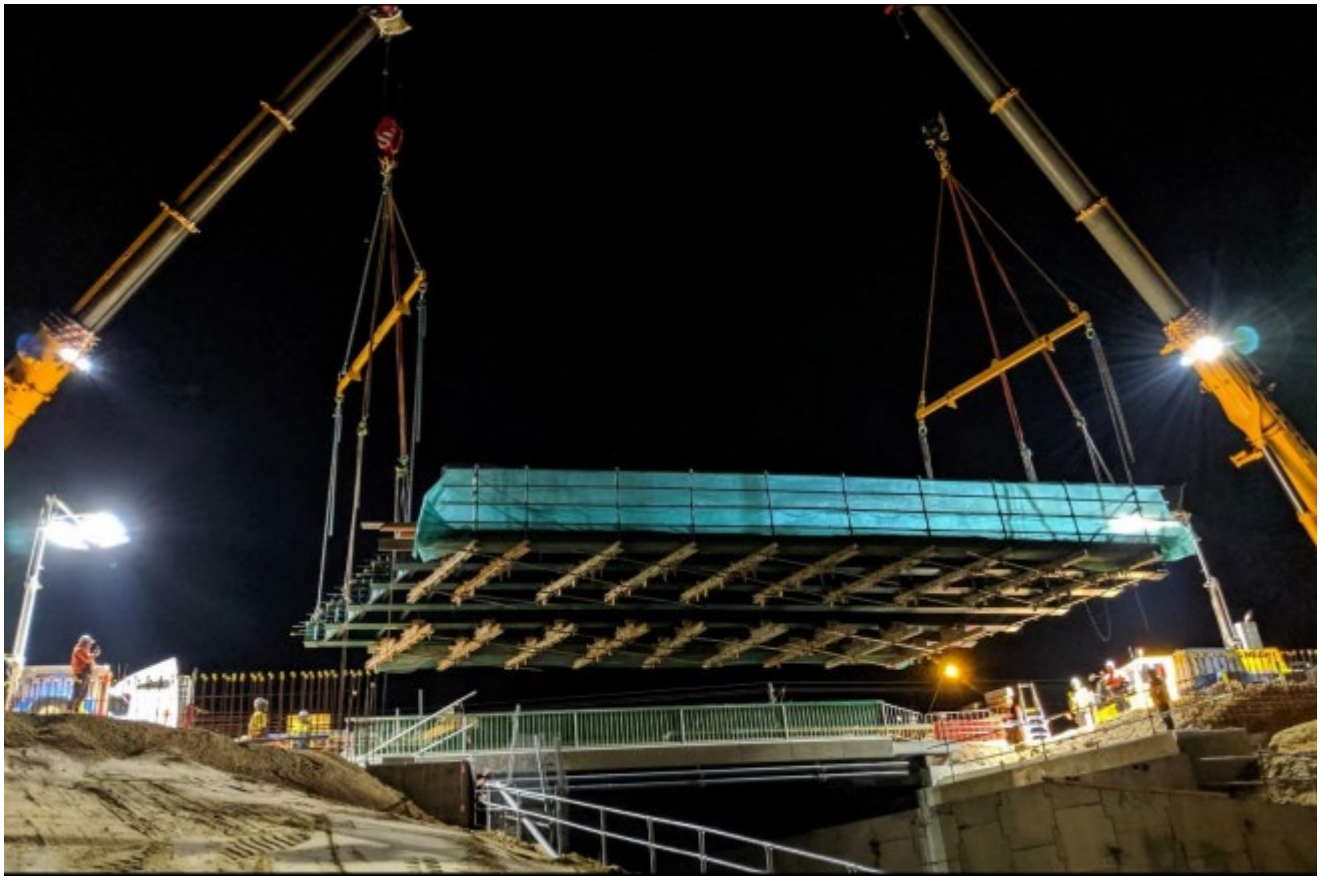
Metropolitan Road Improvement Alliance: Annual Project Sustainability Report 2019-2020

This annual report covers the period from July 2019 – June 2020. Previous annual sustainability reports were prepared for the project for 2017-2018 and 2018-2019 periods.



About this Report

This report has been prepared by the Metropolitan Road Improvement Alliance project team on behalf of Main Roads Western Australia. This report forms part of Main Roads' annual sustainability reporting which is integrated into its Annual Report. The report content is prepared in accordance with GRI principals. Main Roads processes determine which aspects are material and to be reported on by the project.

Highlights

Some of the key highlights to date include:

- Twelve Indigenous enterprises contracted.
- 99% local content procured.
- 2,377 people inducted.
- ~15,000 tonnes of recycled content used in construction.
- 99% replacement of potable water.
- 1,686 tonnes of comingled waste recycled.
- 700 native animals relocated prior to clearing.
- Five Indigenous students participated in the Career Trackers program.

Overview

The Metropolitan Road Improvement Alliance (MRIA) was formed to deliver the design and construction of three scopes of work in the Perth Metropolitan area. The contract was awarded in May 2017 and construction across the sites has reached staggered completion. The project was delivered by the Alliance formed between Main Roads Western Australia (Main Roads), CPB Contractors, Georgiou Group, WA Limestone, GHD, AECOM and BG&E. An overview of each site is provided below.

Wanneroo Road Widening, Joondalup Drive to Flynn Drive

Construction on this site began in late 2017 to provide a dual carriageway along Wanneroo Road between Joondalup Drive and Flynn Drive. The $31 million project reached completion in April 2019 as lanes were opened up to motorists. It included the duplication of a 3.2km section of the existing Wanneroo Road between Joondalup Drive and Flynn Drive which will support improved servicing of the residential and industrial areas of the north-west corridor.

Further information can be found at the following link:
https://project.mainroads.wa.gov.au/home/completed/wanneroowidening/Pages/default.aspx

Armadale Road Upgrade, Tapper Road to Anstey Road

The $145 million upgrade of Armadale Road is complete. Construction commenced in March 2018 and lanes opened to traffic in February 2020. The project involved the construction of a 6.9km, four lane dual carriageway between Tapper Road and Anstey Road with dedicated turning lanes, intersection improvements and new shared path facilities. Landscaping works are expected to be finalised in the winter of 2020 to allow the new vegetation to get established before next summer. Minor finishing works will be carried out including repairs, maintenance and establishment of landscaping for the next 3 years.

Further information can be found at the following link:
https://www.mainroads.wa.gov.au/projects-initiatives/projects/metropolitan/Armadale-Road-Upgrade/

Murdoch Drive Connection

An extension of Murdoch Drive south from Farrington Road to connect with Roe Highway and Kwinana Freeway makes up the $110 million Murdoch Drive Connection project. Construction commenced in January 2018 and reached practical completion at the start of May 2020. Finishing works and landscaping will continue into the winter months.

Further information can be found at the following link:
https://www.mainroads.wa.gov.au/projects-initiatives/projects/metropolitan/Murdoch-Drive-Connection/

Overall approach to Sustainability

The project is committed to creating lasting benefits through an integrated consideration of environmental, social and economic aspects across the board. The management approach is based on both the Main Roads' and CPB Contractor's Sustainability policies (CPB Contractors is the largest non-owner alliance partner), thereby addressing both construction and operational sustainability outcomes.

The project has applied the Infrastructure Sustainability Council of Australia's (ISCA) Infrastructure Sustainability (IS) rating tool to guide its processes and outcomes and is registered to be formally verified. An 'Excellent' interim Design rating was achieved by the team, with the As Built submission planned to be formally submitted to ISCA in mid-2020.

The Environment Manager is responsible for the sustainability outcomes of the project and this is predominantly managed by the Environment and Sustainability Coordinator. The Environment and Sustainability Coordinator oversees the general processes relating to day-to-day sustainability initiatives.

Environmental Aspects Performance

At a glance

Aspect	Year to 30 June	Total for Project
Actual clearing to date (native) (ha)	3.33	29.45
Rehabilitation/revegetation planned (ha)	42.1	42.1
Actual rehabilitation/revegetation to date (ha)	33.73	36.73
Total Water Consumption to date (kL)	139,898	505,261
Total GHG emissions (scope 1 & 2) to date (t CO_2-e) (excluding clearing)	2,599	8,631
Total energy consumption to date (GJ)	35,813	119,579
Total quantity of recycled content used in project (t)	8,242	14,953
Total imported materials used in project (t)	162,844	675,050
Total waste generated by project (t)	7,029	31,080

Figure 1 Fauna underpass in construction at MDC

Environmental context

Wanneroo Road Widening (WRW)

This site has two distinguishable vegetation areas either side of the existing road, with native Tuart woodland and other degraded native vegetation in the north and planted and degraded (mostly non-indigenous weeds) in the south. Approximately 4 ha of native vegetation was required to be cleared for construction. The Tuart woodland provides the predominant fauna habitat at the site, with the most significant species being the Carnaby's Black Cockatoo. This cockatoo is classified as 'Endangered' under the *Environment Protection and Biodiversity Conservation* Act 1999 (EPBC Act) and 'Threatened' under the *Wildlife Conservation* Act 1950 (WC Act). Other listed species which may be present within the site is the Quenda and Carpet Python.

There is little surface or ground water at this site, with the nearest mapped wetland being Lake Joondalup.

Armadale Road Upgrade (ARU)

The construction required approximately 7 ha of native vegetation to be cleared either side of the existing Armadale Road, with the larger impacts occurring at the intersection of Liddelow and Armadale Road. Some of the vegetation cleared for the works was Banksia Woodland (Threatened Ecological Community), which is potential habitat for the Carnaby's Cockatoo. The majority of works occurred on land which has previously been disturbed, thereby minimising vegetation disturbance.

Surface water flows at the site were managed through the installation of additional drainage infrastructure to minimise any significant changes to the existing water flow patterns. MRIA also consulted with the Department of Biodiversity, Conservation and Attractions (DBCA) and the Bush Forever section of the Department of Planning, Lands and Heritage (DPLH) to determine the best outcomes for drainage flows in relation to local Bush Forever, DBCA managed reserves and other significant areas.

Murdoch Drive Connection (MDC)

The site is located directly east of the Beeliar Regional Park predominately within the existing road reserve. The works require minimal works within mapped wetlands (less than 0.1 ha), in locations where land has previously been disturbed and native vegetation has been historically cleared for other projects.

The vegetation impacted as part of these works is a mixture of native, cleared with weeds and planted/rehabilitated. Approximately 18 ha of native vegetation was cleared as part of the construction. The significant fauna species which may occur in this site include:

- Carnaby's Black Cockatoo
- Forrest Red-tailed Black Cockatoo
- Quenda
- Lined skink
- Jewelled ctenotus
- Black striped snake
- Carpet python.

Figure 2 Hemiergis quadrilineata - Skink

Environmental Management

An Environmental Management Plan (EMP) was developed for each site, outlining relevant legislation (including approval conditions), contractual requirements, environmental aspects and impacts, and the associated management, monitoring and contingency actions. These include incorporating the applicable approval conditions, including those from any Environmental Protection Authority (EPA) approved management plans, for the construction phase of the sites.

MRIA operates under the CPB Contractors Environmental Management System which is accredited under ISO14001:2015. This system assists in the implementation of the site EMPs, with internal permitting systems for high risk activities (clearing and dewatering), where site works cannot commence unless approved by the project Environment Manager.

As part of clearing processes, intensive fauna trapping was undertaken to minimise impacts to the local fauna. Over the course of the project, more than 700 native animals were relocated prior to clearing works.

Water

MRIA aims to reduce water use wherever possible across all sites through planning and management. Murdoch Drive Connection and Armadale Road Upgrade are both in close proximity to residents, therefore it was important that measures were in place to reduce any impact to the community. Water used by the project for dust suppression and material compaction has mostly been obtained from non-potable water sources such as groundwater.

MRIA has installed a number of groundwater production bores across the three work sites to supply construction water needs over the duration of the project. All bores are metered and meter readings are recorded at the end of each month. Meter readings are reported on a monthly basis to Main Roads and annually to the Department of Water and Environmental Regulation (DWER). Where appropriate, bore operating strategies were developed and approved by the regulator to manage the monitoring and operational requirements of the various bores. Scheme water was also used on the project mainly for site office uses. Modelled water predictions were indicative of water use during construction, which was monitored on a monthly basis.

Source	Year to 30 June	Total for Project
Water purchased from the scheme (L)	390,000	1,154,300
Water pumped from bores (L)	139,507,600	500,107,000

Carbon Emissions & Energy

The most significant use of energy on a major road project such as this is typically seen during construction rather than operation. This considers the use of diesel in plant and other vehicles, energy consumption at site offices and all temporary lighting and generators that are used to aid construction works. As summarised above, the project to date has produced 8,631 tonnes of CO_2-e emissions through electricity and fuel use.

Efforts to reduce the emissions and impacts associated with the carbon footprint of the project have been investigated for construction and operation. The following initiatives were incorporated into the design and construction of the project to reduce the requirement for earthworks and materials with high embodied energy:

- **MDC:** Use of over 7,000 tonnes of crushed recycled concrete as road base under full depth asphalt (FDA). Compared to a crushed rock road base this saves 50 t CO_2-e.
- **WRW:** Granular pavement replaced the use of FDA at all intersections, reducing asphalt associated emissions by 3,494 t CO_2-e.

A small amount of renewable energy has also been used during construction, mainly from the use of temporary solar lighting poles. While a minor saving, this technology reduced the project emissions by 0.704 t CO_2-e.

Source	Year to 30 June	Total for Project
From fuel use (GJ)	35,110	117,623
From electricity (GJ)	702	1,951

Materials & Recycling

Investigations were undertaken to assess the most appropriate use of materials across the whole project. This includes investigating where design changes can reduce required materials, or alternative materials can be used in place of traditional ones to minimise the associated carbon footprint.

Contractual targets for recycling and waste management have been monitored during construction, with over 96% of construction waste recycled and 68% of office waste recycled. The following list of initiatives have seen reductions in virgin material use:

- The use of Crushed Recycled Concrete (CRC) as sub-base material under FDA at MDC.
- At WRW, Bitumen Stabilised Limestone (BSL) profiling's were mixed with sandy material and reused in the embankment layers beneath the PSP's.
- Where possible, WRW left existing pavement in place and proof-rolled as a sub-grade layer.
- MDC shared excess fill material with ARU to reduce import of fill from the quarry.
- ARU are using oversize material that is not suitable as fill from Nicholson Road Bridge for access tracks / temporary pavements.
- Recycled crushed glass has been used for embankment fill at ARU.

Figure 3 Crushed recycled concrete used on Murdoch Drive Connection

Material and Waste Statistics

Imported Materials	Year to 30 June	Total for Project
Sand (t)	1,424	212,850
Gravel (t)	5,094	5,266
Limestone (t)	36,131	197,388
Crushed Rock (t)	35,598	105,856
Aggregate (t)	3,943	6,865
Asphalt (t)	36,797	52,412
Concrete (t)	11,919	33,121
Steel (t)	2,083	3,309
Reinforced concrete (t)	3,409	7,879
Emulsion (t)	495	979
Bitumen cutter (t)	74	171
Bitumen (t)	89	433
Cement stabilised sand (t)	10,269	16,567
Limestone bricks (t)	15,516	31,952

Waste	Year to 30 June	Total for Project
Unsuitable fill moved offsite/recycled (t)	70.87	15,515.27
Landfill (t)	241.39	476.78
Concrete rubble (t)	5,660.6	10,726.23
Unsuitable material (m^3)	49.14	2,665.14
Recycled (t)	1,037.99	1,727.49

Imported recycled content	Year to 30 June	Total for Project
Road Base (t)	-	500
Concrete (t)	7,186.9	7,286.9
Crushed glass (t)	1,000	4,000
Track material (t)	55	3,166

Noise (from construction and future operation)

The construction works must abide by conditions set out in the LGA approved Out of Hours Noise Management Plans in accordance with the *Environmental Protection (Noise) Regulations 1997.* Controls were implemented during construction that were adequate to minimise noise and aimed to avoid unnecessary noise and disturbance to residents and the local community.

Design measures such as noise walls have been included at Wanneroo Road Widening and Murdoch Drive Connection, where noise modelling deemed them appropriate to minimise impacts of noise and vibration to sensitive receivers during operation.

Vibration

Vibration as a result of construction activities has the potential to impact on the local residents and cause damage to buildings. Vibration may be caused by the use of heavy vehicles, earth moving equipment and compactors. Given the close proximity of residents, schools and other buildings, management

measures were in place to minimise disturbance where possible.

Control of vibration is limited to the appropriate selection of construction machinery, including rollers which can operate on oscillating mode, instead of hammer mode. Monitoring of ground vibration has been undertaken during construction near sensitive receptors. Results are measured and recorded to ensure that vibration levels are considered appropriate in relation to surrounding receivers.

Light spill

Out of hours works and security lighting have the potential to cause light spill into residential areas and fauna habitat. Temporary lighting is generally positioned to minimise/eliminate light spill into residential and other sensitive properties. Temporary solar lighting has been used at ARU for road lighting, which has a bat wing dispersion minimising the light spill and bright, directional light typically experienced with temporary lighting.

Figure 4 Noise walls along Wanneroo Road

Economic Aspects Performance

At a glance

Economic Aspect	Year to 30 June	Total for Project
Funding	$145m	$346m
Number of people employed by supply chain at various stages of project	123	334
Total number of suppliers engaged	50	267
Total number of Indigenous Enterprise	2	12
Total number of Disability Enterprise	0	0
Buy Local Spend (to date)	$4.6m	$191m

Economic context

Wanneroo Road Widening

Wanneroo Road Widening between Joondalup Drive and Flynn Drive was previously an isolated section of single carriageway with limited opportunities for overtaking, creating a pinch point. This typically resulted in northbound and southbound congestion impacting more than 26,000 vehicles per day. These high volumes are expected to grow rapidly due to urban expansion and growth of the Neerabup Industrial Area. The majority of this growth will be focused in areas north of Joondalup Drive with the intended development of a new strategic activity centre at Yanchep and associated residential growth, as well as the Neerabup Industrial Area which is expected to provide up to 20,000 local jobs once it is completed.

The Wanneroo Road Widening project will accommodate this growth and support ongoing development of Wanneroo Road as a major north-south alternative to Mitchell Freeway. The project will compliment future interchange works at the intersections of Joondalup Drive and Ocean Reef Road.

The project will provide local, regional and state economic benefits through reduced travel time and improved safety of commercial and freight trips to the North West Corridor, including Neerabup Industrial Area. It will also improve safety and efficiency along State Route 60, attracting more tourist trips to regional centres along Indian Ocean Drive.

Armadale Road Upgrade

Traffic count data indicates that more than 27,000 vehicles per day use the section of Armadale Road between Tapper and Warton, with 18,000 per day using Warton Road to Anstey Road, resulting in a level of service ‘E’.

These traffic volumes regularly exceed the capacity of the existing single carriageway section, creating significant congestion and delay for road users. By 2021, a level of service ‘F’ will apply if no improvements are made, leading to significant delays for commuters accessing Kwinana Freeway and businesses located within or close to the Cockburn Central Activity Centre.

There is also significant residential and commercial development either underway or planned on the northern side of Armadale Road, along with increasing development in the Cockburn Central District (Cockburn Gateway Shopping Centre, Cockburn Train Station, Jandakot Industrial Area etc.).

This section of Armadale Road also services as a RAV4 (27.5 m road trains) freight route. The primary objective is to address congestion on Armadale Road with the provision of dual carriageway for this section. The project will provide additional lane capacity to improve safety and operational efficiencies in the area, along with better access and traffic flow. The outcome will be shorter journey times, more

reliable access to places of work and more effective scheduling for the freight industry.

Murdoch Drive Connection

The Murdoch Drive Connection to Kwinana Freeway and Roe Highway was identified as a key component of the Murdoch Specialised Activity Centre Structure Plan, first endorsed by the State Government in 2007 and revised in 2014. The Structure Plan states that "...the success of the activity centre will depend upon the staged delivery of key transport infrastructure to ensure an appropriate level of accessibility to and within the centre, in particular the provision of a southern access route."

The project will provide better access to Fiona Stanley Hospital from the south for patients and emergency vehicles. Importantly, the project will also help the Murdoch Activity Centre meet its economic potential as a major employment centre based around health, education and research. Once fully developed, it is expected that the Murdoch Activity Centre will become one of the largest employers outside the Perth CBD with up to 35,000 jobs.

Access to the Murdoch Activity Centre and Fiona Stanley Hospital from Kwinana Freeway Northbound is currently limited to South Street (via Murdoch Drive). During busy periods, this limitation creates severe congestion on South Street and the freeway and an increased safety risk, which would otherwise intensify if the Murdoch Drive Connection was not constructed.

Figure 5 Taylor Road – Wright Road intersection at ARU

Key Economic Outcomes

This package of works will reduce congestion by removing bottlenecks from our road network, improving access to and from Kwinana Freeway and increasing freeway capacity from Russell Road to the Narrows Bridge. It will improve congestion in Perth's northern corridor which is one of the fastest growing areas of the State.

The projects support major public transport improvements such as the METRONET Cockburn to Thornlie rail extension and provide better options for commuters and for those who traverse our suburbs on a daily basis. The projects compliment other new road projects including Kwinana Freeway Northbound Widening from Russell Road and Roe Highway and the development of Perth's first "Smart Freeway" between Farrington Road and Narrows Bridge.

Sustainable Procurement and Buy local

The Alliance objective is to maximise local content, opportunities for Aboriginal employment/enterprises and opportunities for smaller contractors. Buy local has been identified as a priority issue for the project and outcomes have been monitored on a monthly basis.

Results are summarised below:

	TARGET	TO DATE		
		%	Value	#
Australian Content	100%	100%	$191.1m	207
Local Content	95%	99.8%	$190.7m	176
Overseas content	0%	0%	$0	0
Main Roads prequalified	20%	6.63%	$17.4m	5
Disability Content	0%	0%	$0	0
Indigenous Enterprises	3%	3.72%	$9,750,175	12

Climate Change

Considering and adapting to the changing climate improves the resilience of infrastructure projects into the future. Climate change risk assessment workshops were held with a multi-disciplinary team to assess direct and indirect climate risks associated with the project. The Intergovernmental Panel on Climate Change (IPCC) has developed globally accepted climate change scenarios of which the RCP4.5 scenario was adopted to reflect asset component lifetimes. The highest priority risks identified are expected to occur as a result of increased temperatures and increased frequency of storm events that have the potential to impact road users. Adaptation responses that were identified by the team have been implemented through design considerations or will be mitigated through operational maintenance and processes. There were no residual high or very high risks.

Figure 6 Armadale Road Upgrade PSP

Sustainable Transport

Actions taken to improve cycling and pedestrian facilities

Armadale Road previously had narrow and degrading shoulders and was not fit for use by cyclists. As part of the project, a 4 m wide Principal Shared Path (PSP) has been provided for the full extent of the upgrade, providing pedestrians and cyclists with a dedicated facility away from high speed traffic.

A shared path connection has been provided from Joondalup Drive to Flynn Drive/Neerabup Road intersection with a path connection which provides local connectivity into the adjacent local residential areas. A 1.5 m shoulder has been provided allowing safer travel for on-road cyclists between the project extents.

PSP connectivity between the north and south on Kwinana Freeway northbound has been maintained with a new PSP to suit the new road alignment. The PSP includes an underpass to eliminate the need for pedestrians and cyclists to interact with traffic on Roe Highway. A new shared path will provide connectivity between Murdoch Drive and Farrington Road. Furthermore, a series of footpaths ensure connectivity between Murdoch Drive, Farrington Road and Bibra Drive.

Actions taken to improve road bases public transport

Public transport services utilising Armadale Road were limited to only a few services. The Armadale Road Upgrade will provide bus stops at major intersections to facilitate increased bus services particularly with the rapid development occurring on the north side of Armadale Road.

Bus embayments have been provided for the respective bus stops and path connections to the two existing bus stops on Wanneroo Road, improving connecting for local residents.

Two bus routes are affected by the MDC works. The project involved construction of two new bus embayments to maintain connectivity within the existing bus network.

Considerations given to future proofing transport infrastructure

Armadale Road will see traffic more than double by 2031 as land-use changes. The Ultimate design for Armadale Road is a six-lane dual carriageway, which will cater for demand beyond 2031. The design of the Armadale Road Upgrade takes into account the Ultimate design and seeks to minimise disruptions caused by construction in the future.

Wanneroo Road Widening has been designed to connect on the southern side to Wanneroo Road / Joondalup Drive intersection.

The Ultimate design for Kwinana Freeway northbound is a five lane carriageway, which will cater for demand beyond 2031. The design of the Kwinana Freeway northbound takes into account the Ultimate design and seeks to minimise disruptions caused by construction in the future.

Stakeholders engaged to identify opportunities

MRIA has worked with a number of key stakeholders, including representative resident groups, environmental, cycling advocacy groups and local government to identify opportunities of influence. Four Construction Reference Groups (CRG) have been established across the three projects (Murdoch Drive Connection includes an additional Kwinana Freeway Northbound Widening reference group) to provide a mechanism for the project team to engage with key stakeholders.

Some key outcomes from stakeholder influence include:

- Noise wall treatment at WRW was determined in consultation with the CRG.
- Alternative intersection treatments were investigated at Carramar Road intersection, and ultimately an acceleration lane was provided, creating a safer intersection.
- Community concern raised at MDC regarding local road connectivity and traffic drove extensive traffic modelling and microsimulation which ultimately delivered a new design in January 2018.

- During construction of the Armadale Road Upgrade project, significant traffic impacts were expected due to this east west road already being heavily congested. Cyclist detours were adjusted based on recommendations from Westcycle; community members have provided road safety feedback, and connectivity to local businesses has been a key consideration in guiding staging of construction activity
- In consultation with the Banjup community and City of Cockburn, the intersection of Armadale Road and Liddelow Road was modified to left turn movements only for the safety of road users during construction.
- The Armadale Road Upgrade project has accommodated some of the landscape feature upgrade requirements proposed by the City of Armadale.

Social Aspects Performance

At a glance

Social Aspect	Year to 30 June	Total for Project
Community Satisfaction to Project – including feedback forms completed and Community/ Stakeholder Perception surveys completed	0	1040
No. of complaints	159	389
No. of traffic safety incidents within project boundary	9	62
% of women in workforce	33.79%	28.64%
% of women in senior management	9 employees	9 employees
% indigenous in workforce (staff/wages)	0%	2%
% Indigenous in workforce (labour hire)	3%	4%
LTIFR	0	0
No. of people inducted	549	2377
No. of development employees and apprentices on the project	Under the Government Training Building Policy MRIA submitted a total target training rate of 7.82% and listed 69 apprentices and trainees for the 2019-2020 year.	Under the Government Training Building Policy MRIA submitted a total target training rate of 7.82% and listed 69 apprentices and trainees for the 2019-2020 year.

Social context

Stakeholders to the MRIA project include: Federal and State Government, Local Government Authorities (City of Cockburn, City of Melville, City of Armadale and City of Wanneroo), environmental regulators and advocacy groups, local residents and business, Aboriginal custodians, road users (including pedestrians and commuter / recreational cyclists), public transport operators and patrons, and the freight industry.

Through engagement, community members and key stakeholders have been provided opportunities to influence elements of the design and the methodology for how works are staged and delivered. Interactions with construction reference groups (CRGs) and direct contact with the project team, which have granted positive outcomes for the communities which we are working within, include:

- MRIA has shown commitment to providing skills development and employment opportunities for Aboriginal business and people. The focus has been on the involvement of suppliers, subcontractors and labour hire companies with greater than 50% Aboriginal ownership and/or Aboriginal component, as well as internal recruitment. A demonstration of this focus as part of the procurement process was the engagement of an Aboriginal contractor in joint venture with a non-Aboriginal contractor, to build the 1.6 km noise wall adjacent to Roe Highway in Leeming. On average, 20% of the workforce that helped build the wall identify as Aboriginal.
- The ARU CRG provided valuable input in the urban design of the new bridge at Armadale Road

and Nicholson Road. The artwork focuses on the existing environment and history of the area to create a positive, lasting impression. The historic nearby former train station site and railway heritage inspired the artwork which includes tracks and repetition of sleepers, along with a green colour palette in recognition of the rural and bushland surrounding. The pattern has been used on the concrete retaining panels for the bridge ramps and abutments and the panels also have a coloured paint finish.

- MRIA worked with property owners on Peterborough Circle who raised concerns about the height of the noise wall to be built behind their properties. Surveys conducted provided information on individual preference to noise protection versus visual amenity and sunlight. Consultation with each impacted property owner led to the design being modified to ensure all relevant stakeholders were happy with the proposed outcome and regulatory requirements were able to be met.

Figure 7 Leeming noise wall construction, October 2019

Community & Stakeholder Engagement

The strategic approach to engagement for MRIA projects is based on the International Association of Public Participation (IAP2) Consultation Spectrum. The IAP2 Consultation Spectrum is an internationally recognised benchmark which defines the public's role in any public engagement / participation process. Stakeholders are profiled and the engagement methodology tailored to provide the appropriate level of involvement in the decision-making process.

The following engagement methods have been undertaken:

- Technical Working Groups (TWGs) involving local government technical officers are established to collaborate throughout the design process. Once design reached completion, TWG members met on a few occasions, focussing on the implementation of design principles.
- Construction Reference Groups (CRGs) provide a community stakeholder forum for input into areas such as noise wall design and location, fauna management and as a mechanism to voice community sentiment and concern.
    - The ARU project CRG met for the final time in July 2019. Eight of ten planned meetings were held.

- The MDC project CRG meetings were held bi-monthly and saw high attendance and interest in meetings during the design phase. Meetings wrapped up in the last financial year after members advised they were content just being informed of upcoming works.

Addressing community concerns

MRIA acknowledges the early importance of community and stakeholder engagement. By identifying and addressing issues of the community throughout the design and construction phase of each of its projects, it has been possible to achieve sustainable outcomes and maximise community satisfaction. During construction, community concerns were raised via Main Roads customer information centre (CIC), face to face, via surveys and feedback forms and through an enquiry email. A robust and strategic approach by the community team and those on site has effectively managed stakeholder relations and expectations.

Key engagement activities:

- One-on-one consultation with property owners with regards to accommodation works. This includes new fencing for new property boundaries, temporary access tracks and new driveways, and the undergrounding of residential Western Power services. Several meetings have been held to discuss the rationale for changes/upgrades and propose MRIA's design and/or solutions, ensuring the property owners feel valued and are directly involved in the decision making process.
- Involvement of the CRGs identifying, discussing and providing advice on community issues associated with the Project.
- Market research. MRIA has conducted research to monitor communication and stakeholder engagement issues including a baseline Project awareness survey, to monitor:
  - Local community and local stakeholder awareness;
  - Timeliness and usefulness of Contractor information;
  - How information is provided to the public; and
  - Project sentiment
- Advance notice of disruption - In line with LGA out of hours permit requirements, residents were provided with 48 hours' notice for out of hours works.

Figure 8 Bridge over Nicholson Road, March 2020

Heritage

The Environment Management Plans all include a Heritage subplan outlining the controls that have been in place for heritage management during construction.

The project was informed by a number of heritage assessments including archaeological and ethnographic assessment. Urban design aspects incorporated local and regional heritage values through the integration of artwork, which was also recognised as a project quality key performance indicator. This particular indicator is about delivering public art pieces that demonstrate some reference to the local community, history and involve local artists. Extra incentive to include artwork by an Indigenous artist is also measured.

Design aspects that incorporate heritage include:

- Noise wall design pattern and colours at WRW reflect the historic lime kilns of the Carramar area.
- Making reference to the railway heritage of the Armadale/Fremantle Rail Line (State Heritage Place Number 24004) and Bridge (LGA Place No. 115) in the design of the landscape and bridge abutment patterns for Bridge No. 1820.
- Referencing the natural heritage of the wetlands at Murdoch Drive Connection in the design of the landscape and bridge abutment patterns for Bridge No. 1694.

The bridge at Armadale has also been named the Hugo Throssell VC Bridge after a Western Australian Victoria Cross recipient and World War I hero. The bridge over Nicholson Road honours his memory and brings awareness of his heroic wartime actions to future generations.

Figure 9 Ceremony for naming of Throssell Bridge

Road Safety

Targets and expected performance for road safety on the project

Armadale Road Upgrade is subject to Main Roads ROSMA reporting for crash reduction treatments. In the most recent 5-year reporting period, 11 killed or serious injury (KSI) crashes occurred at intersections within the project area. Where project works are occurring, the average KSI crash reduction is expected to be 91% based on intersection treatments. Two of these intersections, at Ghostgum Avenue and Warton Road, were upgraded in 2014 and no treatments are proposed. Although no KSI crashes occurred at the remaining intersections, treatments at those intersections are in line with a safe systems approach.

At midblock sections on Armadale Road there were a total of 8 KSI crashes in the 5-year period. Analysis of all crashes indicated a prevalence of rear end crashes during peak hours, indicating

significant congestion-related crashes. Treatments to Armadale Road, including reducing congestion, will result in a 73% reduction in KSI crashes.

Between 2012 and 2016, there was a total of 5 severe crashes resulting in either fatality or hospitalisation. The Wanneroo project targeted and achieved a design reduction in severe crashes by 69%.

Murdoch Drive Connection project is subject to Main Roads ROSMA reporting for crash reduction treatments. A total of 6 KSI crashes were recorded on Kwinana Freeway northbound within the project limits between 2012 and 2016. The crashes were a mix of rear end, run off road and side swipe crashes. Where project works are occurring, the average KSI crash reduction is expected to be 51% based on midblock and intersection treatments.

Method of management i.e. plan, objective or KPI, audits or reviews

Armadale Road Upgrade design is subject to road safety audits. Crash statistics will continue to be monitored by Main Roads and any defects will be corrected during the course of the project.

The objective of Wanneroo Road Widening was to increase road safety and decrease traffic congestion between the project extents, which through Main Roads Road Trauma Reduction Strategy has been achieved. The project has undergone further Road Safety Audits and External Verification by the client, and an independent verifier to provide assurance that the project will meet its objectives.

Murdoch Drive Connection project has undergone numerous road safety audits. Crash statistics will continue to be monitored by Main Roads.

Specify initiatives developed or treatments that aim to improve road safety for all road users

Armadale Road Upgrade will greatly improve safety on Armadale Road through the provision of safe system intersection treatments, including roundabouts and grade-separated roundabouts. The provision of a four-lane dual carriageway with impenetrable medians will ease congestion and reduce potential vehicle conflicts. Further information on safety initiatives can be found in the Armadale Road Upgrade ROSMA report.

With duplicating the carriageways a median has been provided to separate and minimise potential for head on collisions of oncoming traffic. The road has proposed median street lighting, a reduction in speed limit for the intersections at Golf Links and Carramar allows for median storage and an acceleration lane, respectively. Additional road infrastructure to protect vehicle users against hazards, traffic control mechanisms such as road signage and line marking has also been provided.

Kwinana Freeway - the project will provide an additional lane on Kwinana Freeway northbound and increase the number of added lanes instead of merges, which will reduce congestion and improve traffic flow. Verge and median barriers will protect road users from verge and median hazards.

Roe Highway - the project will provide verge and median barriers to protect vehicles from collisions with roadside hazards.

Murdoch Drive/Farrington Road intersection – Grade separation was selected as preferred treatment to eliminate the crossing of vehicles to maintain traffic flow and to avoid the need for a third intersection over a short distance.

Report outcomes the project has achieved

New safety barriers have been installed on the Murdoch Drive Connection ramp connecting Roe Highway to Kwinana Freeway northbound. These roller safety barriers provide better impact protection for high speed and heavy vehicle crashes by absorbing and converting it into rotational energy. The reduction of direct impact is a key factor in minimising driver and passenger fatalities.

Figure 10 Roller safety barriers on Murdoch Drive Connection ramp, August 2019

Traffic Management

The traffic management team at the Alliance is staffed with maintaining a safe work site for employees and members of the community while maintaining an acceptable level of service for the road network.

MRIA has a target set out in the Performance Management Plan to maintain the average speed of daily network users compared to pre-construction speeds. The impact on local network operations falls under the reputation KRA. During construction this focused on tailored traffic management plans implemented for every temporary traffic switch, which included minimising traffic management activities during peak conditions.

The implementation of traffic management is planned using a hierarchy process. Ideally full road closures will be undertaken in order to minimise safety and congestion risk to the general public and workers. When this can only be achieved through complex and major detours, other methods are used in place such as lane closures and stop-start. The plant and equipment used throughout the installation of barriers is designed to minimise risks to the workforce. This traffic management method includes the use of attenuated trucks and cone trucks, which eliminate the need for workers to be on the ground adjacent to oncoming live traffic.

Workforce Safety

Keeping our people safe is our absolute priority and the most important thing that we do. We actively promote a culture where safety is integrated into our normal business practices. We set clear expectations of our leaders to ensure that we do not compromise the safety of our people for any reason. This includes our subcontractors. As an Alliance we work hard to make our workplaces safe and we are constantly assessing the safety of our workplaces. Our company-wide ONE HSE cultural framework helps to ensure our best-practice management of safety and health combined with active involvement from senior leaders to demonstrate a personal visible commitment.

Safety and health objectives, targets and key performance indicators are established at all levels of the organisation with performance against these monitored and analysed to benchmark current performance and provide the basis for continuous improvement.

The Safety Essentials focus on the key seven areas the organisation has defined as high risk work. When undertaking these works 'above the line' controls must be the preferred option. The intent is to use higher levels of controls as per the Hierarchy of Controls (Elimination to Engineering) to reduce high potential incidents from occurring.

Community Amenity

The methods used to establish the benefits to community amenity targets for the project included desktop reviews of the local greening frameworks and urban forestry targets and community feedback through construction reference group engagement. The method of management is through a KPI for roadside quality. Landscape and revegetation works are primarily concerned with the enhancement of the built environment, reinstatement of disturbed areas and ensuring landscape treatments sympathetically reflect the surrounding environment and context of the project area.

Landscaping design includes:

- Reuse of topsoil which was stripped for construction across the sites for seeding and planting.
- Restoration of native vegetation adjoining to the Bush Forever site at WRW and ARU.
- Over 500 Tuart, Marri and Jarrah seedlings to provide future canopy to shade the roadside at WRW, in addition to over 6,000 native tube stock plants.
- Feature planting of wildflowers at key junctions along Armadale Road.
- Over 100,000 native tube stock plants, including banksias and paperbarks across the ARU site.

Figure 11 Landscaping underway at ARU, February 2020

Diversity

MRIA is committed to valuing and promoting diversity and inclusiveness across the project. The Alliance adheres to the Workplace Relations Management Plan as per requirements under the Building Code 2016 Act. MRIA has adopted an Indigenous Management Plan to assist with engagement of Indigenous workers and improved reporting on the project.

The Alliance participated in the Career Trackers programme. A total of five Indigenous students have worked on the various projects in the summer and winter programme, enabling them to gain valuable experience in the workplace. The project also has a target spend of 4% of the DCT on engagement of

Indigenous employees. This target is part of a reputation KRA and the target areas for Indigenous companies / workers are:

- Supply and subcontract work won through competitive process;
- Salary workers and wages staff;
- Employee / subcontractor training.

This is supported by the Indigenous Engagement Management Plan which has been developed for the project to achieve certain objectives and targets associated with Aboriginal participation during construction.

Workforce Development

The Alliance complies with the requirements for the Government Building Training (GBT) Policy. Under this, MRIA submitted a total target training rate of 7.82% and listed 69 apprentices and trainees for the 2019-2020 year. All staff and wages employees were sourced from the WA state with a small selection from over east, however these employees were seeking to return back to WA as it was their original point of hire.

Under the Safety KRA, the project aims to have a high level of engagement with the project team including subcontractors. This involves safety toolbox talks and various compulsory training that will encourage a prominent culture of safety and support.

The following table shows the number of people inducted each month for the MRIA project since the start of 2018.

Project Inductions											
2018											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	51	52	68	104	87	104	121	101	121	96	115
2019											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
128	144	126	79	129	162	128	100	76	104	68	29
2020											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
29	9	6	0								

Appendix 1 - List of Protected Areas Project interfaces with:

Wanneroo Road Widening

- Bush Forever Site 383

Murdoch Drive Connection

- Beeliar Regional Park (Bush Forever Site 244)
- Roe 7 offset sites

Armadale Road Upgrade

- Bush Forever Sites 390, 263, 344, 342 and 345

Appendix 2 – List of Stakeholders to the project

Community and Stakeholder Management Plans are developed for all MRIA projects, identifying stakeholders and methods of engagement and communication.

Stakeholders include but are not limited to:

- Federal and State Government,
- Local Government Authorities,
    - City of Wanneroo
    - City of Armadale
    - City of Cockburn
    - City of Melville
- Environmental regulators and advocacy groups,
- Local residents and business,
- Aboriginal custodians,
- Road users (including pedestrians and commuter / recreational cyclists),
- Public transport operators and patrons, and
- Freight industry.