19,600	22,400
Plate to VIN Services	1,911,689	1,575,050
NHVR - Data fee Income	996,696	953,000
RAV Project	-	10,000
	11,649,381	10,762,213
Other revenue		
Contributions		
Membership Contributions	2,494,652	2,494,653
Work Program Contributions	11,722,000	11,720,500
	14,216,652	14,215,153
Special Programs and Projects		
Australian Transport and Assessment Planning (ATAP)	346,000	312,000
	346,000	312,000
Publications		
Gross Sales Revenue	5,545	6,779
Royalties	10,365	12,098
	15,910	18,877
Interest Received		
Short Term Investments	506,378	669,822
Rental Bond Deposit	5,945	9,584
	512,323	679,406
Other Income		
Other income	55,191	37,051
	55,191	37,051
Total revenue	26,795,457	26,024,700

Note 3 — Expenses

		2020 $	2019 $
(a)	**Corporate**		
	Salaries and Related Charges	3,150,530	2,644,789
	Program Management	2,077,936	2,229,573
	Administration Expenses	107,284	60,264
	Other Expenses	509,490	578,650
		5,845,240	**5,513,276**
(b)	**Work Program**		
	Corporate Projects – Board Priorities	158,971	423,529
	Safety	1,493,262	2,102,289
	Assets	5,420,384	4,223,781
	Network	2,957,106	2,956,456
	Future Vehicles and Technology	466,887	764,839
		10,496,610	10,470,894
(c)	**Specific Projects**		
	International Participation	73,156	110,164
	NGTSM/ATAP Jurisdictions/ Commonwealth funding carried over from 13/14FY	156,799	77,902
	Redevelop/Ongoing Austroads Databases and Publications Website	-	14,285
	Australian Transport and Assessment Planning (ATAP)	-	145,807
	CPEE Support	21,000	19,500
	Support to ALGA Reps	12,048	12,384
	Test Methods and Pavement Technology Worktips	25,000	20,000
	Austroads Standards Development Related Activity	21,536	5,165
	TCA Acquisition	-	189,729
	Value of Travel Time Willingness to Pay	268,727	235,368
	Cycling Participation Survey	-	154,720
		578,266	**985,024**
(d)	**Publications**		
	Cost of Sales	12,763	20,501
	Production and Distribution Management	-	436
		12,763	**20,937**
(e)	**NEVDIS expenses**		
	Fujitsu Subscription and Operating Costs	2,342,491	2,632,834
	Rent	-	131,052
	Other	2,865,477	1,776,403
		5,207,968	**4,540,289**
Total Expenditure		**22,140,847**	**21,530,421**

Note 4 — Cash and Cash Equivalents

	2020 $	2019 $
Cash at bank and on hand	4,388,876	3,101,586
Short-term deposits and deposits at call	4,000,000	1,500,000
	8,388,876	**4,601,586**

Cash at the end of the financial year is reconciled to the statement of cash flow as follows:

Cash and cash equivalents	**8,388,876**	**4,601,586**

Note 5 — Trade and Other Receivables

	2020 $	2019 $
Trade debtors	370,298	366,397
Sundry and other debtors (NEVDIS)	2,047,903	2,047,743
Accrued Income	97,008	92,162
	2,515,209	**2,506,302**

Note 6 — Other Assets

	2020 $	2019 $
CURRENT		
Prepayments	101,942	103,841
	101,942	**103,841**
NON-CURRENT		
Rental Deposit Bond	126,635	123,526
	126,635	**123,526**

Note 7 — Plant and Equipment

	2020 $	2019 $
NON-CURRENT		
Furniture and Office Equipment		
At Cost	660,755	604,127
Accumulated depreciation	(573,970)	(525,336)
	86,785	78,791
Total Plant and Equipment	**86,785**	**78,791**

Note 8 — Intangible Assets

	2020 $	2019 $
NON-CURRENT		
Software		
At Cost	7,935,738	7,696,249
Accumulated Amortisation	(2,435,502)	(871,297)
	5,500,236	6,824,952
Work in Progress – Software	331,069	146,515
	331,069	146,515
Total Intangible Assets	**5,831,305**	**6,971,467**

Note 9 — Trade and Other Payables

	2020 $	2019 $
Trade and Other Payables	1,908,731	2,063,075
Other Payables	34,391	53,942
Accrued Expenses	1,017,228	759,389
	2,960,350	**2,876,406**

Note 10 — Leases

In the previous year, the company only recognised lease assets and lease liabilities in relation to leases that were classified as 'finance leases' under AASB 117 Leases.

The lease for Austroads National Office expired on 30 June 2018 and a variation lease agreement was signed for a further term of 3 years. The current lease for Awustroads NEVDIS will expire on 30 June 2020. A variation lease agreement was signed to align the termination date with Austroads National Office. Both leases for level 9 287 Elizabeth Street will now expire 30 June 2021.

(a) Amounts recognised in the Statement of financial position:

Right of Use Assets		
Opening balance as at 1 July 2019	608,034	-
Depreciation charge for the year	(304,017)	-
Carrying amount at end of year	**304,017**	**-**
Lease Liabilities	317,425	-
Current	**317,425**	**-**

	2020 $	2019 $
(b) Amounts recognised in Statement of profit or loss and other comprehensive income		
Lease under AASB 16 – interest on lease liabilities	21,210	-
Depreciation expenses on right-of-use assets	304,017	-
Leases under AASB 117 – minimum lease payments	-	291,827

(c) Amounts recognised of cash flows

The total cash outflow for capitalised leases was $311,819.

(d) Extension options

The lease does not have an option to extend and the company does not have an option to purchase the leased premises at the expiry of the rental period.

Note 11 — Provision for Employee Benefits

CURRENT		
Provisions for Annual Leave	296,715	199,861
	296,715	**199,861**
NON-CURRENT		
Provisions for Long Service Leave	169,671	285,207
	169,671	**285,207**

Note 12 — Members' Guarantee

The Memorandum of Association of the Company provides that the liability of members is limited and that every member of the Company undertakes to contribute to the assets of the Company, in the event of it being wound up while he is a member, or within one year after he ceases to be a member and of the costs, charges and expenses of winding up and of the adjustment of rights of the members among themselves, such amount as may be required, not exceeding ten dollars ($10) per member.

Note 13 — Cash Flow Information

Reconciliation of profit from ordinary activities to net cash generated from operating activities.

Surplus for the year	2,736,706	3,619,112
Adjustment for non-cash-flow items:		
- Depreciation and amortisation	1,916,856	875,167
Change in operating assets and liabilities:		
- (Increase) in trade and other receivables	(8,907)	(131,748)
- (increase)/decrease in other assets	(1,210)	25,074
- Increase/(decrease) in trade and other payables	83,944	(511,240)
- (Decrease)/increase in provision for employee benefits	(18,682)	62,679
Net Cash Generated from Operating Activities	**4,708,707**	**3,939,044**

Note 14 — Renumeration of Directors

No remuneration was paid or payable to directors in respect to or during the financial year.

	2020 $	2019 $

Note 15 — Renumeration of Auditors

During the year, the auditor of the company earned the following remuneration:

Audit of the financial statements	28,500	29,000
Other services	2,000	9,000
	30,500	38,000

Note 16 — Lease Commitments

Operating Lease Commitments – being for the rent of office:

Payable – minimum lease payments		
- Not later than 12 months	-	301,044
- Between 12 months and 5 years	-	314,774
	-	615,819

Note 17 — Capital Commitments

There are no capital expenditure commitments contracted for as at 30 June 2020.

Note 18 — Contingent Liabilities or Assets

At 30 June 2020, the Company has no contingent liabilities or assets (2019: Nil).

Note 19 — Matters Subsequent to the End of the Financial Year

As at the date of signing these accounts, the global COVID-19 pandemic has resulted in restrictions being placed on the movement, working and social habits of all Australians. The Company will not be immune to the financial impact of the pandemic.

Except for the COVID-19 and subsequent government actions, there has been no matter or circumstance, which has arisen since 30 June 2020 which has significantly affected or which may significantly affect:

1. The operations, in financial years subsequent to 30 June 2020,
2. The results of those operations, or
3. State of affairs, in financial years subsequent to 30 June 2020.

Note 20 — Company Details

The registered office and principal place of business of the Company is: Level 9, 287 Elizabeth Street, SYDNEY NSW 2000

Directors' Declaration for the Year Ended 30 June 2020

The directors of Austroads Ltd. ("the Company") have determined that the Company 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 financial statements.

The directors declare that the financial reports and notes set out on pages 69 to 75, are in accordance with the *Corporations Act 2001*, and:

1. The financial statements are in accordance with the *Corporations Act 2001* and:
   (a) comply with applicable Accounting Standards; and
   (b) give a true and fair view of the Company's financial position as at 30 June 2020 and of its performance for the financial year ended on that date in accordance with the accounting policies described in Note 1 of the financial statements.
2. In the directors' opinion, 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.

Neil Scales

Neil Scales OBE, Chairperson
Dated this 12th day of October 2020

Independent Auditor's Report

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Austroads Ltd
ABN 16 245 787 323

Independent Auditor's Report
To the Members of Austroads Ltd

Report on the Audit of the Financial Report

Opinion

We have audited the special purpose financial report of Austroads Limited "the Company", which comprises the statement of financial position as at 30 June 2020, statement of profit or loss and other comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, notes comprising a summary of significant accounting policies and other explanatory information.

In our opinion, the accompanying financial report of Austroads Limited is in accordance with the *Corporations Act 2001*, including:

(a) giving a true and fair view of the Company's financial position as at 30 June 2020 and of its performance for the year then ended; and
(b) complying with Australian Accounting Standards to the extent described in Note 1, and the *Corporations Regulations 2001*.

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 Company in accordance with the auditor independence requirements of the *Corporations Act 2001* and the ethical requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants (including Independence Standards)* "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 confirm that the independence declaration required by the *Corporations Act 2001*, which has been given to the directors of the Company, would be in the same terms if given to the directors as at the time of this auditor's report.

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 for the purpose of fulfilling the directors' financial reporting responsibilities under the *Corporations Act 2001*. As a result, the financial report may not be suitable for another purpose. Our opinion is not modified in respect of this matter.

Austroads Ltd
ABN 16 245 787 323

Independent Auditor's Report
To the Members of Austroads Ltd

Other Information

The directors are responsible for the other information. The other information comprises the information included in the Company's annual report and the directors report for the year ended 30 June 2020, but does not include the financial report and the auditor's report thereon.

Our opinion on the financial report does not cover the other information and accordingly we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial report, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial report or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

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 and have determined that the basis of preparation described in Note 1 to the financial report is appropriate to meet the requirements of the *Corporations Act 2001* and is appropriate to meet the needs of the members. The directors' responsibility also includes such internal control as the directors determine is necessary to enable the preparation of a financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

In preparing the financial report, the directors are responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Company or to cease operations, or have 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.

- As part of an audit in accordance with Australian Auditing Standards, we exercise Identify and assess the risks of material misstatement of the financial report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.

Austroads Ltd
ABN 16 245 787 323

Independent Auditor's Report
To the Members of Austroads Ltd

- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial report or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial report, including the disclosures, and whether the financial report represents the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

C MILLINGTON
Partner

PITCHER PARTNERS
Sydney

12 October 2020

Abbreviations

AAPA	Australian Asphalt Pavement Association
AFAC	National Council or Fire and Emergency Services
AS	Australian Standard
ACT	Australian Capital Territory
ALGA	Australian Local Government Association
ARRB	Australian Road Research Board
ATOG	Australasian Tunnel Operators Group
ATS	Australasian Tunnelling Society
Auststab	Pavement Recycling and Stabilisation Association
BITRE	Bureau of Infrastructure, Transport and Regional Economics
CCAA	Cement Concrete & Aggregates Australia
CC NZ	Civil Contractors NZ
CPEE	Centre for Pavement Engineering Education
DSG Tas	Department of State Growth Tasmania
DIPL NT	Department of Infrastructure, Planning and Logistics Northern Territory
DITRDC	Department of Infrastructure. Transport, Regional Development and Communication
DoT Vic	Department of Transport Victoria
DoT WA	Department of Transport Western Australia
DIT SA	Department for Infrastructure and Transport South Australia
DVS	Document Verification Service
IPWEA	Institute of Public Works Engineering Australasia

AAPA	Australian Asphalt Pavement Association
ITS	Intelligent Transport Systems
JCS ACT	ACT Justice and Community Safety Directorate
MoT NZ	Ministry of Transport New Zealand
MR WA	Main Roads Western Australia
NEVDIS	National Exchange of Vehicle and Driver Information System
NHVR	National Heavy Vehicle Regulator
NMVTRC	National Motor Vehicle Theft Reduction Council
NSW	New South Wales
NTC	National Transport Commission
NZ	New Zealand
NZTA	New Zealand Transport Agency
PBS	Performance Based Standards
PPSR	Personal Property Security Register
QLD DTMR	Department of Transport and Main Roads Queensland
SA	South Australia
TCCS ACT	Transport Canberra and City Services Directorate
TfNSW	Transport for NSW
VIC	Victoria
VIN	Vehicle Identification Number
VIRS	Vehicle Information Request System
WA	Western Australia
WRA	World Road Association

nevdis™

National Exchange of Vehicle & Driver Information System

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