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WESTERN AUSTRALIA

Wanneroo Road Joondalup Drive Interchange: Annual Project Sustainability Report 2020

W01024-SU-RPT-0002



This annual report covers the period from 1 July 2019 to 30 June 2020.
Luis Meyzen – Quality Manager / Sustainability Representative
Rahul Deshmukh – Construction Manager

About this Report

This report has been prepared by the Wanneroo Road Joondalup Drive Interchange project team on behalf of Main Roads Western Australia. This report forms part of 2020 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.

This report includes information which will be used as part of the project’s Infrastructure Sustainability Council of Australia rating.

Introduction

The Wanneroo Road Joondalup Drive Interchange project team are committed to the investigation, design and construction required to construct a grade separated interchange at Wanneroo Road and Joondalup Drive and surrounding road improvements

The project team wants to ensure it leaves a legacy through minimising environmental impact, revegetating rehabilitation areas as soon as is reasonably practicable, procuring Western Australian goods and services and achieving an ‘Excellent’ rating for both the ‘Design’ and ‘As-built’ phases of the project under the Infrastructure Sustainability Council of Australia’s rating programme.

Benefits of the project:

- Improve connectivity and travel times for local business and community
- Improve safety
- Support economic activity through provision of a more efficient road network
- Complement other significant congestion-busting works including the widening of Wanneroo Road between Joondalup Drive and Flynn Drive and the upgrade of the Wanneroo Road and Ocean Reef Road interchange.

Highlights

Sustainability Metric	Highlight
Reduction of new concrete drainage piping through design	Material savings - using existing pipes rather than supply and install new
Use of modular panels instead of solid concrete for noise walls	Material savings, e.g. concrete and steel framing
Indigenous Workforce partnership	2 % of project workforce participation
Revegetation	Identifying suppliers to provide local provenance seed, tube stock and mature plants
Local Industry Participation (Western Australian)	100% local industry
Reduction in bridge beam length and depth by adjustment to bridge spans	Material saving, e.g. concrete, steel and earthworks
Provision of active transport options and cycling infrastructure	Full length Pedestrian Shared Path incorporated into design, separated from the main alignment

Reduce water use through construction methodology, e.g. by reducing fill import and cut to fill	Approximately 5,000m ³ reduction in fill and corresponding reduction in water usage.
Use existing groundwater bore and associated infrastructure from legacy projects	Zero ground water bore construction Zero earthworks for related infrastructure

Overview

CPB Contractors has been contracted by Main Roads WA to provide all investigation, design and construction required to construct a grade separated interchange at Wanneroo Road and Joondalup Drive and surrounding road improvements.

The Wanneroo Road / Joondalup Drive Interchange project is funded by the Commonwealth and State Governments as part of a \$2.3 billion investment in road and rail infrastructure, announced by Premier Mark McGowan on 7 May 2017. The project provides a future-focused solution to support current and projected levels of traffic resulting from residential and industrial development in Perth's northern corridor.

Upon completion, the project will:

- Accommodate long term demand projections – pressures on the existing road network
- Improve traffic flow on Wanneroo Road and Joondalup Drive, currently inhibited by signalised intersections
- Reduce congestion and associated safety risk; 220 crashes 2010-15
- Support ongoing residential and industrial development in Perth's northern corridor
- Relieve pressure on east-west linkages and impacts on local roads

The project will complement other significant upgrades in the area to reduce travel times on Wanneroo Road - currently used as an alternate route to Mitchell Freeway; and Joondalup Drive - as a significant east-west access corridor between Mitchell Freeway, the Joondalup City Centre and the expanding residential communities to the east of Wanneroo Road.

Scope of the Works:

- Grade separation of Joondalup Drive going over Wanneroo Road with two lanes in each direction
- A roundabout underneath bridge with two lanes
- New roundabout at the intersection of Joondalup Drive and Cheriton Drive
- New signalized intersection at Wanneroo Road and Clarkson Avenue
- Modifications to intersections with local roads (Drovers Place and St Stephen Crescent)
- Modifications to Burns Beach Road / Joondalup Drive roundabout
- Retaining walls and noise walls on intersection quadrants
- Road furniture, fencing, drainage, landscaping and street lighting
- Shared paths and bus facilities
- Driveways and accommodation work

Budget:

Allocated budget: \$50 million

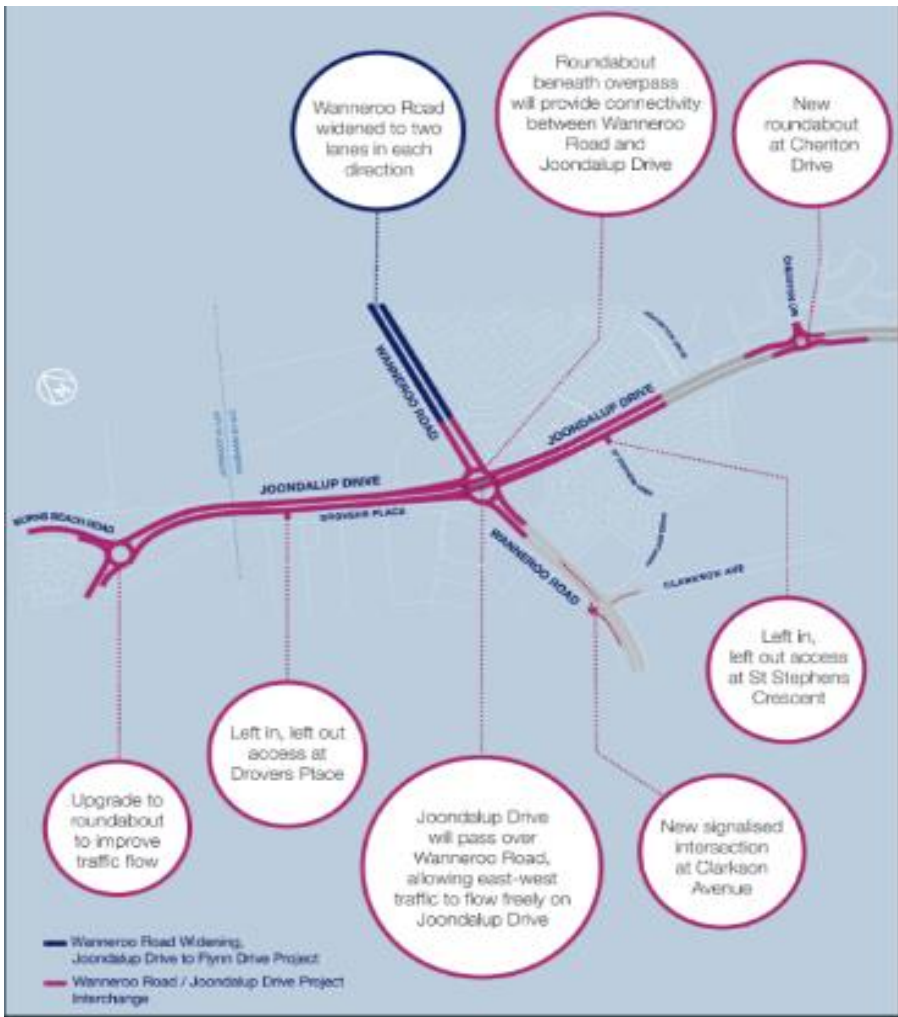
Duration of the project/ Milestone and Key Dates

Separable Portion Milestones	Contract	Forecast
SP02 – D&C WaterCorp pipeline	31-Aug-19	28-Oct-19
SP03 – Balance of the project works	14-Mar-20	6-Jul-20
SP01 – Revegetation and landscaping	22-Aug-20	21-Aug-20

Key Dates	Contract	Forecast
Early Works Start	27-Jul-18	27-Jul-18
Contract Award	26-Aug-18	26-Aug-18
Overhead 132 Kv Relocation (by Others)	12-Apr-19	14-May-19
Stage 1 Traffic Switch /Open Temporary Roundabout	5-Mar-19	15-Jul-19
Tee-roffs Beam Lifting	27-Jul-19	30-Nov-19
Bridge Open for Traffic	17-Dec-19	15-08-20
New WJI Roundabout Open for Traffic	18-Feb-20	15-Sep-20
Clarkson Avenue Open for traffic	14-Mar-19	7-Dic-20
Cheriton Drive Open for traffic	13-May-19	7-Dic-20
Main intersection practical completion		15/09/2020
Satellites Practical completion		31/12/2020



Maps of the project



Wanneroo Road Joondalup Drive Interchange: General Scope – All project



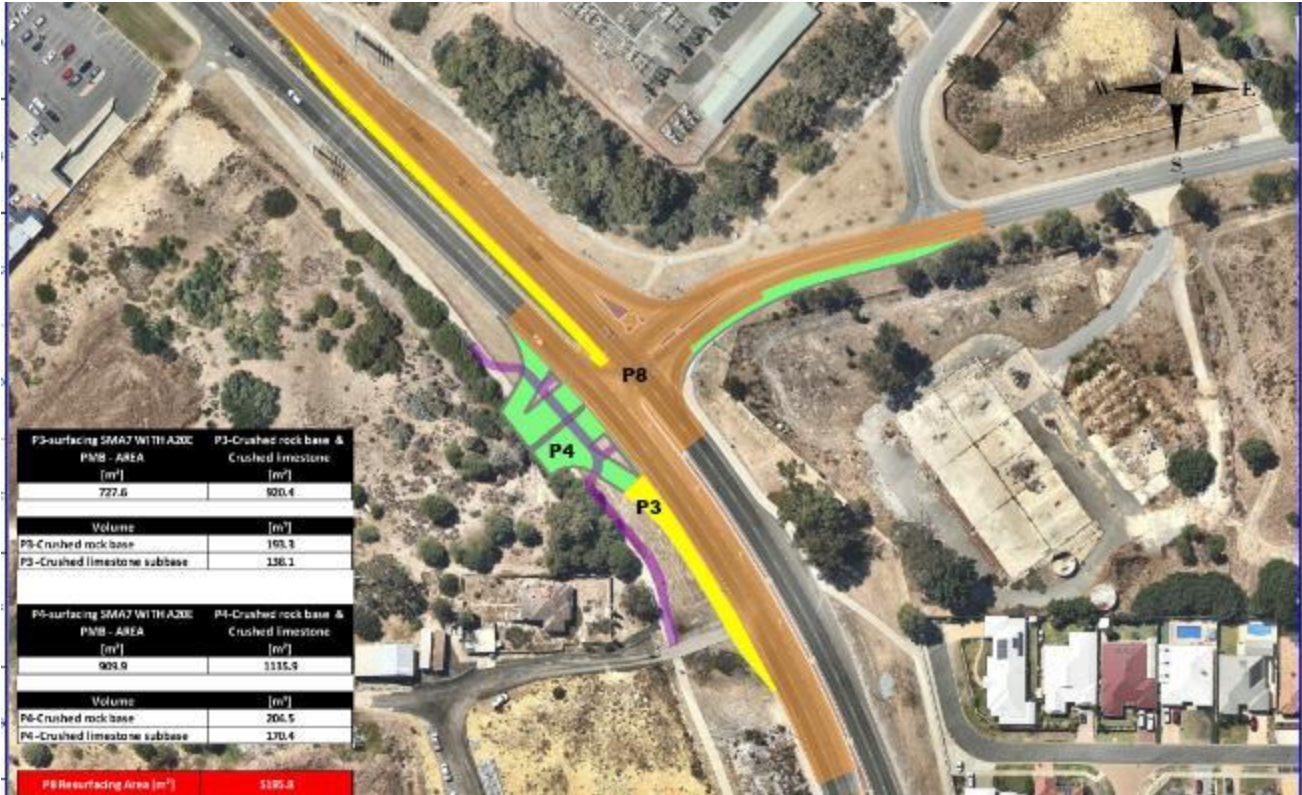
Joondalup Drive & Wanneroo Intersection: Scope- Main Project works which includes Joondalup Drive 4 Span bridge Flyover and modify existing intersection from signalled to Roundabout



Burns Beach Road & Joondalup Drive: Scope-Modify Existing Roundabout



Joondalup Drive & Cheriton Drive: Scope-Modify Existing intersection to Roundabout



Wanneroo Road & Clarkson: Scope-Modify Existing Intersection

Habitat, fauna and flora

A list of protected fauna and flora species and habitat can be found in the Appendix 2.

Key stakeholders to the project

A list of the Key Stakeholders of the project can be found in the Appendix 3.

Overall approach to Sustainability

CPB is the CIMIC Group’s construction company, who have long embraced a sustainable approach to conducting business. Information on this, as well as the Sustainability Policy, can be found at:

<https://www.cimic.com.au/our-approach/sustainability>

Sustainability on the project is being managed through the Project Sustainability Management Plan and regular Sustainability reporting.

Sustainability activities are part of the MRWA and CPB weekly managements meetings and CPB weekly team meetings. The project has assigned a Sustainability Representative role and his responsibilities are defined in the Project Sustainability Management Plan.

The Sustainability Management Plan will :

- Identify the sustainability obligations attached to the tender / project and the hazards and risks associated with the works
- Fulfil the Client's sustainability requirements as defined in the Contract
- Integrate sustainability considerations throughout the design, construction and operation of the Project
- Identify, assess and implement initiatives to achieve sustainability outcomes
- Reduce environmental and social impacts and improve resilience to climate change
- Capture the documentation required to achieve a (self-assessed) score of at least 50 under the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) rating scheme.
- Quantify costs and benefits associated with sustainability initiatives and ratings

The project website can be found in the following link:

<https://project.mainroads.wa.gov.au/home/Pages/wanneroojoondalup.aspx>

Environmental Aspects Performance

At a glance

Aspect	Year to 30 June	Total for Project
Clearing planned (ha)	0.5368	3.569
Actual clearing to date (ha)	0.5368	3.569
Rehabilitation/revegetation planned (ha)	0	0
Actual rehabilitation/revegetation to date (ha)	0	0
Environmental offset via Monetary contribution actual (\$)	TBC	TBC
Total Water Consumption to date (kL)	19368	35939
Total GHG emissions (scope 1 & 2) to date (t CO ₂ e)	149,297	315,184.4
Total energy consumption to date (mj)	1,450,977.75	3,728,823.75
Total quantity of recycled content used in project (t)	164	476
Total imported materials used in project (t)	49,858.1	68, 553
Total waste generated by project (t)	2683	5173

Environmental context

Most of the project constitutes permitted development as it will be contained within the Primary Regional Road (PRR) reservation and does not involve the clearing of bush forever. Almost all works are proposed to be undertaken over the footprint of existing roads and medians.

However, there are some locations where works are outside the PRR reservation or that may involve the clearing of bush forever within the PRR reservation occur.

Part of the primary regional road reservation is located within a designated bush forever site.

No Department of Biodiversity Conservation and Attractions (DBCAs) managed reserves are within the Project Area. The closest Nature Reserve is Lake Joondalup Nature Reserve located approximately 320 m from the Project Area. It is unlikely that the Project works will impact this site.

There are no wetlands within the Project Area. A Conservation Category Wetland (UFI 8159, Paul's Swamp) is located approximately 97 m from the Project Area. Lake Joondalup is also approximately 500m from the project area.

Surface water and drainage is required to be managed as part of the Project design. The Project is not located within a surface water proclaimed area under the Rights in Water and Irrigation Act 1914 (DWIR 2014). All surface water and drainage is managed utilizing the existing surface water drainage infrastructure.

No wetlands or other surface water bodies are likely to be further impacted by the Project works, unless the project is given permission for basin overflow of storm water into Pauls Swamp.

The Australian Soil Resource Information System (ASRIS) database indicates that there is no known risk of Acid Sulfate Soils (ASS) within the Project Area. Pockets of high to moderate risk of ASS are located approximately 75 m from the Project Area. No additional ASS investigations are likely to be required.

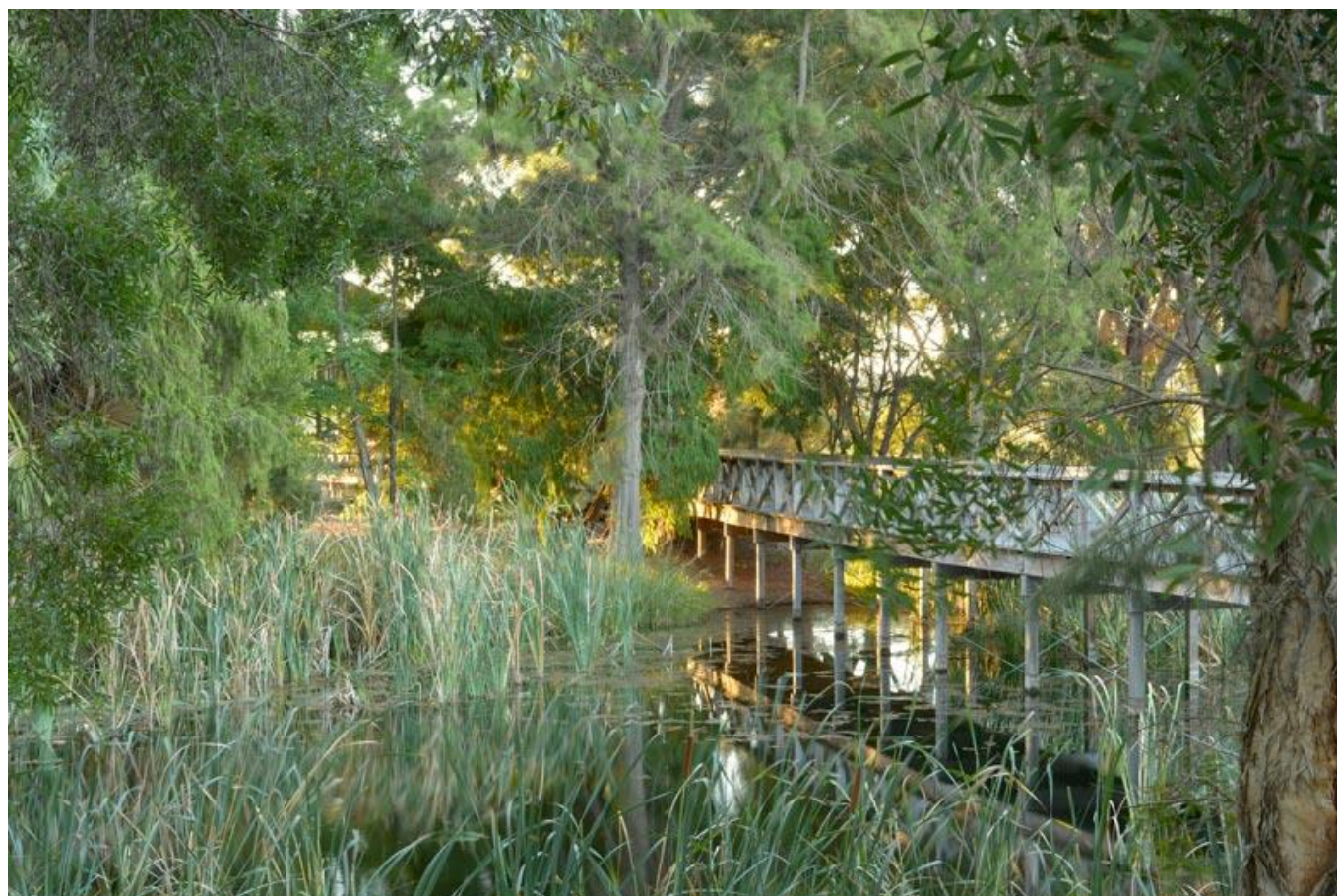
Construction activities will occur within 5-10 m of residential property boundaries. This proximity is likely to result in temporary noise and vibration impacts. Construction noise and vibrations will be managed under the project Construction Environmental Management Plan and Construction Noise, Vibration & Out of Hours Management Plan and the Environmental Protection (Noise) Regulations 1997.

List of significant species impacted by the project can be found in Appendix 2.

List of key environmental legislation impacting the project can be found in the Table below:

Document Reference	Relevant Condition	Limit/Requirement
<i>Conservation and Land Management Act 1984</i>	Provides for the use, protection and management of certain public lands and waters and the establishment of responsible authorities	Permission to undertake activities impacting on DPaW managed properties and compliance with management plans
<i>Environmental Protection Act 1986</i>	Prevention, control and abatement of environmental harm and conserving, preserving, protecting, enhancing and managing the environment	Approval to undertake an assessed proposal, with conditions
<i>Rights in Water and Irrigation Act 1914</i>	Provides for regulation, management, use and protection of water resources and irrigation schemes. Rights and licenses to take water; permit to obstruct or interfere with a watercourse or wetland, including its bed or banks.	Licence to take groundwater (abstraction during the construction phase)
<i>Waterways Conservation Act 1976</i>	Management and conservation of water related land and environment.	Drainage requirements.
<i>Metropolitan Water Supply, Sewerage and Drainage Act</i>	Defines the metropolitan water, sewerage and drainage control area and establishes method of control.	Ensure that development does not endanger water supply areas.

Document Reference	Relevant Condition	Limit/Requirement
1909		
<i>Soil and Land Conservation Act 1988 (WA)</i>	Manages the conservation of soil and land resources and the mitigation of the effects of erosion.	Conservation of soil and land resources and manages erosion



Environmental Management

The Wanneroo Road Joondalup Drive Interchange Project’s Environmental Management Plan (EMP) is established in accordance with CPB’s ‘The Way We Operate’ framework and is the key document that integrates environmental requirements and client environmental requirements during project delivery.

Implementation of the EMP ensures the project will:

- Identify the environmental obligations attached to the project and the hazards and risks associated with the works;
- Assist in the prevention of unauthorised environmental harm;
- Fulfil the Client’s environmental requirements as defined in the Contract, including complying with relevant permits and approvals;
- Comply with all relevant environmental legislation;

- Minimise negative impacts on the community that relate to the Wanneroo Road Joondalup Drive Interchange's environmental impacts;
- Fulfil CPB Contractors' Environmental Management System requirements enabling continued certification to ISO14001

Water Management

Water for construction is provided for the Project MRIA – Wanneroo Road Widening Project and all the water is supplied from Wanneroo Road Turkey Nest bore.

Water for construction purposes is 100% obtained from non-potable groundwater sources, abstracted in accordance with 5C licences and the Department of Water and Environmental Regulation (DWER) approved Groundwater Operating Strategy. This strategy outlines the operating rules, environmental management and process for identifying water use efficiency.

- Dewatering for the construction of structures (e.g. bridges and culverts) are also undertaken in accordance with the 5C licences and managed in line with a Dewatering Management Plan.
- Water use for construction has been modelled and actual usage is tracked for regulatory reporting purposes.
- Reduction of water use through construction methodology (e.g. By reducing fill import and cut to fill) is considered as a sustainability initiative.

Source	Year to 30 June	Total for Project
Water purchased from the scheme in litres	0	0
Water pumped from bores in litres	19368	35939
Water pumped from rivers, lakes or harvested in litres	0	0
Recycled or waste water use (typically from another industry) in litres	0	0

Carbon Emissions & Energy

Carbon emissions and energy are controlled through a daily fuel use register. This data is reported monthly in the sustainability monthly report. The project will also use the 'Carbon Gauge Tool', developed by the Transport Authorities Greenhouse Group, which will be used to determine the energy and carbon footprint for the project.

Savings are expected due to the following initiatives:

Initiative / outcome	Target	Value which will be achieved?
Reduce earthmoving plant and heavy vehicle movements through reduced quantities of fill and improved design, e.g. Approx. 5,000m ³ of fill reduction	10% diesel reduction	Reduction of diesel use and CO ₂ emissions
Use existing groundwater bore and associated infrastructure from legacy projects	Zero ground water bore construction Zero earthworks for related infrastructure	Elimination of earthworks Elimination ground water investigations

Reduce truck movements on roads through (through initiative No. 4 above) and selection of a quarry close to the project)	Nil nuisance complaints and traffic related incidents	Minimised impacts to public road users
Reduction of the number of street lighting poles through double outreaching and use of existing poles	10% poles reduced	Materials saving Operational reduction in CO2 emissions
Asphalt pavements - C600 binder instead of C320	226 tonnes of asphalt reduction	Reducing importation of asphalt Reduction in CO2 emissions
Design of a 4 span bridge instead of 2 independent bridges	20% reduction of import material 12% reduction of MSE walls	Material savings Reduction of diesel use and CO2 emissions

Other efficiencies such as minimising fill, innovative bridge and pavement construction and design are also expected to lower the carbon footprint of the project but have yet to be modelled.

Source	Year to 30 June	Total for Project
Energy usage by source in mega joules		3, 728,823.75
From fuel use (mj)	1,450,977.75	3, 728,823.75
From electricity (mj)	0	0
Energy saved (mj)	TBC	TBC

Materials & Recycling

The sources and locations for the generation of waste during construction are expected to be:

- a) Clearing and grubbing activities, including:
 - Green waste
 - Litter and illegally dumped materials
- b) Earthwork activities, including:
 - Excavated natural materials
 - Unusable topsoil
 - Acid sulphate soils (to be neutralised)
- c) Construction activities, including:
 - Asphalt
 - Concrete
 - Steel
- d) Controlled waste, including:
 - Syringes

- Contaminated soils, including hydrocarbon contaminated soils
- Waste oil
- Solvents and paints
- Acids and other chemicals
- HV and LV tyres

Material and Waste Statistics

Imported Materials	Year to 30 June	Total for Project
Sand (t)	39269.5	45937
Gravel (t)	0	0
Limestone (t)	2320	8689
Crushed Rock (t)	5025	8713
Aggregate (t)	0	0
Asphalt (t)	0	572
Concrete (t)	4031	4331
Steel (t)	0	0
Reinforced concrete (t)	0	0
Emulsion (t)	0	311
Bitumen cutter (t)	0	0
Bitumen (t)	0	0
Other (t)	0	0

Waste	Year to 30 June	Total for Project
Unsuitable fill moved offsite (t)	0	0
Landfill (t)	76	148
Sewage (t)	55	165
Concrete rubble (m ³)	209	510
Pavement rubble (m ³)	0	0
Unsuitable material (m ³)	0	0
General/Green Waste (t)	2343	4350
Unsuitable fill used for rehabilitation purposes (t)	0	0
Recycled (t)	Concrete – 469t Sand – 10150	Concrete – 469t Sand – 29787

Imported recycled content	Year to 30 June	Total for Project
Sand (t)	0	0
Road Base (t)	0	0
Asphalt/Profiling (t)	164	476
Steel (t)	0	0
Concrete (t)	0	0
Other (t)	0	0

Noise and Vibration

Noise and vibration comply with the Environmental Protection Act 1986 (WA) and the Environmental Protection (Noise) Regulations 1997 (WA).

Controls that are adequate to minimise noise and vibration and to reduce risk to the lowest acceptable rating achievable are implemented before any relevant works commence. Elimination of the hazard is the first preference of control, followed by engineering, then administrative controls. The below control measures are applicable to both day and night construction works. There is more importance placed on night activities as these are generally more sensitive for residents. Controls used on this project are the following:

For Noise

- Undertake construction activities within nominated hours of work to comply with contractual and legal requirements. For out of hours construction work (outside 7:00 am to 6:00 pm Monday to Saturday), the City of Wanneroo and City of Joondalup will receive additional notification prior to commencement.
- Construction activities are to be undertaken in accordance with AS 2436-2010 Guide to noise and vibration control on construction, maintenance and demolition sites.
- Undertake construction activities within the nominated hours of work to comply with contractual and legal requirements.
- Out of hours construction work must be approved by the Project Manager or Construction Manager. All equipment must be serviced and maintained according to manufacturer's recommendations, or more frequently if required to minimise noise generated.
- Undertake high noise generating works in accordance with project obligations.
- Where intermittent high frequency noise is a high risk, and pending safety requirements, the least noise-intrusive reversing alarms must be used such as broadband (croakers) in lieu of tonal alarms.
- In accordance with contractual requirements, early consultation must be conducted with community stakeholders on the likely impacts of activities likely to cause disruption.
- Limiting the hours of work where possible in response to community concerns.
- Equipment to be used should be the quietest reasonably available.
- Noise attenuation of fixed and mobile plant as required in order to achieve as low as reasonably practicable (ALARP) noise levels through fitting more efficient silencers or exhaust silencer and keeping enclosure panels (where fitted) closed.
- Construct and maintain temporary noise barriers to shield significant noise generating activities or plant as required at sensitive receptors.
- Adjust the Project Traffic Management Plan/Plans to minimise noise impacts as required.
- Any fixed plant (generators, lighting towers etc) are to be oriented in such a way so that the noise end faces away from residences.
- Where practicable, shipping containers, transportable buildings or the like, are to be located to provide shielding between a noise source and residence.
- Mobile equipment should not be left to idle when not in use

For Vibration

- Ensure a baseline vibration measurement is undertaken at two locations and at the time nominated by Main Roads' Representative. The measurements must be taken at the commencement of construction activities involving the operation of vibratory compaction or percussion equipment.
- Undertake a dilapidation survey prior to construction activities commencing for properties and structures within 100 metres of the construction work.
- Undertake construction activities within nominated hours of work to comply with contractual and legal requirements. For out of hours construction work (outside 7:00 am to 6:00 pm Monday to Saturday), the City of Wanneroo and City of Joondalup will receive additional notification prior to commencement.
- Construction activities are to be undertaken in accordance with AS 2436-2010 Guide to noise and vibration control on construction, maintenance and demolition sites.
- Work practices predicted to generate non-compliant vibration must be amended prior to commencing works to the extent required to comply with applicable limits.
- All equipment is serviced and maintained according to, as a minimum, the original equipment manufacturers (OEM) recommendations, or more frequently if required to minimise vibration generated. Where the OEM requirements are not available then industry best practice maintenance is applied.
- Ensure that ground particle velocities from any necessary operation of vibratory compaction or percussion equipment cause minimum nuisance and do not exceed any such limit that could result in damage to property.
- Advise Main Roads' Representative and respond to any residence complaint no later than 24 hours after the complaint is received and take vibration measurements at the affected residence where deemed necessary.
- If project specified vibration limits are exceeded modify the construction method to reduce vibration.

Discharges & Spills

No reportable spills have occurred on-site during the year to 30 June 2019.

Light spill

All complaints regarding lighting will be treated as environmental incidents by CPB. Two complaints have been received during the year to 30 June 2019.

Economic Aspects Performance

At a glance

Economic Aspect	Year to 30 June	Total for Project
Funding	\$50 million	\$50 million
No. of vehicles per day	TBC	TBC
Travel Time Saving	0	597 VHT
Increase of vehicle capacity	TBC	TBC
<i>Workforce and Supply Chain</i>		
Number of people employed by supply chain at various stages of project	100	150

Total number of suppliers engaged	100	120
Total number of Indigenous Enterprise	2	4
Total number of Disability Enterprise	0	0
Buy Local Spend (to date)	110	220



Key Economic Outcomes

Once works is completed, Wanneroo Road Joondalup Drive Interchange will:

- Replace a busy signalised intersection with a free-flowing interchange
- Making trip safer and improve connectivity and travel times for local business and community
- Increase road capacity to improve journey times and productivity
- Support economic activity through provision of a more efficient road
- Complement other significant congestion-busting works including the widening of Wanneroo Road between Joondalup Drive and Flynn Drive and the upgrade of the Wanneroo Road and Ocean Reef Road interchange.

Sustainable Procurement and Buy local

CPB implemented an Industry Participation Plan (IPP) which is designed to provide a framework describing the management strategy that CPB Contractors will utilise to ensure Western Australian (and Australian) industry receives full, fair and reasonable opportunity to participate in the design and construction of the project.

The IPP will also drive compatibility with the State Government’s ‘Buy Local Policy’ by addressing the following aspects:

- Increasing the proportion of the workforce that are WA employees
- Increasing the extent of training, skills development and apprenticeships
- Raising the value of subcontractors / suppliers employed from within Western Australia first
- Provide other potential benefits to the local industry in WA

Following on from the WA Governments Building Local Industry Policy and Main Roads ‘over-arching’ Industry Participation Plan, CPB Contractors will provide Western Australian companies with a full, fair and reasonable opportunity to tender for work on Wanneroo Road Joondalup Drive Interchange. Successful contractors and suppliers will be encouraged to follow through with the same principles when they subcontract work themselves. They will also be encouraged to utilise Western Australian labour, wherever possible.

CPB is committed to ensuring environmental aspects are considered in the procurement process. This is reflected in the CIMIC Group’s Sustainability Policy, which can be found at:

https://www.cimic.com.au/_data/assets/pdf_file/0018/34128/Sustainability-Policy-June-2017.pdf

The Project reports monthly on local procurement targets, which include 97% local content (Western Australian) and 100% Australian content.

Climate Change Assessments

A climate change risk assessment was undertaken for the Wanneroo Road Joondalup Drive Interchange. Climate projection modelling was undertaken for the years 2030, 2050 and 2070, with the model outputting climate change projections for a range of selected variables per climate change year. Based on the identified risks, a range of adaptation measures have been adopted to mitigate against those risks.

Risk Type	Weather Variable	Risk
Infrastructure	Reduced Rainfall	Impacts on landscaping / vegetation survival
Operations	Reduced Rainfall	Weeds resulting in increased fire risk
Infrastructure	Reduced Rainfall/Temp	Soil movements leading to cracking and structural damage
Infrastructure	Increased Rain Intensity	Increased groundwater levels affecting durability of fill and pavement
Infrastructure	Increased Rain Intensity	Earthworks erosion and scouring of embankments

Risk Type	Weather Variable	Risk
Infrastructure	Increased Rain Intensity	Flooding of infrastructure impacts user access/usability
Infrastructure	Sea Level Rise	Insufficient drainage capacity creates road safety risks and road blockages from flooding on roadway
Infrastructure (Indirect)	Increased Rain Intensity/Sea Level Rise	Inefficiency and back up of wider drainage system causing reduced functionality of drainage assets
Operations (Indirect)	Increased Rain Intensity	Water damage to wider electrical circuitry leading to service disruptions and maintenance issues
Infrastructure	Wind	Changes in wind speed adversely impact structural stability of bridges and ancillary infrastructure
Operations (Indirect)	Wind	Extreme wind events leading to debris, fallen trees and branches landing on roadway
Operations (Indirect)	Wind	Damage to overhead wiring resulting in service delivery / operability impacts
Infrastructure	Temperature	More frequent expansion of steel components
Infrastructure	Temperature	Degradation of asphalt and road surface through asphalt stiffness and softening of pavements
Operations	Temperature	Accelerated degradation of materials (concrete joints and pavement) leading to maintenance costs
Operations (Indirect)	Temperature	Reduced efficiency and function of user vehicles, increasing number of vehicles overheating / breaking down

Sustainable Transport

Upon project completion, Wanneroo Road Joondalup Drive Interchange will:

- Accommodate long term demand projections – pressures on the existing road network
- Improve traffic flow on Wanneroo Road and Joondalup Drive, currently inhibited by signalised intersections
- Reduce congestion and associated safety risk
- Support ongoing residential and industrial development in Perth's northern corridor
- Relieve pressure on east-west linkages and impacts on local roads

Social Aspects Performance

At a glance

Social Aspect	Year to 30 June	Total for Project
No. of complaints	44	110
No. of traffic safety incidents within project boundary	3	6
% of women in workforce	7%	7%
% indigenous in workforce	2%	2%
LTIFR	0	0
No. of hours training during project (*)	570	1380
No. of development employees and apprentices on the project	0	0
No. of employees (FTEs) sourced from local community	100%	100%

(*) It includes only project inductions

Social context

A list of the community stakeholders to the project is attached as appendix 3, List of Stakeholders to the project.



Community & Stakeholder Engagement

Effective communications and stakeholder engagement has been integral to the success of the Wanneroo Joondalup Interchange project. We are committed to ensuring the community is engaged with the project throughout the construction phase, building on the work already completed by Main Roads. This is driven by the Community and Stakeholder Engagement Plan, which complements and supports Main Roads' Stakeholder and Community Consultation Strategy.

At the start of the project a number of community members were strongly opposed and critical of the

project, therefore it was essential the overall rationale for the works had to be addressed on an ongoing basis with clear messaging and robust modelling information.

A critical element of the strategy has been early engagement, by being open, honest and transparent. This has been achieved by being proactive and providing detailed information to the community helping them understand the works and processes before queries have the opportunity to escalate into issues.

Key stakeholders were identified and engaged early on in the project. Resources have been invested into individual stakeholders who have had the ability to influence the project through local and state government, social and/or mainstream media, or their position in the community. Both social and mainstream media are monitored on an ongoing basis, and stakeholders contacted immediately to address issues offline.

The community have received at least monthly communication updates on the project, and at times more frequently. This has included information via email, website, community Facebook pages, face to face meetings, newsletters and letterbox drops.

Throughout the project, this commitment to community engagement has enabled strong working relationships to be developed with local government authorities (City of Joondalup and City of Wanneroo), community group Carramar and Tapping Ratepayers Association, Drivers and Carramar shopping centre businesses, local schools and individual residents.



Addressing community concerns

The project is proactive in engaging the community and understanding their concerns. This is achieved by monitoring social media community pages, regular informal meetings with key stakeholders, holding 2-3 monthly Construction Reference Group meetings, weekly business drop-ins, and ad-hoc conversations with residents.

The project has been political from the start, with a small group of community members vocal in being against the project. These community complaints have been declining since the start of the project as works continue to progress.

Other community concerns received about the project are directly related to the works and changes we are undertaking at the time. Issues which have received the most complaints include:

- closure of right turn access between Joondalup Drive and Drovers Place
- weekend closure of the intersection and related traffic detours
- not allowing a right turn onto Wanneroo Road from Drovers during the weekend closure

All queries/complaints have been responded to within 24 hours. Where possible, a face to face meeting has been offered to discuss concerns or help with information

Heritage

A Preliminary Environmental Impact Assessment was completed for this project in June 2017, detailing potential impacts on the environment as a result of project activities. The preliminary assessment also involved a desktop analysis of environmental aspects and impacts. Information was sourced from numerous authorities including:

- Department of Planning, Lands and Heritage
- Department of the Environment and Energy
- Heritage Council of Western Australia
- Australian Heritage Council

The State Heritage Register and the City of Wanneroo Municipal Inventory indicated that no sites of State or Local Non-Indigenous heritage significance lies within the project area.

The project envelope intersects one Aboriginal Heritage site (Place ID 3504). This registered Mythological site (ID 3504) is located at the western end of the project works, near the Burns Beach Road roundabout. Given that this area has already been disturbed to construct the road there were no management actions specific to this project area and no further Aboriginal Heritage surveys are required.

Road Safety

Road safety will be improved through the following actions:

- Grade separation of Joondalup Drive going over Wanneroo Road with two lanes in each direction
- A roundabout underneath bridge with two lanes
- New roundabout at the intersection of Joondalup Drive and Cheriton Drive
- New signalized intersection at Wanneroo Road and Clarkson Avenue
- Modifications to intersections with local roads (Drovers Place and St Stephen Crescent)
- Modifications to Burns Beach Road / Joondalup Drive roundabout
- Retaining walls and noise walls on intersection quadrants
- Road furniture, fencing, drainage, landscaping and street lighting
- Shared paths and bus facilities
- Driveways and accommodation work

Traffic Management

A comprehensive traffic management design, approval, implementation and review process is in place which ensures all road users safety while maintaining traffic flow at acceptable level of service. Examples of some of the specific road safety treatments planned and implemented include:

- The selection of appropriate detour routes are suitable and safe for the diverted traffic
- Installation of temporary barriers separating the worksite from public traffic
- Installation of temporary traffic signals for safe construction vehicle crossings
- Temporary access track design to maintain safe and efficient traffic flow through worksite and remove vehicles from local roads
- Construction works staging to minimise the traffic delays
- Installation of off-road construction material haul routes wherever possible to minimise the traffic and environmental impacts on the general public.

Traffic management plans are out of a risk management process based on Australian Standard AS/NZS/ISO 31000; Risk management.

All traffic management planning shall undertake hazard identification and risk assessment and shall consider all impacts to work personnel and motorised and non-motorised road users.

The outcome of the assessment shall be detailed in the Traffic Control Plan.

Hazards assessed as posing unacceptable risks shall be managed by appropriate traffic control initiatives.

To date, Wanneroo Road Joondalup Drive Interchange has achieved the goal of zero accidents regarding implemented traffic management

Workforce Safety

Workforce Safety is supported by CPB's AS/NZS 4801 certified Health & Safety Management System. The project undertakes all construction activities in accordance with CPB's "Safety Essentials". The Safety Essentials focus on implementing engineering controls, or above, to key project risks. The Safety Essentials include:

1. Working at heights
2. Working in and around mobile plant
3. Working with temporary works
4. Working with live services
5. Working near live traffic
6. Mobile cranes and lifting operations
7. Electrical work

No LTI's or recordable injuries were recorded within the reporting period.

Diversity

The project has been undertaking works in the suburbs of Tapping and Carramar in the City of Wanneroo. The population of these suburbs is approximately 17,200, with just over 50 per cent identifying as females. The percentage of Aboriginal Australians in this area is less than one per cent.

Appendix 1 - List of Protected Areas Project interfaces with:

- Bush Forever sites 383 and 292
- National Park (Neerabup)
- National Park (Lake Joondalup)
- Paul's Swamp Conservation Category Wetland (UFI 8159)
- Lake Joondalup a Conservation Category Lake (UFI 7954)
- Aboriginal Heritage site (Place ID 3504).

Appendix 2 - Protected fauna and flora species and habitat

Flora

- *Darwinia foetida*
- *Grevillea curviloba* subsp. *incurva*

Fauna

- Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*)
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*)
- Australian Bustard (*Ardeotis australis*)
- Southern Brown Bandicoot (*Isodon obesulus fusciventer*)
- Great Egret (*Ardea modesta*)
- Cattle Egret (*Ardea ibis*)
- Rainbow Bee-eater (*Merops ornatus*)
- Jewelled Sandplain Ctenotus (*Ctenotus gemmula*)
- Black-striped Snake (*Neelaps calonotos*)
- Western Brush Wallaby (*Macropus irma*)

Appendix 3 – List of Stakeholders to the project

Stakeholder	Relevance to project
Main Roads <ul style="list-style-type: none"> Public Affairs Customer Information Centre Traffics Operations Centre Heavy Vehicle Operations 	<ul style="list-style-type: none"> Client
Federal Government <ul style="list-style-type: none"> Federal Minister for Urban Infrastructure, Hon Paul Fletcher 	<ul style="list-style-type: none"> Providing 80% funding
State Government <ul style="list-style-type: none"> Minister for Transport, Hon Rita Saffioti 	<ul style="list-style-type: none"> Providing 20% funding State Minister responsible for project delivery
Opposition – Shadow Minister Transport Liza Harvey	<ul style="list-style-type: none"> State opposition party
State Government Agencies <ul style="list-style-type: none"> Department of Transport Department of Planning Public Transport Authority Department of Fire and Emergency Services (FESA) Department of Environment WA Police Dept Parks and Wildlife WA Planning Commission Water Corporation LandCorp, Steve Bennett Service providers 	<ul style="list-style-type: none"> Responsible for various elements of project Emergency access changes Bus route / bus stop changes
Other Emergency Services <ul style="list-style-type: none"> St John Ambulance 	<ul style="list-style-type: none"> Emergency vehicle operations may be affected by construction of project
Federal Local Members <ul style="list-style-type: none"> Member for Pearce, Hon Christian Porter 	<ul style="list-style-type: none"> Project within Pearce electorate
State Local Members <ul style="list-style-type: none"> Member for Wanneroo, Sabine Winton 	<ul style="list-style-type: none"> Project located in Wanneroo electorate
Local Government <ul style="list-style-type: none"> City of Wanneroo City of Joondalup Mayors Wanneroo – Tracey Roberts Joondalup – Albert Jacob	<ul style="list-style-type: none"> Project within region City of Joondalup is a co-funder
Drovers Business Precinct	<ul style="list-style-type: none"> Access to Drovers Place will be impacted during construction and modified following construction Loss of right turn access on Joondalup Drive

<p>Businesses</p> <ul style="list-style-type: none"> • Wanneroo Botanic Gardens • Drovers Place Shopping Centre 	<ul style="list-style-type: none"> • Access will be impacted during construction and modified following construction
<p>Industry Groups</p> <ul style="list-style-type: none"> • Rotary Club • Taxi Council • Chamber of Commerce • RAC 	<ul style="list-style-type: none"> • Impact their members
<p>Retirement Homes</p> <ul style="list-style-type: none"> • Regents Garden Residential Care • Settlers Ridgewood Rise Lifestyle Village 	<ul style="list-style-type: none"> • Facilities are in close proximity to the interchange • Access may will be impacted
<p>Schools</p> <ul style="list-style-type: none"> • St Stephen's School • Tapping Primary School 	<ul style="list-style-type: none"> • Access may be modified due to changes at St Stephen's Crescent
<p>Local resident organisations</p> <ul style="list-style-type: none"> • Banksia Grove Residents Association • Carramar/Tapping Residents Association • Wanneroo Ratepayers & Residents Association 	<p>Residents group active in the area with particular interest in major local initiatives.</p>
<p>Local landowners</p> <ul style="list-style-type: none"> • Landowners and residents within prescribed locality 	<ul style="list-style-type: none"> • Individual impacts • Access to properties • Noise/vibration during works
<p>Road users</p>	<ul style="list-style-type: none"> • Local road may be impacted by traffic impacts, access changes and night works
<p>Leisure and recreation</p> <ul style="list-style-type: none"> • Cyclists • Pedestrians • Bicycle Groups • Pedestrian Council of Australia 	<ul style="list-style-type: none"> • Changes to how they cross Joondalup drive • Safety concerns