



mainroads
WESTERN AUSTRALIA

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Western Australia.*

Sustainability Supplement: Additional Disclosures

Main Roads Annual Report 2023

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1 About the Sustainability Supplement

This Sustainability Supplement provides additional supporting disclosures for the [Main Roads 2023 Annual Report](#). This will clarify sustainability within a Main Roads context by providing further explanatory information and data on our material issues. These issues and topics are aligned with the Global Reporting Initiative (GRI) Standards 2021. Our GRI Content Index can be found in the [Downloads Section](#) of the Annual Report.



2 Introduction and Context

2.1 Defining Sustainability

Sustainability within our context is defined as a commitment to 'creating lasting benefits through an integrated consideration of social, environmental and economic aspects in all that we do'. Another way of stating this is that we meet the needs of today's generation without compromising the needs of future generations. Our interpretation of sustainability is based on the definitions within the State Sustainability Strategy 2003. For further information refer to our [website](#).

2.2 Our Sustainability Policy

Our [Sustainability Policy](#) is underpinned by six key aspects. The key aspects were determined through previous consultation that occurred within the Transport Portfolio level between us, Public Transport Authority (PTA), Department of Transport (DoT) and various industry stakeholders. The key aspects are guided by a policy objective, and we continue to develop actions and metrics to underpin these objectives. The six key aspects are:

- Sustainable Transport
- Climate Change
- Environmental Footprint
- Behaviour
- Governance & Performance
- Funding & Financing

Sustainable Transport

Objective

Deliver a road-based transport system that improves community amenity, mobility and travel choice whilst reducing indirect environmental impacts.

Climate Change

Objective

Develop an appropriate response and adapt to our changing climate.

Environmental Footprint

Objective

Reduce our impact on the natural environment by focusing on emissions, pollution, waste, land-use and resources.

Behaviour

Objective

Develop a culture of sustainability within our organisation, our industry and our community.

Governance & Performance

Objective

Ensure high standards in governance by measuring and reporting our sustainability performance against our key sustainability aspects.






Funding & Financing

Objective

Create opportunities for innovation in funding and financing for road infrastructure development and maintenance.

2.3 Corporate Positioning

Sustainability is embedded with our strategic direction *Keeping WA Moving*. Our aspiration is 'to provide world class outcomes for the customer through a safe, reliable, and sustainable road-based transport system'. We have five strategic areas of focus:

	Provide a transport network centred on what our customers need and value
	Provide improved safety outcomes for all users of the transport network
	Improve mobility of people and the efficiency of freight
	Develop a sustainable transport network that meets social, economic and environmental needs
	Develop our people and industry to create a mentally healthy, skilled and inclusive sector

2.4 Challenges and Trends

Our organisation faces several challenges and trends that impact the way we deliver and operate a sustainable road network. The following challenges or trends are considered in our project planning, construction, and operation processes, with the aim to overcome issues associated with each challenge and recognise the opportunity to improve sustainable outcomes. For some issues we identify Strategic Initiatives which are short-term priorities.

2.4.1 Road Safety

Change is needed to policies, processes, designs, and systems management to achieve our commitment to road safety to reduce death and serious injuries on Western Australian roads by at least 50 per cent by 2030, and to eliminate serious trauma by 2050. Through our major projects and road safety programs, we directly target and upgrade roads and network locations that are considered high risk on the state network. These road safety programs include the State and the Australian Government Black Spot Program and our delivery of the Regional Road Safety Program. Our approach to road safety is aligned with the State Road Safety Strategy.

2.4.2 Community Impacts

Our works and operations impact communities living and working within close proximity to our construction sites. Acquisition of property, noise, vibration, and business-continuity are examples of issues that need to be carefully managed, require stakeholder engagement, and impact our role as 'good neighbours'. We continue to evolve our approach to undertaking works, so that negative impacts are minimised and we also leverage any opportunities for stimulating local economies.

2.4.3 The Circular Economy

The rise in importance of the circular economy in WA in recent years is changing the flow of materials through our economy and industry. The updated Waste Avoidance and Resource Recovery Strategy 2030 has a large focus on recovering and reusing construction and demolition materials to enhance the circular economy. Increasing the use of recycled input materials for road construction is also key to reducing our overall environmental burden. The direct and indirect impacts in the use of raw virgin materials for road construction include the clearing of natural vegetation to gain access to such raw materials, the use of non-renewable materials such as bitumen, the release of embodied energy associated with its extraction and transportation to site, and the release of volatile organic compounds. We have experienced a lower than expected uptake of the use of recycled materials within our industry and we are continuing to work within industry to normalise the use of these materials.

2.4.4 Public Health and Employee Well Being

Our workforce interacts with the road environment, moving traffic and heavy machinery to deliver our services. The consequence of incidents where safety is compromised can be significant. We work to ensure the safety of anyone working on our projects.

We highly value public health, the health of our employees, and contractors and are continually trying to improve these areas. We may impact public health through exposure to contaminants, hazardous materials or poor air quality, and these instances of breaches are reported publicly through the media, especially when the construction industry breaches public trust in health security of construction materials used. We ensure all materials used in road construction are not imposing undue risk of exposure to contaminants, or substances that increase health risk. These processes include our set of specifications for material use, audits, and contract conditions.

2.4.5 Net Zero Emission, Decarbonisation and Climate Change

Climate Change continues to be growing issue for our organisation. Our infrastructure investments can have a design life of up to 100 years, which falls within the time that critical climate change hazards are likely to be experienced. The impacts likely to affect the south west of WA (including the Perth metropolitan area) include decreasing winter rainfall, increased overall temperatures, increased hot spells, increased frequency and intensity of storms/extreme rainfall events, and sea level rise. The latest IPCC Sixth Assessment Report has provided evidence that the planet is already observing the impacts to climate change, which for Main Roads is impacting our operations and approach to incident response.

The release of the WA Climate Policy, together with the aspiration for WA to be Net Zero by 2050, is shaping our approach to climate change mitigation within our organisation and through our supply chain. Transport agencies are being delegated broader responsibility to improve air quality within urban areas, including the reduction of greenhouse gas emissions from the use of transport networks. With the expected introduction legislation, such as the Climate Bill in late 2023, we expect great scrutiny of our transition to Net Zero by 2050 and broader decarbonisation of our infrastructure.

2.4.6 Electric Vehicles

Released alongside the WA Climate Policy, the State Electric Vehicle Strategy supports the transition from internal combustion engine vehicles to electric or more broadly, low and zero emission vehicles. The electrification and decarbonisation of transport will be a disruption within our overall transport system, including the civil construction industry.

2.4.7 Future Transport and Technology

Main Roads' future service delivery challenges will be influenced by external drivers known as global megatrends. Global megatrends refer to changing conditions that represent a significant shift in economic, social and environmental paradigms, substantially changing how people live. Anticipating and effectively responding to trends will position Main Roads to cater for the expected additional demand for road network operations and services throughout Western Australia.

Some of the specific trends and technologies that Main Roads is monitoring include; Intelligent Transport Systems; Cybersecurity; Digitalisation; Artificial Intelligence; Changing customer preferences; Car and ride sharing services; Uptake in micro-mobility devices; Automated vehicles; Connected vehicles; Electric Vertical take-off and landing vehicles; and Working from home/hybrid working arrangements.



3 Spotlight on Sustainability

In 2022/23 we have continued to drive the implementation of sustainable initiatives on projects across the whole network, achieving significant milestones across the state. The below highlights outline our achievements on a corporate scale and how they have benefited the community, the environment, and the economy.



80,698 tonnes recycled construction materials in our projects



49,191 tonnes of crushed recycled concrete used, totalling 192,572 tonnes used to date



More than 550,500 hours worked on our contracts were by Aboriginal peoples and \$132 million was spent on Aboriginal Contracts



146 hectares of offsets undertaken not required as a condition of project approvals, plus a further 10 hectares was revegetated as part of the Wheatbelt Revegetation Bank



19 projects are currently pursuing Infrastructure Sustainability Planning, Design and As Built Ratings



Increased the population of quendas inhabiting the area around the Roe Highway Road Reserve



Won the National Infrastructure Sustainability Council Pubic Sector Industry Impact Award



\$650 million spent on upgrading 6,400kms of roads under the Regional Road Safety Program

The following are project highlights with significant social, economic and environmental impacts:



Smart Freeways Mitchell Southbound Hester Avenue to Warwick Road is using at least 10% RAP, and recycled plastic in its geotextile reinforced seal



Albany Ring Road has 75% of its employees being from the local area and 95% of construction materials sourced locally



Bunbury Outer Ring Road won the Infrastructure Sustainability Council Outstanding Achievement Planning



Armadale Road to North Lake Road Bridge Project won the Infrastructure Sustainability Council Outstanding Achievement Design



Tonkin Gap has used approximately 70,000 tonnes of crushed recycled concrete and a total of 205,473 tonnes of recycled material to date



Smart Freeways Mitchell Southbound Reid to Vincent has engaged with 9 Aboriginal Enterprises to date



Tonking Gap was verified with a Gold Infrastructure Sustainability rating of the Design phase



Bunbury Outer Ring Road has engaged with almost 300 local businesses to date.

3.1 Infrastructure Sustainability Achievements

We have continued our relationship with the Infrastructure Sustainability Council (ISC) to incentivise the implementation of triple bottom line practice across all of our major projects, in planning and construction. All our projects valued over \$100million are pursuing Planning, Design and As Built IS Ratings.

FY 2022- 2023 ISC Ratings achieved include the below:

Verified Planning IS Ratings

- Tonkin Highway Extension: IS V2.0 – Verified Bronze
- Tonkin Grade Separations Interchanges (Hale to Welshpool): IS V2.0 – Verified Bronze
- Mandurah Estuary Bridge Duplication: IS V2.0 – Verified Bronze
- EastLink WA Program, Package 1: Reid Highway Grade Separations: IS V2.0 – Verified Silver

Verified Design IS Ratings

- Tonkin Gap and Associated Works: IS V2.0/2.1 – Verified Gold

As of July 2023, we have 19 projects registered for assessment with the ISC. Our projects have implemented sustainability initiatives across various aspects including water reduction, waste reduction, energy efficiency, use of recycled materials, stakeholder and community engagement, and sustainable procurement. Pursuing opportunities within these areas allows us to go beyond our business-as-usual practices on our projects to deliver enhanced outcomes in the planning, design and construction phases of our major projects.

We use the IS Framework to guide our projects valued between \$20million-\$100million to implement sustainable practices where the scope can limit the extent of outcomes.

Main Roads currently has four projects registered for pilot IS Essentials Ratings. These are Great Eastern Highway Wooroloo Upgrade (pilot phase complete); Great Northern Highway – Apple Street Roundabout (pilot phase complete); Smart Freeways Mitchell Southbound Reid Highway to Vincent Street; and the Causeway Pedestrian and Cyclist Bridges.

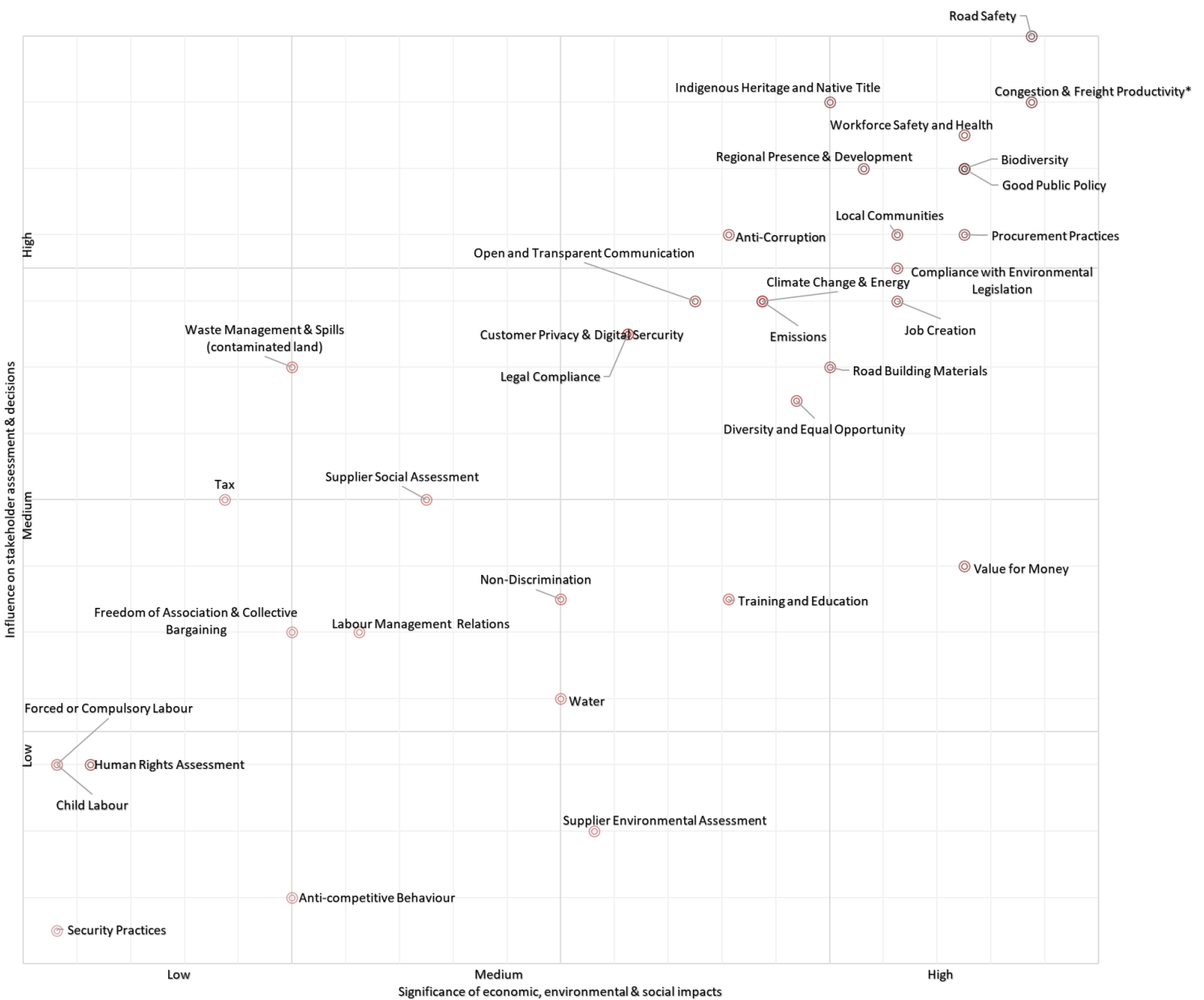
3.1.1 Recognition

At the 2022 National Infrastructure Sustainability Council Awards we were recognised with the Public Sector Industry Impact Award, Outstanding Achievement Planning (ISv2.0) – Bunbury Outer Ring Road – being the first project in Australia to achieve a planning rating and the Outstanding Achievement Design (ISv2.0 and IS2.1) – Armadale Road to North Lake Road Bridge Project. We were also recognised for our pioneering commitment in transitioning to updated and more comprehensive versions of the rating scheme. Eastlink WA, a major infrastructure project under development up until 2023 was also shortlisted for an ‘Outstanding Achievement’ award.

4 Material Sustainability Issues

Each year we undertake a corporate materiality assessment to understand what the most significant issues are, relative to our impact (both directly or in-directly through our supply chain or from our customers) and its importance to our stakeholders including the whole Western Australian community. Material issues are identified through a series of workshops and research by our employees with expertise in fields under fall under the economic, social and environmental aspects of sustainability within a Main Roads context. Following is the full results of our materiality process, refer to our [Annual Report](#) for a priority topic visualisation and our value chain.

Material Aspects for Sustainability - 2023



Following is an explanation of our various material topics, including an overview of how we manage the various issues. The topics are listed in ranked order from highest materiality score to lowest.

4.1 Road Safety (Customer Health and Safety)



There is a safety risk associated with the use of the road network. An average of 161 people died on WA roads each year over the past 5 years. A further 1,683 people are seriously injured on WA roads each year. In 2022, Western Australia had 6.3 deaths per 100,000 population, well above the national average rate of 4.6. No one should die or be seriously injured on the WA road network.

The State's approach to road safety is driven by the [National Road Safety Strategy](#) and the WA Road Safety Strategy [Driving Change: Road Safety Strategy 2020-2030](#). Both strategies aim to prevent and significantly reduce deaths and serious injuries from road crashes over the next 10 years. And both have a long-term vision and targets of zero deaths and serious injuries by 2050. As custodian of the state road network, Main Roads is committed to reducing road related death and serious injury by 50% by 2030.

The underlying principle of the Road Safety Strategies is the Safe System approach. The Safe System approach recognises that people will always make mistakes, and may have road crashes, but the system should be forgiving, and those crashes should not result in death or serious injury.

The Safe System approach comprises a holistic view of the road transport system, including safe speeds, safe roads and roadsides, safe vehicles, safe road users and safe post-crash care.

Within the Safe System, Main Roads is responsible for roads and roadsides along the state road network and speed policy and management. Road infrastructure and speed management is well aligned with Safe System objectives if it considers and performs for all road users; is forgiving of road user errors; has fail-safe redundancies; and focuses on fatality and serious injury minimisation.

Road Safety Management (ROSMA) is a framework that enables Safe System principles to be applied to all projects and activities that affect the WA road network. ROSMA is built in line with ISO 39001 for Road Traffic Safety and drives best practice in the application of Safe System principles to projects and activities. Our commitment to road safety is defined in Main Roads Road Safety Policy, Commitment and Action Plan and is evidenced through our process and programs including [Road Safety Auditing](#), [Crash Investigation](#), [ROSMA](#), and [Road Safety Improvement Programs](#).

Furthermore, the way our communities currently use and access the road network has adverse impacts on human health. It is recognised that globally, every year more people die from vehicle emissions than from road accidents. In Australia, vehicle emissions may cause up to [11,000 premature deaths per year](#), ten times the amount the vehicle accidents cause. Improving transport mode choice has implications for improved health and more active lifestyles, as [currently 75 percent of Australian adults](#) are getting less than the recommended amount of physical activity. Providing facilities for active transport can be one way of addressing the issue.

4.2 Congestion and Freight Productivity (indirect Economic Performance)



With Perth's population expected to reach 3.5 million people by 2050, congestion on our roads is an ever-present threat to the liveability of our urban areas. Reducing negative impacts to our community and economy from congestion of the road network, and providing better access for our freight customers to improve productivity is one of our core objectives to deliver. Road congestion and public transport crowding are among the most common sources of frustrations for Australians living in our fast-growing cities. Congestion results in people (and freight) spending more travelling which reduces Australia's economic productivity but also reduces our times with family, for leisure and compounds transport disadvantage. Australia is experiencing growing congestion costs and public transport crowding, largely driven by a growing population. Almost 60% of Australians now live in our four largest cities and these cities are also growing quickly, with 72% of national population growth occurring in these cities alone over the past ten years. In 2016 the total annual cost nationally of road congestion was \$19 billion and public transport crowding was \$175 million. In Perth, it is estimated that cost of road congestion was \$1.5 billion and public transport crowding was \$17 million.

We prioritise projects that will bust congestion, manage traffic infrastructure operation (such as traffic signal timing) that facilitate the safe and efficient movement of traffic, and manage all planned and unplanned events on the road network to optimise traffic flow and minimise disruptions.

Indirect economic impacts (investment and non-investment) are considered in the selection phase of our major projects. We use a Needs Identification Framework which includes consideration of safety, travel experience, accessibility, amenity and reliability to highlight deficiencies on the network. This method ensures we aren't just looking at asset deficiencies – but focuses on the values of the outcome that the asset delivers. This framework also ensures our rural and remote communities are considered in this selection phase and identifies the needs of these communities. We also consider access to community infrastructure (schools, hospitals, stadiums, etc) through collaboration with the relevant government agency (Health department, Education Department, Sport and Recreation).

Indirect economic benefits are now being measured through Wider Economic Benefits. These are an attempt to monetise the benefits a project delivers to the wider economy through enabling infrastructure. For example, building a road from a remote location to a National Highway or to a remote Port helps to increase profitability to uneconomic mining developments. This creates job opportunities for residents – including Aboriginal people – in remote communities.

At Main Roads, we have adopted the Treasury Prioritisation Methodology to prioritise potential projects from an investment and funding decision. Business case guidelines detail the minimum requirements from investments from both a State and Commonwealth perspective. We include indirect economic benefits that are outside the scope of the usual benefit cost assessment by including wider economic benefits in submissions.

We have adopted a post project evaluation framework to measure project success – a Benefit Realisation Framework. This ensures we are achieving the intended Key Performance Indicators

(KPIs) and outcomes from project investment. This Benefit Realisation Framework is endorsed by Australian Transport Assessment Planning (ATAP) and is a key feature of ISC’s V2.0 Rating Tool.

4.2.1 Congestion related projects

The Australian Government committed \$2.1 billion to transport infrastructure in the 2022-2023 Federal Budget, while \$9 billion was committed to road projects and upgrades in the 2022-2023 WA State Government Budget. This is in addition to the previous \$6.5 billion worth of funding for major road projects delivered since 2017. A number of projects are underway that specifically target congestion. A comprehensive report on congestion related projects is available in our [annual report](#) but a number of highlighted examples are summarised below.

Perth’s second Smart Freeway, Mitchell Freeway Southbound: Hester Avenue to Vincent Street Smart Freeway project commenced construction in 2021. This is a 36km stretch of road where 16 freeway on-ramps will be modified to include ramp signals to improve traffic flow, alleviate traffic congestion, improve journey time reliability, and improved road safety. The project is also expected to support sustainable economic development in the northern corridor for businesses and residents. This project is following on from the successful opening of Perth’s first Smart Freeway on the Kwinana Freeway in August 2020.

The Tonkin Highway corridor has been a key focus of our major projects and will continue to be in the next financial year. The corridor is being upgraded from Muchea to Mundijong through projects currently in operation, construction and development to deliver a high standard, north-south transport link in the east of the Perth Metropolitan area. The NorthLink project extended Tonkin Highway from Bayswater through to Muchea, and the Tonkin Gap project is currently under construction with the aim to remove the congestion that currently forms at the bottleneck where Tonkin Highway is reduced from three lanes down to two in Bayswater and Redcliffe. The project runs from Collier Road to Dunreath Drive, and is set to reduce travel times, improve safety, and increase access for road users, pedestrians, and cyclists. It is currently on schedule for completion in 2023.

We also have two major projects currently in project development (planning) for Tonkin Highway. These include the Tonkin Highway Grade Separated Interchanges where Tonkin Highway intersects with Hale Road, Welshpool Road and Kelvin Road. Construction on the Hale Road and Welshpool Road grade separations is due to commence in 2023, with the Kelvin Road grade separation scheduled for 2024. The Tonkin Highway Extension from Thomas Road to South Western Highway is also in project development, with detailed design due to wrap up and construction due to commence in 2023.

4.3 Workforce Safety & Health



A predominant amount of our workforce is directly engaged in road construction activities. Our contract workforce work environment interfaces with the road environment, moving traffic and heavy machinery. The construction industry itself is characterised by activities that are considered high risk from a safety perspective. The Key Work Health and Safety Statistics 2022 report by Safe Work Australia outlined that in WA, 2.2 worker fatalities occurred per

100,000 workers, which is higher than the national average of 1.4. The construction industry had 2.2 fatalities per 100,000 workers¹.

Throughout our business, on both our projects and maintenance works, we implement the Main Roads Safety Health and Wellbeing Management System which is Federal Safety and ISO 45001 Safety Management System accredited, also compliant with the Work Health and Safety Act 2020. Main Roads requires our contractors to provide safety management plans in line with Main Roads Health and Safety Specification 203 and our WHS minimum control standards, which includes the reporting of all incidents and reporting to our external bodies such as WorkSafe or EnergySafe if required. All serious incidents are required to be investigated within 28 days using the ICam methodology ensuring there are correct action outcomes.

All of our projects provide a Monthly Safety Indicator report that includes information that is collated to form our corporate dashboard:

- Number of Lost Time Injuries
- Number of serious incidents
- Number of incidents
- Serious incidents that were reported in 24 hours
- Number of Hazards identified

Main Roads WA maintains road safety statistics related to people that are under the direct and indirect control of Main Roads, through the Workers' Compensation and Injury Management Regulations 1982. Any statistics and details for fatal and serious injuries will be picked up through the Police reporting mechanism and be processed by our Road Safety Branch.

Our strategy for reducing fatal and serious injury crashes on the state road network is focused on the areas that Main Roads can directly influence, which are:

- Ensuring that projects implemented on the state road network are assessed, selected, developed and delivered with the aim of reducing death and serious injury
- Developing and delivering effective road safety treatment programs
- Operate and implement policies that manage the risk of being killed or seriously injured on our roads or while working directly or indirectly for Main Roads

Our workers participate in the development, implementation and evaluation of the occupational health and safety management system. This process is outlined in the [We have a Safety, Health and Wellbeing – Incident Management Procedure](#) including direction on roles, responsibility, accountability and authority for Safety Health and Wellbeing (SHW) practices.

4.4 Biodiversity & Compliance with Environmental Legislation



We acknowledge that our actions have the potential to cause negative environmental impacts to WA's unique environment. Our State has unique flora and fauna which may be impacted by our operations, given our road network transects sensitive and protected environmental areas. Our road network also transects sensitive and protected environmental areas. Further information on our Key Environmental Values is available on our [website](#). The table below conveys the number of threatened species with habitats located in our road reserve.

¹ Data sourced from <https://data.safeworkaustralia.gov.au/insights/key-whs-stats-2023>.

IUCN Classification	Flora	Fauna	Total
Critically Endangered	32	5	37
Endangered	29	20	49
Vulnerable	26	22	48
Near Threatened	225	38	263
Total	312	85	397
Source Data: Western Australian Department of Biodiversity, Conservation and Attractions (DBCA) Threatened and Priority Flora database (2023) and Threatened and Priority Fauna database (2023)			
Last updated: March 2023			

We manage our operations using a systematic approach in which all of our activities are screened for potential environmental impacts. Environmental impacts are the consequences of implementing an action and can include the positive or negative changes to the following environments: physical (e.g. land, water and air); biological (e.g. flora and fauna); cultural (e.g. Aboriginal and Historic (formally known as European) heritage and culture); socio-economic; and human-health values, of our environment.

We use the precautionary principle in our approach to environment and heritage, aiming to avoid and minimise impacts wherever possible. This principle is built into our internal processes and Western Australian environmental legislation. We screen all of our activities and works for potential environmental impacts, including positive or negative changes to the values of our environment. Values impacted may include: physical features (land, water and air); biological (flora and fauna); cultural and heritage related Aboriginal and European values; and socio-economic and human-health values.

We consider our most significant environmental aspects to be: clearing vegetation, which may result in loss of biodiversity, reduce and disturb fauna habitat and degrade land and water resources; the use of raw materials, which depletes natural resources but may also result in land degradation; use of energy, which results in greenhouse gas emissions; the alteration of Heritage values; and the alteration of fauna values, which may result in biodiversity loss.

Projects that have a low environmental and heritage risk are managed using our standard environmental and heritage practices. Where the environmental and heritage impacts are unavoidable, we comply with State and Commonwealth environmental and heritage legislation.

We operate on a hierarchy of avoid, minimise, reduce and offset our environmental impacts. We achieve this through changes in scope and design, and the development and implementation of an Environmental Management Plan (EMP) and an Offset Proposal (as required).

Where the environmental impacts are likely to be significant, we refer our projects to be assessed by the relevant regulators such as the Commonwealth Department of Climate Change, Energy, Environment and Water (DCCEEW), the Western Australian Environmental Protection Authority (EPA), or the Western Australian Department of Water and Environmental Regulation (DWER). The regulator will decide whether or not to assess the project. Where the regulator does not assess the project, it is implemented in accordance with the relevant Environmental and Heritage Management Plans.

Projects assessed by a regulator are subject to a comprehensive public Impact Assessment

process. We do not implement projects assessed by the regulators until they meet relevant approval conditions.

We also work closely with DBCA and other organisations to identify suitable environmental offsets and obtain approval. Offsets approved by DCCEEW can be identified in the project's approval conditions. Offsets that are approved by the EPA or DWER are advertised on the Government of Western Australia Environmental Offsets Register which is available on the [DWER website](#). Offsets approved by DCCEEW are available on DCCEEW's website.

4.4.1 Revegetation

Revegetation is standard practice on our projects to counteract the impacts of vegetation clearing and/or soil disturbance and to help retain and enhance the environmental values of roadsides. We have a proud history of undertaking revegetation, over many years, with awards for innovative revegetation along roadsides dating back to the 1980's. For statistics on Clearing, Revegetation and Offsetting refer to our Annual Report and [External Website](#).

4.4.2 Noise and Vibration

Management of road traffic noise is an important issue as traffic growth continues. Noise is produced and influenced by the road network in a number of ways including from vehicles, infrastructure and road design, construction and maintenance activities.

We have a 'Requirements for Road Traffic Noise Assessments' document publicly available that aids acoustic consultants and developers to consider potential noise impacts to future noise sensitive land uses in compliance with State Planning Policy 5.4 Road and Rail Noise. We review referrals for proposed developments in the vicinity of main roads to further assist developers to meet their requirements under this Policy.

Noise produced by construction and maintenance activities is influenced by the positioning and design of road infrastructure. Our major projects must develop a Noise and Vibration Management Plan for construction, publicly available on our website. Our minor projects address noise in the Construction Environmental Management Plan. Each plan outlines how construction noise will be managed throughout the duration of the project, including outlining existing sensitive receptors to noise and vibration, and how impacts on the local community will be mitigated. A Noise Management Plan approved by the local government authority is required for construction and maintenance works conducted outside normal working hours, in accordance with the Environmental Protection (Noise) Regulations 1997.

4.5 Good Public Policy



As a Statutory Authority we must ensure there are clear and transparent relationships between the elected government, preventing any undue influence in the administration of the public function. This also ensures efficient implementation of government policies and strategies.

The Public Sector Commission provides direction and guidance to Main Roads on what constitutes good governance in the Public Sector. A number of mechanisms are in place to inform agencies of direction and disseminate information. This includes [Commissioners Instructions](#) and Public Sector Commissioners Circulars.

The [Public Sectors Commission Code of Ethics](#) applies to all public sector bodies and employees as defined by section 3 of the Public Sector Management Act 1994 (PSM Act) and stipulates that public sector bodies and employees must comply with the code which include upholding the minimum standards of conduct and integrity: Integrity; Impartially, Respect for others; Trust and accountability and includes to implement government priorities, policies and decisions impartially. For an infrastructure delivery agency this is particularly relevant for prioritising the delivery of infrastructure projects.

4.6 Regional Presence & Development (Market Presence)



We are one of the most geographically dispersed road agencies in the world, responsible for nearly 19,000 kilometres of road spread over 2.5 million square kilometres. We operate from eight regional locations throughout WA. We have delivered more than \$650 million in works through the Regional Road Safety Program.

Our rural operations can have significant impacts on regional towns, communities, and their economies. Our regional presence grants us the opportunity to positively impact Aboriginal communities as a higher proportion of our regional population is Aboriginal compared to the metropolitan area. Indigenous employment and engagement are becoming key elements of our project funding conditions and requirements.

The regional towns in which our operations are located have comparatively low populations and therefore smaller economies and availability of industries. Our business activities can contribute to the economic activity of our regions, but the impacts are more significant in our regional locations. An independent review conducted in 2021 determined that an in-house delivery model (specifically on road maintenance and some minor works) could save \$25 million a year and encourage regional economic growth of \$335 million over the next 10 years. For its implementation, 660 new and transitioned Main Roads jobs will be filled across Western Australia by January 2026, building Main Roads skills, knowledge and capability in road maintenance. Road maintenance is currently delivered by five network contractors across WA.

Coinciding with the transition to an in-house delivery model, new minimum pay and conditions for personnel are being implemented for this workforce. The remuneration policy being implemented is above award rates and is potentially on average higher for this segment of our industry. This will result in an increased ability to attract and retain more experienced workers which will improve worker and road user safety, remove pressure on companies within our industry to reduce wages to win work and ensure accountability, to tasks performed, and greater consistency in the quality of infrastructure across the State Road network.

Fly in, fly out operations across all industries continues to be a key trend impacting regional towns and makes our continued commitment to regionally based services even more important. Several of our major infrastructure projects have fly-in, fly-out work forces. Having these types of work forces may diminish the impact of various policies driving local procurement and increasing local workforce.

4.7 Aboriginal Heritage and Native Title



We acknowledge the traditional custodians of WA's lands and aim to protect Aboriginal cultural values where possible. We recognise that there is an unacceptable level of disadvantage in living standards, life expectancy, education, health and employment experienced by Aboriginal peoples. We are committed to making a change in our industry through progressing reconciliation. We are increasingly being asked to take the lead in our regional areas and contribute to increasing the level of aboriginal employment as a result of our contracts. We have developed an Aboriginal heritage process that ensures compliance with Western Australia's Aboriginal Heritage Act 1972. We work closely with other state government agencies including the Department of Planning, Lands and Heritage (DPLH) and the Department of Premier and Cabinet, as well as Aboriginal people, to ensure our Aboriginal heritage processes are robust and based on best practice.

We aim to avoid, minimise, and reduce our negative impacts to Aboriginal heritage sites wherever practicable. All our activities are screened for potential impacts in compliance with the DPLH Due Diligence Guidelines using our internal Aboriginal Heritage Risk Assessment process. Where this process identifies a potential risk of impact to an Aboriginal heritage site, further investigations are undertaken.

In 2021, we released our [Innovate Reconciliation Action Plan \(RAP\) for 2021-2023](#). This plan provides a framework for our organisation to address the five reconciliation dimensions: Race Relations, Unity, Equality and Equity, Institutional Integrity, and Historical Acceptance. The 2021-2023 RAP builds on our previous RAPs to guide how we can promote reconciliation throughout our business activities in this next period. Key methods of how we will embed reconciliation into our business will be through implementing longer term strategies, working towards defined measurable targets and goals, aligning our reconciliation outcomes to our corporate planning and strategy process, and embedding reconciliation initiatives into our Diversity Framework.

We value the input and contribution of Traditional Owners and seek their advice and opinions regarding potential impacts via site surveys and other consultation processes. In our endeavour to protect Aboriginal cultural values we also liaise with other stakeholders including Prescribed Body Corporates, Native Title Representative Bodies and Aboriginal Corporations and we directly engage with relevant community groups and Traditional Owner informants.

Where it is not possible to avoid impacts to an Aboriginal heritage site, we consult Traditional Owners. Works will not progress without consent from either the Registrar of Aboriginal Sites or Minister for Aboriginal Affairs.

We are also active in the negotiation of Indigenous Land Use Agreements under the Native Title Act 1993.

Read more about our commitment to [Aboriginal Heritage and Native Title](#).

4.8 Procurement Practices



We rely on our supply chain to deliver tasks critical to our overall success. Last year, we engaged with over 4,900 suppliers and made in the order of \$3.8 billion in payments, including 131.9 million spent with Aboriginal business. Our indirect supply chain is again more extensive with our construction projects engaging with multiple sub-contractors and suppliers. We are

aware that our terms of payment can impact the cash flow and solvency of various businesses and seek to minimise those impacts. We also leverage our relationship with our suppliers to deliver priority government policy which includes training, Aboriginal engagement and supporting local business.

The State Supply Commission Policy of sustainable procurement requires us to demonstrate that we have considered sustainability in our procurement of goods and services. We have gone beyond the requirements of this Policy to reflect this in our processes for procuring goods and services and works. We apply the Western Australian Government's Buy Local Policy on our projects, allowing us to consider and give preference to local providers in our purchases as the benefits to the local industry development and employment are recognised. Buy Local Policy clauses are included in all our tender documents and tender assessments. In addition, we promote social procurement initiatives such as: direct purchasing from Aboriginal Businesses; using WA Disability Enterprises to provide works, goods, and services; and giving recognition to our contractors who employ Aboriginal people and businesses. In 2018 we introduced contractual requirements for Contractors to employ Aboriginal People and subcontract to Aboriginal Businesses. This includes mandating minimum employment and subcontracting percentages that must be met in the delivery of major projects and works.

4.8.1 Aboriginal Engagement and Participation

We are committed to making a change in our industry and progressing reconciliation through our Reconciliation Action Plan. We are committed to increasing Aboriginal employment in our workforce, and Aboriginal business engagement in our supply chain, which reflects the proportion of Aboriginal people within the populations of our regions.

Through the Transport Portfolio Aboriginal Engagement (TPAE) team, a central support team that provides Aboriginal economic participation, cultural recognition, and workplace cultural safety for agencies within the transport portfolio, Aboriginal communities and businesses have been engaged, from the early stages of works to understand their needs, capabilities, and cultures and to create long-term mutually beneficial relationships. Across the Transport Portfolio, there is an ongoing and strong focus on local employment and Aboriginal engagement, with a five-year target to award \$700 million in contracts to Aboriginal businesses and facilitate Aboriginal workers to complete 3.5 million work hours through capital works, services and maintenance programs.

4.8.2 Industry Sustainability

We apply a number of policies to assist us develop a culture for sustainability through our supply chain and improve overall outcomes for sustainability. The Government introduced the Western Australia Social Procurement Framework to enable improved social, economic and environmental benefits by leveraging government's procurement activity to improve community outcomes.

The State Supply Commission Policy on sustainable procurement requires us to demonstrate that we have considered sustainability in our procurement of goods and services. However, we have gone beyond the requirements of this policy to reflect this not only in our processes for procuring goods and services but also in procuring works. In addition, we apply the Buy Local Policy where we consider and give preference to local providers in our purchases as the benefits to industry development and employment are recognised. Buy Local Policy clauses are also included in all our tender documents and tender assessments.

We support the recent changes to the State Supply Commission's Open and Effective Competition

Policy which allows for exemptions to the minimum competitive tender requirements where there are opportunities to purchase from Australian Disability Enterprises and Registered Aboriginal Businesses. We have incorporated these policy changes into our business processes and are encouraging our people and our Contractors to support these organisations. These organisations are listed on the Aboriginal Business Directory and on the Australian Disability Enterprises website.

Industry Sustainability Plans have been incorporated into major projects to manage impacts and leverage opportunities for sustainability or social responsibility within project supply chains. Sustainability aspects within supply chain include environmental risk, local economies or businesses, workforce development, equal opportunity, and Aboriginal participation. It is intended that these plans will draw attention to the impact projects can have within their supply chain and build culture within the industry.

4.8.3 WA Industry Participation Strategy

The Western Australian Industry Participation Strategy (WAIPS) was developed to support objectives outlined in the WA Jobs Act 2017. The aim of the WAIPS was to ensure local businesses have a fair opportunity to win State Government supply contracts. All State Government agencies and departments must adhere to the WAIPS to achieve the WA Jobs Act objectives. These objectives are outlined below:

- Supporting the growth of the WA economy through supporting supply opportunities for local industry
- Providing suppliers of goods and services with knowledge of local industry capabilities
- Training local industry to adapt to new workplace innovations, materials, and technologies
- Create awareness around increasing job opportunities, training, and apprenticeships
- Promoting increased opportunities for local industry to develop import replacement capacity by giving local industry, in particular small or medium enterprises, a full, fair and reasonable opportunity to compete against foreign suppliers of goods or services (Government of Western Australia. 2017)².

4.8.4 Infrastructure Sustainability Council

We are a member of the Infrastructure Sustainability Council (ISC) which has developed the Infrastructure Sustainability (IS) Rating Scheme. The IS Rating Tool is Australia's only comprehensive rating system for evaluating sustainability across planning, design, construction, and operation of infrastructure. At Main Roads, we have an on-going commitment to ensure all our infrastructure investments achieve at least a Bronze Rating according to the IS V2.1. All projects that have a greater value than \$100 million are formally registered for assessment by ISC using the IS Rating Tool. For those projects that have a value between \$20 million and \$100 million use the IS Rating Tool to undergo a self-assessment, rather than formal verification.

Supporting schemes such as the IS Rating Tool directly link to our current Sustainability Policy. We supported the development of the Tool by participating in pilot trials of various versions of the Rating Tool, such as IS Essentials and Operations and by providing resources for the Working and Advisory Groups that ISC facilitates as part of their program of tool development and improvement, most recently the review of the ISv2.0 Planning Tool.

² WA Industry Link (Government of Western Australia). 2017. Sourced from <http://industrylink.wa.gov.au/about/western-australian-industry-participation-strategy>.

Our projects are registered for a Planning rating at the start of the project development phase. They are then registered for a Design and As Built rating at the start of project delivery. The following criteria outline the criteria that our projects must meet to pursue an IS Planning rating:

- Project construction estimate is more than \$100 million
- Is a Government election commitment
- Has an approved forward estimates cashflow.

Through having a defined approach for the adoption of the IS rating tool and clarity on the expectations for sustainability within our investments, we provide industry with clear direction when responding to our tenders.

4.9 Local Communities



We understand major infrastructure projects can create significant change and disruption, both permanent and temporary. Issues such as land acquisition, environmental impacts, construction traffic and workforce nuisance and local business continuity affect our reputation and performance as a 'good neighbour'. We engage with local businesses during the planning, development, and construction phase of our projects to ensure we remain 'good neighbours'. Plans are developed to ensure

these businesses can remain operational, by minimising impacts (including maintaining their access). We also aim to mitigate impacts the contract workforce may have, including extra traffic from vehicles, accidental damage to property, litter, and general public disturbance.

Furthermore, the type, form and design of the infrastructure that is delivered can have significant impacts on the urban fabric and liveability of local communities or precincts and on-going socio-economic impacts. While it is not always possible to achieve universal satisfaction we work closely with our stakeholders and the community, to reach mutually beneficial outcomes wherever possible based on the established principles of openness, transparency, and proactivity.

A major impact of delivering State significant infrastructure is our need to acquire land in situations where it is already utilised for other purposes such as residential property. Land is acquired by negotiation or formal taking action under the powers contained in the Land Administration Act 1997. Land required is previously identified within the Metropolitan Region Scheme or a Planning Control Area.

The process of acquiring land can have significant community and social impacts which need to be managed. Main Roads will initiate land purchases by voluntary negotiations when funding is available. In some cases, where construction is imminent, acquisition may take place by formally taking action. Property owners are entitled to compensation and have the power to object to the Minister of Transport. Generally, land is acquired two years prior to construction.

4.9.1 Facilitating Public Transport Infrastructure

While we ultimately function as a road agency, we recognise the way we design, operate and maintain the road network has an impact on the quality on the public transport service that utilises our assets. Further to this, as an infrastructure delivery agencies we often facilitate the delivery of infrastructure on the behalf of other utilities, such as public transport projects.

In light of the Premier fast tracking \$2.3billion worth of projects in 2020, the Office of Major Transport Infrastructure Delivery (OMTID) was created to deliver all transport projects valued over

\$100million. This includes the Public Transport Authority and their teams working on METRONET projects including the Thornlie-Cockburn Link, Yanchep Rail Extension, Morley Ellenbrook Line, Bayswater Station and the Byford Extension. A number of these METRONET works fall under the construction of Main Roads projects. Such projects that are allowing for METRONET works include the Thomas Road Bridge Over Rail, Tonkin Gap and Associated Works, and the Mitchell Freeway Extension.

In addition to this, we have adopted a partnership approach with PTA to ensure the smooth delivery of infrastructure (e.g. dedicated bus lanes) on local and state roads. This has seen a significant expansion of the bus lane network. In most instances, the dedicated lanes are also shared with other road users such as cyclists and taxi's, further adding to the benefit of reduced single passenger vehicle trips. This partnership has seen the delivery of a number of new bus lanes across the network, which has improved Perth's public transport system and encouraged more motorists to make the mode switch from vehicular travel to more sustainable types of transport.

4.9.2 Cycling and Pedestrians

We aim to achieve a safe, accessible, and efficient road network that includes an integrated transport system for all road users. This includes pedestrians, people with disabilities, cyclists, and the growing personal electronic transportation vehicle field (e.g., e-bikes, e-scooters, and e-skateboards). Some of the specific initiatives we have previously undertaken relating to sustainability that were targeted at improving pedestrian and cycling network access include:

- Developing a number of off-road facilities for cyclists and pedestrians to provide safe travel for cyclists and pedestrians.
- Examples of current projects with a principal shared path scopes include Causeway Pedestrian and Cyclist Bridges and Tonkin Gap Project and Associated Works
- Causeway Pedestrian and Cyclist Bridges includes providing a 6-metre wide shared path connecting the Victoria Park foreshore with Heirisson Island and Perth's CBD at Point Fraser
- The Tonkin Gap Project is under construction and includes new fully grade-separated Principal Shared Path (PSP) on the western side of Tonkin Highway from north of Guildford Road interchange to approximately Stanton Road with local connections.
- In May 2023 construction was completed on Mitchell Freeway Pedestrian and Cyclist Path – Civic Place to Reid Highway
- Conducting a trial of reduced speed limits.
- 30 km/h bike boulevards; and
- 40 km/h residential areas

Visit our [Paths and Cycling webpage](#) for more information. Our Disability Access and Inclusion Plan also includes vital information about the installation of PSPs, and can be accessed on our [website](#).

4.9.3 Urban Design

The transport system is an integral part of the everyday lives of all Western Australians. In a State that is as large and diverse as ours, it is a critical component that makes our communities and economies work. Beyond connecting people and places, effectively designed road infrastructure and road reserves make a significant contribution to the urban form and function, liveability,

amenity and heritage of our cities, towns and settlements. The travel experience enjoyed by road users and visitors depends in part on the:

- creation of community amenity through urban design features and condition of road reserves;
- the ease of mobility across all modes of transport; and
- the ability to choose how to access transport.

Urban design applied to roads involves thinking beyond the provision of solely functional infrastructure, to consider the surrounding context and to include design objectives for people and places of the road management process.

All state road authorities include urban design considerations in the planning and design of road infrastructure. Road design solutions that are sensitive to the surrounding context (natural and built, social and visual) contribute to building better cities and communities, enhance local environment and add community value.

Main Roads places great importance on the urban and landscape design aspects of infrastructure works. For major works we will request the development of a Urban and Landscape Design Framework to inform the infrastructure project and urban design outcomes. The Design Principles of [State Planning Policy 7.0 Design of the Built Environment](#) are a key consideration for our approach to urban design. We refer our infrastructure projects that impact precincts of significance, or are of significance from an urban design perspective, to an independent review under Design WA. We have an established multi agency urban design working group which aims to improve urban design practice and outcomes on our infrastructure.

There is an interface between urban design and landscaping and revegetation practice for our projects. All our major projects must develop and implement a Revegetation and Landscaping plan adhering to specifications. Read more about these specifications in [our online Technical Library](#).

4.9.3.1 Traffic Signals, Signs & Pavement Markings

Our 600 series specifications for signage manages the placement of signs along the road network, along with a sign index that outlines the different categories of road signs, where they are to be used and when they should be removed/replaced. Specification 712 for traffic signals guides the supply and installation of all components associated with traffic signals.

Reducing sign and traffic signal clutter and reducing pavement marking contributes to using less resources for both State and Local roads. We continuously review existing standards and practices to reduce the amount of unnecessary signs and pavement marking across the network where it is safe to do so.

4.10 Job Creation



We directly employ 1,454 people, who are spread throughout our metropolitan and regional offices. Of this figure, 33 per cent are female 66 per cent are male. Aboriginal employees make up nearly 4 per cent of our workforce. 17 per cent of our direct workforce self-identify as being from a culturally diverse background. This figures above don't account for our project works and supply chain which provide employment for a significant

number of Western Australians. Our infrastructure investments are spread throughout the state and into our regions, which support employment in a number of communities throughout Western Australia. We provide an estimated additional 23,000 direct and indirect jobs through our construction expenditure.

We have also made a commitment for a sustainable future workforce and have revitalised our employer brand and increased awareness of our development employee pathways. We welcomed over 127 new employees in the 2023 Development Employee Program in the roles of Engineering Cadets, Engineering Associate Cadets, Graduate Engineers, Engineering Associates, Regional Engineering Associate Trainees, Trainees and Environmental Graduates. In part, this is as a result of the transitioning of maintenance to be in-house. Driven by a vision of increased capability, capacity and economic sustainability in our regions, a total of 660 new or transitioned jobs will be filled across Main Roads by January 2026.

4.11 Anti-Corruption



The report completed by the Parliament of Western Australia in May 2020, '[Red flags...red faces](#)' highlighted the corruption risks present in public procurement in WA. This report recognises that corruption puts at risk the delivery of key government services such as health and housing, but it impacts morale of those working within agencies. This report followed the 2018 'Special Inquiry into Government Programs and Projects' which observed that procurement practice and contract management was sub-optimal for capital works. The UN's Sustainable Development Goals recognise that corruption has a disproportionate impact on the poor and most vulnerable, increasing costs and reducing access to services.

Integrity and accountability across the public sector is critical to ensure that we continue to deliver positive outcomes for the public. As a State infrastructure agency we are entrusted with public funds to deliver capital works whilst ensuring provision of exceptional service and value. Corruption can have a detrimental effect by undermining the public's confidence and trust in our agency. We regularly assess all fraud and corruption risks and controls through Directorate fraud and corruption risk workshops and all employees and contractors are educated on anti-corruption policies and procedures. Internally, the Transport Portfolio Integrity Policy complements our Integrity Framework and reinforces our commitment to effective fraud and corruption management and the promotion of a culture of integrity.

More details on our practices for integrity can be found in our [Annual Report](#).

4.12 Road Building Materials and the Circular Economy



Natural materials are crucial in road building, so encouraging the conservation of resources and supporting the circular economy (particularly for construction and demolition waste) is of strategic importance to us as an organisation. The practice of obtaining road building materials can involve the clearing and disturbance of native vegetation. The development of the circular economy, particularly in our urban areas helps to ensure road building material is available in close proximity to our infrastructure projects and helps to avoid the various negative impacts of sourcing naturally occurring materials, and the associated clearing of native vegetation.

In 2019, the Council of Australian Governments (COAG) agreed Australia should establish a timetable to ban the export of waste plastic, paper, glass and tyres. The Australian Environment Minister at the time agreed that waste plastic, paper, glass and tyres that have not been processed into a value-added material should be subject to an export ban. This is to be phased in. The expectation to use these resources in infrastructure construction is increasing, and as an organisation we continue to undertake, support, and fund pilot trials that create sustainable pathways and uses of these materials.

3.2 million tonnes of construction and demolition waste was generated in WA in 2020-21, 84% of which is recovered. Stockpiling of unprocessed waste is understood to be influencing these figures and the importance of establishing markets within infrastructure projects is a continued focus. Developing the circular economy within the civil construction industry supports the Waste Authority's Waste Avoidance and Resource Recovery (WARR) Strategy. Main Roads implements its principles to "avoid waste generation, recover more value and resources from waste, and protect the environment by managing waste responsibly."³ We have obligations under the WARR Strategy under the Waste Authority's Roads to Reuse Program including for facilitating the use of Crushed Recycled Concrete and Crumb Rubber. Ongoing utilisation of these products supports the continued establishment of local suppliers such as the four Roads to Reuse accredited suppliers and the three crumb rubber suppliers, all recently established.

Material with Waste Strategy Commitment	Tonnes 2019/20	Tonnes 2020/21	Tonnes 2021/22	Tonnes 2022/23
Crushed Recycled Concrete	34,882	52,285	56,214	49,191
Crumb Rubber	1,500	2,753	1,905.2	3,028

Within waste derived materials there is an ever-present risk of contamination. The contamination can present risk to human health and to the engineering properties of the material itself. The waste recycling industry and the civil construction industry in Western Australia has developed processes that address contamination from output materials from when it is generated, collected, processed and reused as an input material.

We provide guidance on the recycled products available to be used for our infrastructure construction in our Recycled Materials Reference Guide and we are progressing a number of research projects to look at further materials that can be incorporated into practice, such as recycled plastics.

^{2&3} Waste Authority (Government of Western Australia)

https://www.wasteauthority.wa.gov.au/images/resources/files/Strategic_Direction_Waste_Avoidance_and_Resource_Recovery_Strategy_2030.pdf

4.13 Value for Money



We must make effective use of the government funding we receive to deliver our services to the community. The cost of our infrastructure investments and its ongoing maintenance has repercussions for all Western Australians, can impact the State budget and potentially the States credit rating. We rely on several performance indicators to recognise the value created by our activities on the economy. This year we received \$3.6 billion in funding and invested more than \$3.8 billion in managing the state road network. The road network and construction industry have many flow on effects for our economy, particularly creating jobs and strengthening the post-pandemic economy. Improvements in road network efficiency can also lead to increases in the competitiveness of industries that rely on transport.

By increasing the connectivity and extensiveness of the state network, it is important to note that there may be negative in-direct economic impacts in optimising road-based transport that are related to equity. The cost of transport in Australia in 2022 was 14.9 percent of the average household income. In Perth, the average cost of transport was 14.6 percent of the household income. The national average for fuel spend in major cities is \$93.61⁴, and in regional areas it is slightly higher at \$97.30. The average fuel spend in Perth is slightly lower than the national average, sitting at \$90.46. Refer to the Our Performance section of the [Annual Report](#) for a full overview of how we provide value for money.

4.13.1 Funding and Finance

Main Roads faces the challenge of ensuring adequate funding is provided to construct and maintain a safe and reliable road network for current and future road users. In 2022/2023, Main Roads received a budget of \$3.6 billion in funding and invested more than \$3.8 billion in managing the state road network.

We have a Funding and Finance Policy that outlines the intent, principles, and responsibilities for the expansion of funding for activities. This includes the identification, evaluation and implementation of alternative revenue, funding, and financing opportunities. The policy distinguishes between these three factors to promote an understanding of the various principles and demonstrate linkages to asset management, investment planning and project programming.

4.14 Climate Change, Energy & Greenhouse Gas Emissions



Anthropogenic Climate Change is a concern for our organisation for several reasons. Our infrastructure investments can have a design life of up to 100 years within the time horizon the critical climate change hazard will be experienced, and our infrastructure is directly exposed to the risks of existing climate hazards. We have obligations to the broader Western Australian community to maintain a level of service by minimising road closure duration when the network is impacted by disruptive weather events. The WA Climate Policy is further obliging us to act for both adapting to and mitigating the risk of climate change.

We are also working to minimise the effect of natural hazards and climate changes on existing assets, and also minimise disruptions for the road user and our communities. Work underway includes:

⁴ Figures from <https://data.aaa.asn.au/transport-affordability/>

- Climate change risk assessments are undertaken in project planning,
- Reviewing incident management procedures,
- Continuing review of current standards against impacts of climate change,
- Collaborating with stakeholders agencies to address shared climate change risks, and
- Educating specific employees and contractors on the impacts of climate change and ways to adapt the assets over time ahead of climate change.
- Developing tools for our employees to undertake first pass vulnerability assessments for roads and networks
- Undertaking a whole of network review for vulnerability to climate change

4.14.1 Net Zero Transition

The Paris Agreement has called for the world to achieve net zero by 2050 to keep global warming at no more than 1.5°C. Following the release of the Western Australian Climate Policy we have been progressing development of a Net Zero Transition Plan, focused on scope one and two emissions, which will guide actions in support of the state's aspiration to achieve net zero greenhouse emissions by 2050. The plan will focus on our operations and maintenance activities but also provide consideration of infrastructure investments and the use of the road network for mitigation activities. The Net Zero Transition Plan will replace our existing Carbon Reduction Plan and Target. Total emissions across our facilities over the past year were 22,008 tCO₂-e, which is significantly below our target of 23,442 tCO₂-e.

Our major road infrastructure investments will be required to develop a Net Zero 2050 Transition Project Plan for the built infrastructure. The Net Zero 2050 Transition Project Plan will identify actions and opportunities for energy and carbon reduction that will set the infrastructure asset on a carbon emissions trajectory toward net zero by 2050 and utilise the following principles:

- Measure and disclose,
- Reduce energy demand,
- Generate balance from renewables (or from offsetting) and,
- Continuously Improve (i.e. include embodied energy/scope 3).

In collaboration with interstate and overseas road authorities we have helped develop a common whole-of-life methodology for assessing the greenhouse footprint of road projects, the Carbon Gauge Greenhouse Gas Calculator Tool. Using the Infrastructure Sustainability Council framework on our major projects also has seen a greater reporting regime of greenhouse gas emissions implemented.

4.14.2 Renewable Energy

We support the use of renewable energy to reduce our carbon emissions and to improve resource efficiency. Renewable energy is used on road infrastructure and the road network where it is practical. This has seen different types of renewables used on bus shelters, remote road lighting, emergency telephones and school crossing warning signs. Solar PV systems have also been installed on several staff houses and at some of our offices across the state. In 2022/2023, our installed renewable energy systems produced 1,265,054 kwh.

Our major projects often consider different options and initiatives to implement renewables throughout the design, development and operational phases. For example, Smart Freeways

Kwinana Northbound used solar lighting during the construction of the now operational emergency stopping bays. NorthLink WA Southern Section trialled a solar powered variable message sign using wireless communication technology. This was a pilot trial to determine the reliability of the solar powered technology and understand operational and maintenance costs.

We are researching opportunities to utilise renewable energy at our project site offices, and mandate that a certain amount of electricity consumed comes from renewable sources.

3.14.5 Electric Vehicles

Electric Vehicles align with our broad notion of promoting more sustainable travel as they reduce carbon, tail-pipe emissions and reliance on transport fuels, are energy efficient and produce low noise. They will be a significant contributor for decarbonising transport, the road network and the civil construction industry. The State Electric Vehicle Strategy for Western Australia is closely linked to the Western Australian Climate Policy and will help facilitate the electrification of transport in WA.

Main Roads is committed to transitioning its vehicle fleet to electric aligned with the direction of the State Electric Vehicle Strategy. Following a pilot trial on one of our projects, we are now including contractual requirements on our major projects to ensure a specific percentage of their light vehicle fleet, or heavy vehicle machinery fleet where available, are plug in hybrid or electric vehicles. As an organisation, we are also committed to increasing the uptake of electric vehicles within our own vehicle fleet and supporting the state government target of 25 percent of all new light and small passenger, and small and medium SUV government fleet vehicles to be electric by 2025-26.

4.15 Air Quality & Emissions

In Australia, air pollution is assessed by measuring six main air pollutants: carbon monoxide, nitrogen dioxide, photochemical oxidants (as ozone), sulphur dioxide, lead and particles.

Urban air pollution is a known carcinogen and has a range of human impacts. Globally, air pollution contributes to more deaths than road accidents. Of all the pollutants assessed, PM2.5 - tiny particles of matter one-fortieth the width of a hair - is considered to present the greatest potential impact to human health. No level of air pollution is completely safe for humans. Particulate matter in the air can come directly from natural sources such as bushfires and dust storms. It can also come from human activities. Motor vehicles are a significant contributor to emissions, contributing 14 percent of PM2.5, and 62 percent of nitrogen oxides. Diesel vehicles are the most significant contributor to air pollution.

Individual vehicles are becoming cleaner through improved fuel and vehicle technology. However, population increase, a trend towards increasing vehicle kilometres travelled and road congestion have the potential to cancel out these emission improvements. Strategic planning processes, integrating land use and transport objectives to minimise the amount of travel required and improve access to and choice of alternative transport modes including public transport, cycling and walking is crucial in influencing the impact of growth on the liveability of Perth and its air quality.

We adhere to legislated requirements in regards to managing air quality from our activities. The State Government has a cross agency Air Quality Management Plan however we currently have no obligations under that plan. We take action to directly manage the traffic flow of vehicles, which

has consequences for the overall environmental impacts from the use of the road network that includes carbon emissions and air quality.

We have a commitment to develop a data driven approach to address congestion based around agreed performance metrics and targets. We developed a cloud-based data factory to collate and report road network performance data across major roads in metropolitan Perth.

The data system collates speed and volume information from multiple data sources across 4,500 links, which currently represent the Perth major road network. Data is recorded on each link for every 15-minute interval dating back to January 2013. This data system has been named the Network Performance Reporting System or 'NetPReS'. Using the Australian Transport Assessment and Planning Guidelines 2016 published by the Transport and Infrastructure Council, NetPReS data has been used to estimate emissions trends on state roads and significant local roads in the Perth metropolitan area. At Main Roads, we take action to directly manage the traffic flow of vehicles, which has consequences for the overall environmental impacts from the use of the road network that includes carbon emissions and air quality.

4.16 Diversity and Equal Opportunity



Main Roads is committed to increase the representation of diversity groups and foster a truly representative workforce by providing a safe, respectful, and inclusive workplace culture. [Our Diversity, Equity and Inclusion \(DEI\) Framework](#) outlines the structure that supports our DEI journey and details our commitment statement, governance structure and the principles we have adopted.

We are committed to providing employees with a working environment where everyone is treated with fairness, respect, equality and dignity and where the workplace is free from discrimination, harassment, victimisation, vilification and bullying. We are also committed to ensuring that the talents and resources of employees are utilised to the full, by promoting equal employment opportunities for all employees and potential employees and have implemented an Equal Employment Opportunity management plan.

Significant challenges are present in attracting and retaining women in the Civil Construction Industry. According to the Workplace Gender Equality Agency data explorer, in 2023, the Heavy and Civil Engineering Construction Industry nationally employed over 44,818 people of which 19.6% were female. There is a 19.5% total remuneration gender pay gap for full time employees. In comparison 33% of Main Roads employees are female and in 2013 our gender pay gap was 16.5%. We are currently working on recalculating and reporting this figure.

We ensure that our workforce is comprised of varied perspectives, viewpoints and backgrounds which is integral to our success. It is for this reason that we have developed our 'Innovate' Reconciliation Action Plan 2021-2023. We are driving Aboriginal Employment through our supply chain and the Aboriginal Employment initiatives taskforce and we are currently exploring the possibility of developing a 'stretch' reconciliation action plan.

Through our projects and maintenance activities, we work to incorporate diversity and equality targets. Our projects may set targets to include a diverse group of people, and we carry this through to supply chains to engage companies with diverse foundations where possible. Further information regarding diversity and equal opportunity within our business can be found in our [Annual Report](#) and on our [website](#).

4.17 Open and Transparent Communication



Timely, accurate and effective communication is imperative to our operation. If this is not done well it impacts on our reputation and people's confidence in our agency. When delivered well it eases the impact of potential socio-economic changes on communities from our infrastructure investment. In order to keep our operations open, accountable, fair and flexible, we collaborate with a wide range of customers and stakeholders who provide essential input to operational aspects of our business and the delivery of our infrastructure projects. Community and stakeholder engagement is adopted across our business and our projects.

The *Freedom of Information Act 1992* gives the public a general right to apply for access to documents held by government agencies. An information statement has been produced in accordance with the requirements of the Freedom of Information (FOI) Act. At Main Roads we will endeavour to produce documents and have them readily available outside of the FOI process. If for some reason the information is not available, the public have the ability to apply for access to documents through the FOI act. We keep the FOI Statement and FOI Application Form on our [website](#). This statement provides a guide on how to apply for access to documents, as well as information about documents that may be available outside of the FOI process.

4.17.1 Global Reporting Initiative Reporting

Our commitment to best practice, open and transparent reporting is conveyed through our [Annual Report](#) which is compiled in accordance with the principles of the Global Reporting Initiative (GRI). We adhere to the GRI principles of stakeholder inclusiveness, materiality, completeness and context, and have an ongoing commitment to ensure the validity of these topics to our business and stakeholders. We conduct a biannual desktop materiality review and report these to our Corporate Executive. The review draws from our corporate commitments, key business and environmental risks, corporate stakeholder engagement processes, media and ministerial topics.

4.18 Water Resources



Water resources are diverse and valuable assets, which include natural or modified features such as wetlands, waterways (rivers and creeks), floodplains, estuaries, groundwater aquifers and the marine environment. Water resources provide ecological and hydrological functions, such as flood relief and habitats for flora or fauna, and social functions, such as historical significance, aesthetic value, and recreation. The Main Roads network can also intersect with Public Drinking Water Source Areas.

Water resources have been identified as one of our significant environmental aspects. We have statutory and corporate environmental responsibilities for the impacts our activities have on water resources and we implement management initiatives to protect them. Activities such as site selection, construction, road, bridge and drainage works, planning or implementation decisions and during their operation or maintenance can all interface and impact water resources both directly or indirectly.

We encourage practices that reduce our impact on water sources including improving water efficiency and overall water use, utilising recycled water, and avoiding the use of potable water. For our buildings and accommodations, we require waterwise WELS rated plumbing fixtures and landscaping. Within the construction and operation of our projects, we prioritise the use of non-

potable water over scheme water to ease the burden of water scarcity within the communities we work in. When we are required to utilise ground, water reserves we adhere to our licensing obligations to access this water. Main Roads has an approved Ground Water Operating Strategy and continues to work with the [Department of Water and Environmental Regulation \(DWER\) regarding our licencing requirements.](#)

Information regarding water abstraction and the licences required can be obtained from [Department of Water and Environmental Regulation \(DWER\).](#)

Our reporting captured the following water use in the 2022/2023 financial year:

Water Use Type	Kilolitres (kL) used in 2022/2023	Megalitres (mL) used in 2022/2023
Buildings	38,637	38.64
Construction – Scheme/Standpipe	642,101	642.10
Construction – Groundwater/Bore	59,797	59.79
Construction – Surface Water	478, 953	478.95
Construction – Recycled/Wastewater	3,240	3.24

4.18.1 Discharges to Water and Water Run-off

In WA, the discharge of water is regulated through the Environmental Protection Act 1986 and the Rights in Water and Irrigation Act (1914). Our operations result in very little discharge of water. In the event we were required to discharge water, we would obtain the appropriate approvals prior to discharge.

Where there are direct linkages between stormwater and sensitive receivers, pollutant traps have been installed to prevent adverse impacts to the wetlands and watercourses. Currently we own and manage a total of 71 pollutant traps at the following key locations;

- Lake Gwelup from Karrinyup Road;
- Swan River from Reid Highway; and Great Northern Highway;
- Swan River from ~20 outfalls along Kwinana Freeway;
- Canning River from Leach Highway;
- Booragoon Lake from Leach Highway; and
- Quenda Wetland from South Street.

The treatments include interception of gross pollutants/rubbish, sediment, nutrients, heavy metals, and hydrocarbons.

In addition, there are several sites where a pollutant trap system is being designed to prevent potentially significant impacts, though these areas have not been confirmed as being “significantly

affected”. Locations include Bull Creek from Leach Highway (one outfall near Bull Creek Drive) and Canning River from Canning Highway (one outfall west of Canning Bridge).

The artificial sumps at Southern Lake, Western and Eastern Lakes at the Narrows Interchange, and Bunning Lake at the Hamilton Interchange collect stormwater from road runoff and are habitats for native fauna. DWER is engaged by Main Roads to monitor the water quality of these Lakes regularly to inform appropriate management.

For other road runoff, local sumps, compensating basins, infiltration basins and swales have been specially constructed to process storm-water, separating it from sensitive water receivers.

4.19 Waste Generation



We handle a variety of waste streams that we produce or clean up as a result of projects, routine maintenance of roadsides, parking areas and rest areas, incidents on the road network or land that Main Roads manages, and illegal dumping. We also have more than 80 offices and depots that generate general municipal waste.

Stockpiling or landfilling construction/demolition waste results in land degradation through clearing, erosion, dust, and potential transport of pollutants through surface water flows and leachate.

Typically construction and demolition waste is reusable or recyclable and we encourage the implementation of the waste hierarchy (avoid, reduce, reuse, & recycle) on our projects. We recognise the importance of resource efficiency during planning, design and construction phases of our projects. Risks of re-using materials include potential contamination or not meeting required engineering standards so we implement a cautious approach on our projects, to protect our workforce and our community.

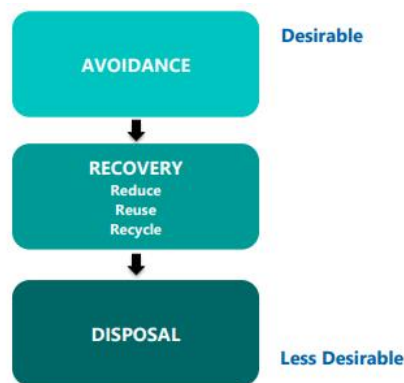


Figure 2 Waste Hierarchy

Refer to our [Annual Report](#) for more information on our waste generation practice and statistics.

4.19.1 Roadside Waste

As Western Australia's population and traffic continues to grow, and concerns about environmental pollution and sustainability become increasingly recognised, a considered approach to how Main Roads as a whole manages waste – reduction, re-use, recycling and disposal – is required.

Roadside waste is a strategic sustainability issue for us and continues to burden our regions requiring ever-increasing attention to control. For many years illegal dumping of waste items, which are

potentially recyclable such as tyres and building waste, has affected our road reserves. Illegal dumping is an offence under the Litter Act 1979, and plagues roadside rest areas and reserves across the state network. Litter and waste items in these areas can cause damage to drainage and waterway infrastructure, and eventually cause environmental degradation in wetlands and swamps. We encourage our community and industry to become involved in developing initiatives and solutions to target this issue.

We are collaborating with key stakeholders, interested parties and community groups to implement a consistent litter management approach for the state whilst taking into account individual regional requirements. A State Wide Litter Plan has been developed, targeting five key aspects across Western Australia:

- Roadside litter collection;
- Rest Area Management;
- Illegal dumping;
- Unsecured Loads; and
- Abandoned vehicles.

The primary objectives of this strategic initiative is to educate road users to take their litter with them wherever feasible or practical and reduce the occurrence of litter and illegal dumping through greater public awareness of the issue, increased community buy-in and participation in litter reduction programs and behaviours.

4.20 Customer Privacy & Digital Security



Main Roads, as with all Western Australian Government agencies, is not subject to the Privacy Act 1988 (Cwlth) and to date we do not have an equivalent statute. However, where possible, we adhere to the Australian Privacy Principles set out in Schedule 1 of the Privacy Act. Work is being conducted by the Department of Premier and Cabinet to introduce new whole-of-government privacy and responsible information sharing legislation for the Western Australian public sector.

Through our website, our communications, our engagement and our business activities we collect personal information of those individuals we interface with. The retention and destruction of records of personal information held by Western Australian Government is governed by legislation and policies including the State Records Act 2000.

Any personal information we collect may be used or disclosed for the primary purpose for which it was collected or we may also use or disclose personal information for related purposes, such as, where the individual has consented to the use or disclosure for the related purpose or it is reasonably expected the personal information would be used for that related purpose.

In some limited circumstances we may also need to use or disclose personal information for other specific purposes, including:

- where the Western Australian Government reasonably determines that the use or disclosure of the information is necessary for one or more enforcement related activities conduct by or behalf of an enforcement body

- where required by or under a law of Western Australia, a law of the Commonwealth or a court or tribunal order, for example pursuant to the Freedom of Information Act 1992 or in response to a subpoena

Personal information will be dealt with in accordance with the applicable legislation in Western Australia and consistent with any legal obligation.

4.20.1 Traffic Monitoring

We value the privacy of our customers and comply with the CCTV Usage Policy that outlines appropriate use and we do not automatically record on our CCTV cameras and we use a commercially available off-the-shelf system to collect anonymous traffic data from Bluetooth-enabled devices in passing vehicles using sensors installed at signalised intersections and selected locations on freeways and controlled access highways. This data cannot identify individual vehicles or people.

We operate in accordance with the Surveillance Devices Regulations 1999. WA Police require that a public authority exercising an exemption under the Surveillance Devices Regulations does so in accordance with a written law. Under the *Main Roads Act 1930* such a power existed with respect to regulating traffic only on highways and main roads. The lack of clarity in defining these road types within the original Main Roads Act became subject to scrutiny in the Office of the Auditor General's June 2023 report on Main Roads' Traffic Management System due to Main Roads' installation of Bluetooth receivers on higher order local government roads. Under the *Main Roads Act 2023*, passed in November 2023, that power was extended to local roads. Main Roads and WA Police agreed to align the approval of the amendment to the Surveillance Devices Regulations with the passage of the Main Roads Act. With both items being finalised in November 2023, the legal definition clarity issue with respect to using Bluetooth receivers on local government roads, as raised by the Office of the Auditor General, was resolved.

4.21 Building Knowledge and Capability for Sustainable Development



We have been building a culture that supports sustainability since we first rolled out our sustainability policy in 2006. We are continually working to build on our skills and knowledge aligned to our key aspects for sustainability. Some of the key activities that keep our people aware of sustainability challenges include:

- Training of key staff in Infrastructure Sustainability.
- Sustainability awareness program using corporate communications.
- Participation in external research and with industry bodies such the World Roads Association, Infrastructure Sustainability Council of Australia or Austroads working groups for topics such as Stakeholder Engagement, Maintenance, Workforce, Urban Design, Environment, Resilience, Road Design, Climate Change, Asset Management, Capability and Decarbonisation.
- An ongoing Innovation and Research Program that funds a variety of research, trials and demonstrations to help drive improved business practice but also assist develop our corporate knowledge for advancements in technology or issues arising
- Direct support of sustainability at industry level through our membership with the Infrastructure Sustainability Council and sponsoring the Western Infrastructure Sustainability Conference.

For details on how we embed sustainability within its procurement practices to encourage industry participation please refer to our Governance and Performance section.

4.21.1 Strategic Research

We undertake significant activity to develop and enhance our collective knowledge of economic, environmental and social topics. Additionally, we formally partner in a number of significant research groups/projects:

Austrroads: Main Roads, along with the Commonwealth Government and the New Zealand, Australian State and Territory road agencies collectively own Austrroads, which is the peak organisation of Australasian road transport and traffic agencies. Austrroads undertakes leading-edge road and transport research which underpins input to policy development and results in published guidance on the design, construction and management of the road network and its associated infrastructure. Austrroads provides a collective approach that delivers value for money, encourages shared knowledge and drives consistency for road users.

National Transport Research Organisation (NTRO formerly known as Australia Road Research Board or ARRB): NTRO provides research, consulting, products and information services to the road and transport industry. NTRO applies research outputs to develop equipment that collects road and traffic information, and software that assists with decision-making across road networks. Main Roads, along with the Commonwealth Government and the New Zealand, Australian State and Territory road agencies collectively own NTRO. NTRO and its members recognise the critical role that they play in supporting one another to improve productivity, safety, sustainability and amenity outcomes for the community

WA Road Research and Innovation Program (WARRIP): WARRIP is an agreement between ourselves and NTRO. It includes the establishment of the Western Australia Road Research and Innovation Program in pavements, asset management, structures and bituminous surfacing, investment in the technology and systems necessary to gain a better knowledge of the condition and capacity in our current and proposed assets, a close association of NTRO's Pavements, Materials and Geotechnical resources with our Materials Engineering branch, increased collaboration with similar research centres in other states, including Austrroads and the Queensland Department of Transport and Main Roads' National Asset Centre of Excellence (NACOE).

Planning and Transport Research Centre (PATREC): We are a partner to PATREC, which was established in 2002 for the purposes of conducting collaborative research and teaching in the area of integrated land use and transport policy and planning. PATREC is a collaboration between the University of Western Australia, Curtin University and Edith Cowan University and is also supported by Transport and the Western Australian Planning Commission.

Sustainable Built Environment National Research Centre (SBEnc): SBEnc is a key research broker between industry, government and research organisations for the built environment industry. Main Roads is a Core Member of the SBEnc and benefits from this arrangement as Main Roads membership complements other member road agencies in NSW RMS, QTMR and complements the work of Austrroads and Roads Australia, providing public leadership to encourage the private sector to be a part of industry development. Membership also entitles Main Roads to a nominee on the Governing Board.