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KAREL AVENUE UPGRADE: Annual Project Sustainability Report 2020

Prepared by Georgiou

This annual report covers the period from 01/07/2019 – 30/6/2020

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About this Report

This report has been prepared by the Karel Avenue Upgrade project team on behalf of Main Roads Western Australia (MRWA). This report forms part of MRWA's annual sustainability reporting, integrated into its Annual Report. This report is informed by the Project's Sustainability Management Plan (SMP) and integrated management system deployed to manage sustainability aspects on the Project. Material topics and sustainability performance targets reported in this report have been determined through Main Roads' processes.

Introduction

The Karel Avenue Upgrade (herein 'the Project') is a key upgrade to an important thoroughfare of road located within Jandakot. The current road is single carriageway in each direction, serving as a major route for trucks and the general public to access the nearby Jandakot industrial area, commercial businesses and Jandakot Airport. There is also a large residential area pocket that utilises this road. As a result, these users produce significant traffic volumes and congestion occurs on this road for the entirety of the day and into the weekends.

There are two primary purposes driving this upgrade of road and infrastructure. The first priority is to reduce congestion and improve the safety standards of the road for the significant amount of road users traversing the Roe Highway and Jandakot commercial/industrial area. The second entails increasing the span of the rail bridge crossing and re-constructing this bridge to produce space, allowing for the future passenger rail line from the Thornlie to Cockburn rail line project. The Project has also constructed a fourth leg road coming off the Berrigan Drive roundabout, which forms as the future entrance for a large bus depot that will service the Jandakot area. Through these upgrades, the Project will further contribute to a reduction in congestion by allowing road users to utilise public transport.

Sustainability and sustainable development is relevant to the Project as Georgiou commit to promoting a culture of sustainability across all operations, and minimising environmental and social impacts through measures outlined in Georgiou's Corporate Sustainability Policy (Appendix 4). The Project values a sustainable future for the generations to come and recognises the importance of incorporating sustainable practices into all we do to achieve long-term sustainability outcomes.

Highlights



Energy and Carbon Emission Reduction

The Project targeted the reduction of emissions through design, construction and operation of the infrastructure. This target has driven the Project teams to realise opportunities beyond Business As Usual (BaU) methods and not typically implemented by industry. The Project recognises that setting a specific target is integral to driving results in the reduction of energy and carbon emissions within infrastructure.



Discharges to Land, Air & Water

Acknowledging the potential impacts of infrastructure delivery on the surrounding environment, the Project is committed to minimising negative impacts and uncontrolled releases to land, air and water. Implementation of an Environmental Management Plan and stringent reporting system has enabled the Project to minimise incidents and address potential impacts of construction activities.



Recycled Materials

Extensive consideration has been given to the use of recycled materials and products with recycled content on the Project. As a result of early implementation within planning and development, this initiative has resulted in design adaptation to integrate recycled materials and targeted the re-use of recycled products such as crushed recycled concrete (CRC).



Waste Reduction

Waste reduction is a key performance area for Georgiou Group. The Project has implemented a diversion target of 70% of waste from landfill and monthly reporting demonstrates progress towards this target. The Project is continually seeking methods to re-use and recycle all materials and on and offsite.



Minimise Water

Water is a critical resource that the Project has taken due consideration of as a part of infrastructure delivery. The Project recognises its role in minimising water usage by implementing a target to first reduce the overall use of water on the Project and secondly reduce the use of potable water. These targets have driven the team to challenge traditional construction methods and identify feasible opportunities to reduce water consumption.



Positive Community Engagement

The Project implemented a Community and Stakeholder Engagement Strategy aligned with Main Roads' community and stakeholder engagement priorities, to manage the potential impacts of construction on the surrounding community. Specific objectives include building trust through open, consistent, accurate and coordinated communications.

Figure 1: Sustainability Initiatives & United Nations Sustainable Development Goals

Overview

Project Overview

Georgiou Group is delivering the design and construction of the \$24 million Project on behalf of MRWA. The Roe Highway and Karel Avenue interchange upgrade (including widening of Karel Avenue Bridge) is set to improve overall traffic flow and access, reduce congestion and improve road safety, and support the development of the Jandakot Airport precinct. The Project encapsulates \$28.7 million funded by the State (\$4.8 million) and Commonwealth (\$18.65 million) Governments, as one of the seven major road projects constructed in Perth's southern suburbs within the \$2.3 billion package of road and rail infrastructure works; and is jointly funded by the City of Cockburn (\$5.3 million) and Jandakot Airport.

The Project has created an estimated 100 jobs, with construction commencing July 2019 and due for completion in late 2020. Project works include investigation, design and construction works required to widen Karel Avenue and provide two lanes in each direction at the interchange with Roe Highway, and complete the replacement of the bridge over the Freight Railway Line. Figure 2 highlights the Project key areas and location of the future infrastructure. Project works include (but are not limited to):

- Structures:
 - Bridge No. 1482 over Roe Highway to accommodate two additional lanes
 - Bridge No. 1595 over the Railway to accommodate future PTA tracks. This bridge will be numbered 1595A
 - PSP underpass No. 9282
 - Retaining walls
- Ramps: modifications to Highway entry and exit ramps to tie in to the modified interchange roundabouts.
- Other Connecting Roads: modifications to the intersection of Karel Avenue / Training Place to convert the intersection to left in-left out configuration.
- Road safety barriers.
- Resurfacing of existing Pavements where lane markings change.
- Accommodation works to properties affected by the Project Works including accesses.
- Fencing.
- Shared paths and footpaths: Reinstatement of the shared path on Karel Avenue and the PSP where affected by the Project Works.
- Drainage including underground drainage, swales, basins, subsoil drainage, culverts and realignment of drainage channels.
- Lighting modification and upgrading of lighting.
- Intelligent Transport System: Relocation or reinstatement of existing ITS infrastructure affected by the works.
- Signing and Pavement marking.
- Services.
- Revegetation and Landscaping and Urban Design.
- Modifications: for provision of all connections, modifications and improvements necessary to Connecting Roads and properties affected by the Project Works, including removal redundant road infrastructure, modifications to drainage, islands and associated new lane markings as necessary.

- Provision for future works to accommodate future modifications to the road and rail network including:
 - Upgrading of the remaining two-lane section of Karel Avenue between the interchange and Farrington Road to two lanes in each direction.
 - Upgrading of the remaining two-lane section of Karel Avenue between the interchange and Pilatus Street to two lanes in each direction.
 - Construction of two additional rail tracks in Corridor Land.



Figure 2: Map of Karel Avenue Upgrade Project Area

The Project recognises the vital role of community and stakeholder engagement during design and construction, and aims to ensure community and stakeholder concerns are considered within design and construction. MRWA commenced community and stakeholder engagement activities and Georgiou is working effectively with MRWA to engage the local community and stakeholders in ensuring they are informed on the scope, impacts and benefits of the overall project.

Through ongoing engagement, the Project has implemented a number of changes during Project development. An example of this includes the introduction of a new U-turn facility on Karel Avenue south of Dimond Court, raised through discussions between MRWA, the City of Cockburn and local residents, to improve safety and congestion on right-turn traffic movements from Dimond Court. Significant scope changes during Project development include:

- Construction of an additional leg to the Berrigan Drive roundabout.
- Widening of the section of Karel Avenue between Roe Highway and Farrington Road to two lanes in each direction.
- Widening the section of Karel Avenue between Roe Highway and the Berrigan Drive roundabout to two lanes in each direction.
- Additional lengthening of Telstra and ARC rail services around the rail bridge 1595.
- Additional MRWA street lighting to the dog bone roundabouts adjacent Bridge 1482/1857 instead of Western Power street lighting.
- Alternative landscaping scope to meet stakeholder requirements.
- Installation of directional signage to Bridge 1857.
- Lengthening of Bridge 1595 to miss MSE wall straps.

For further Project related information, please visit the Project website:

<https://www.mainroads.wa.gov.au/projects-initiatives/projects/metropolitan/Karel-Avenue-Upgrade/>

Sustainability Policy

Georgiou is committed to promoting a culture of sustainability. We manage our operations in a manner that minimises our environmental and social impacts, while enabling the integration of sustainability principles and practices into everything we do. We achieve this commitment by:

- Integrating sustainability initiatives throughout the business.
- Maintaining ethical responsibility in project management, procurement and employment.
- Setting sustainable objectives and targets annually.
- Engaging with local communities.
- Supporting a diverse, engaged, motivated and competent workforce.
- Facilitating the sharing of ideas, knowledge and innovation that provide sustainable benefits.
- Maintaining health and safety of workforce, community and environment.
- Delivering sustainable profits without compromising social, legal or contractual obligations.

For further information regarding Georgiou's Sustainability Policy, please see Appendix 4 or refer to www.georgiou.com.au/responsibility/sustainability/

Overall Sustainability Approach

The Project operates under Georgiou's Corporate Sustainability Policy (Appendix 4) and Sustainability Management Plan (SMP), managing sustainability in a systematic manner that includes social, environmental and economic outcomes the Project determines it can control or influence from a life cycle perspective. The SMP aligns with the Project's commitment to achieve a self-verified Infrastructure Sustainability V1.2 Rating Tool target of 50; a significant sustainability achievement for the Project in terms of achieving material outcomes (refer to Table 4). Guidance captured within the SMP is informed by MRWA's Sustainability Policy (Appendix 1) and approach to managing sustainability in infrastructure delivery.

This SMP forms part of an integrated management system on the Project that enables all areas of sustainability to be managed effectively, including:

- Aboriginal Participation Management Plan.
- Community and Stakeholder Engagement Plan.
- Environmental Management Plan.
 - Noise and Vibration Management Sub-plan.
 - Air Quality Management Sub-plan.
 - Water Quality Management Sub-plan.
 - Flora and Fauna Management Sub-plan.
- Project Traffic Management Plan.
- Urban and Landscape Design Plan.
- Quality Management Plan.
- Records Management Plan.
- Workplace Relations Management.
- Health and Safety Management Plan.

Structure of Key Sustainability Roles

As outlined within the SMP, management of sustainable infrastructure requires a whole of Project response and input across almost every discipline of infrastructure delivery. The Project has determined and made provision for the resources needed for the establishment, implementation, maintenance and continual improvement of sustainability on the Project. Project management ensure the responsibilities and authorities for relevant roles are assigned and communicated within the Project as required.

Outlined below are the critical leaders for management of sustainability on the Project.

Table 2: Key Contractor Leadership Roles and Responsibilities

Contractor Role	Responsibility
Project Manager	Overall responsibility and authority for; - Ensuring that the management of sustainability conforms to the requirements of the SMP - Reporting on the performance of the Project with regards to sustainability, to top management and interested parties

Sustainability Lead (ISAP) (Environmental Manager and/or Sustainability Advisor)	Day to day responsibility and authority for; - Ensuring that the management of sustainability conforms to the requirements of the SMP - Reporting on the performance of the Project with regards to sustainability, to project management - Monitoring, scheduling and participating in reviews
Design Manager / Design and Construction Interface Manager	As per the Sustainability Lead, but with a focus on design matters
Procurement Lead	As per the Sustainability Lead, but with a focus on procurement matters
Construction Manager	As per the Sustainability Lead, but with a focus on construction matters
Community and Stakeholder Engagement Manager	As per the Sustainability Lead, but with a focus on stakeholder engagement matters
Aboriginal Participation Coordinator	As per the Sustainability Lead, but with a focus on workforce development matters
Site Environmental Manager	As per the Sustainability Lead, but with a focus on environmental matters

Table 3: Key External Leadership Roles and Responsibilities

Role	Responsibility
Key Stakeholders	See Appendix 3.
MRWA IS Assessor(s)	MRWA Strategy and Communications branch are considered to be independent of the Project and provide a specialist assigned to the Project during the assessment stage to provide independent verification of the materiality assessment and the base case proposal, and the self-assessment for the design and as-built submission.
MRWA Project Director	Overall responsibility and authority for; - Ensuring that MRWA management of sustainability conforms to MRWA requirements. - Reporting on the performance of the Project with regards to sustainability, to MRWA top management and interested parties.
MRWA Sustainability Lead	Responsibility and authority for; - Reviewing project/asset sustainability performance addressing environmental, social and economic aspects. - Consulting with the team and key stakeholders. - Acting independently and objectively, challenge conventional thinking and providing a 'fresh set of eyes'. - Making findings and provide useful recommendations in a manner that demonstrates objectivity, transparency and absence of bias. - Reporting on the performance of Georgiou with regards to sustainability, to MRWA top management and interested parties.
MRWA Technical Specialists	Day to day responsibility and authority for; - Ensuring that Georgiou management of sustainability

(including in relation to innovations) conforms to the technical requirements of MRWA within their area of expertise (e.g. Lighting).

Sustainability Targets

At the direction of MRWA, the Project has determined the material topics relevant to the infrastructure upgrade and stakeholders' needs and values. Sustainability targets including the reduction of waste, water, and energy usage have been implemented through design, construction and operation of the Project. These targets have been determined through MRWA processes, and the Project's context, nature of the scope forming the works under the contract, and preliminary materiality assessment completed with key Project stakeholders.

The Project implemented the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) V1.2 Design & As-Built Rating Schemes, enabling decision-making that optimises environmental, social and economic outcomes beyond BaU. The Project recognises the role of these target in achieving the internationally pursued United Nations Sustainable Development Goals (SDGs), and aims to achieve a minimum IS V1.2 Design and As-Built score of 50 through a self-assessment verified by MRWA.

A materiality assessment completed with a multi-disciplinary Project team recognized the material SDGs and IS V1.2 targets to pursue. The following SDGs were identified as having very high materiality to the Project:

- SDG 3: Good Health and Well Being;
- SDG 9: Industry, Innovation and Infrastructure; and
- SDG 13: Climate Action.

The following IS topics were categorized as very high materiality on the Project:

- Climate Change;
- Noise; and
- Air Quality.

Through depiction of material sustainability topics within the IS V1.2 Rating Scheme, the Project has been able to set clear objectives to achieve environmental, social and economic objectives through infrastructure delivery.

Environmental Aspects Performance

At a glance

Aspect	Year to 30 June	Total for Project
Forecast Clearing (ha)	0.44	0.44
Clearing permit allowance (ha)	0.92	0.92
Actual clearing to date (ha)	0.44	0.44
Rehabilitation/revegetation planned (ha)	0.14	0.31
Actual rehabilitation/revegetation to date (ha)	0.14	0.31
Environmental offset via Monetary contribution actual (\$)	0	0
Total Water Consumption to date (kL)	21,595	21,595
Total water licence allowance (kL)	40,500	40,500
Total GHG emissions (scope 1, 2 & 3) to date (t CO ₂ -e)	21.4	21.4
Total energy consumption to date (mj) (Diesel and Power)	3,626,770	3,626,770
Total quantity of recycled content used in project (t)	3,567	3,567
Total imported materials used in project (t)	28,367	28,367
Total waste generated by project (t)	139.72	139.72

Environmental context

The Project footprint extends of a nature reserve, major highway, commercial railway line and three residential areas. Careful consideration has been given to the surrounding environment within planning of the construction methodology. The Project controlled the clearing extent and limited areas requested by optimising the design footprint and reducing working room. The area formed part of the previous Roe 7 alliance project footprint and clearing approvals are based off this originally approved area.

The construction envelope avoids the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community located around the rail bridge. The Project borders onto black cockatoo areas but the clearing has been limited to cautiously avoid these areas. The Project footprint also includes native species impacted adjacent the rail corridor, during service relocation works carried out by the service providers under their state wide clearing permit jurisdiction.

The Project is constructed over P1 underground drinking water areas, critically managed to divert spillages and placement of particular materials. This is located around the Berrigan roundabout location.

Areas of the project with low risk of dieback are identified in red within Figure 3. To manage this area, Georgiou have altered the project footprint to avoid clearing this region and risk of handling dieback areas.

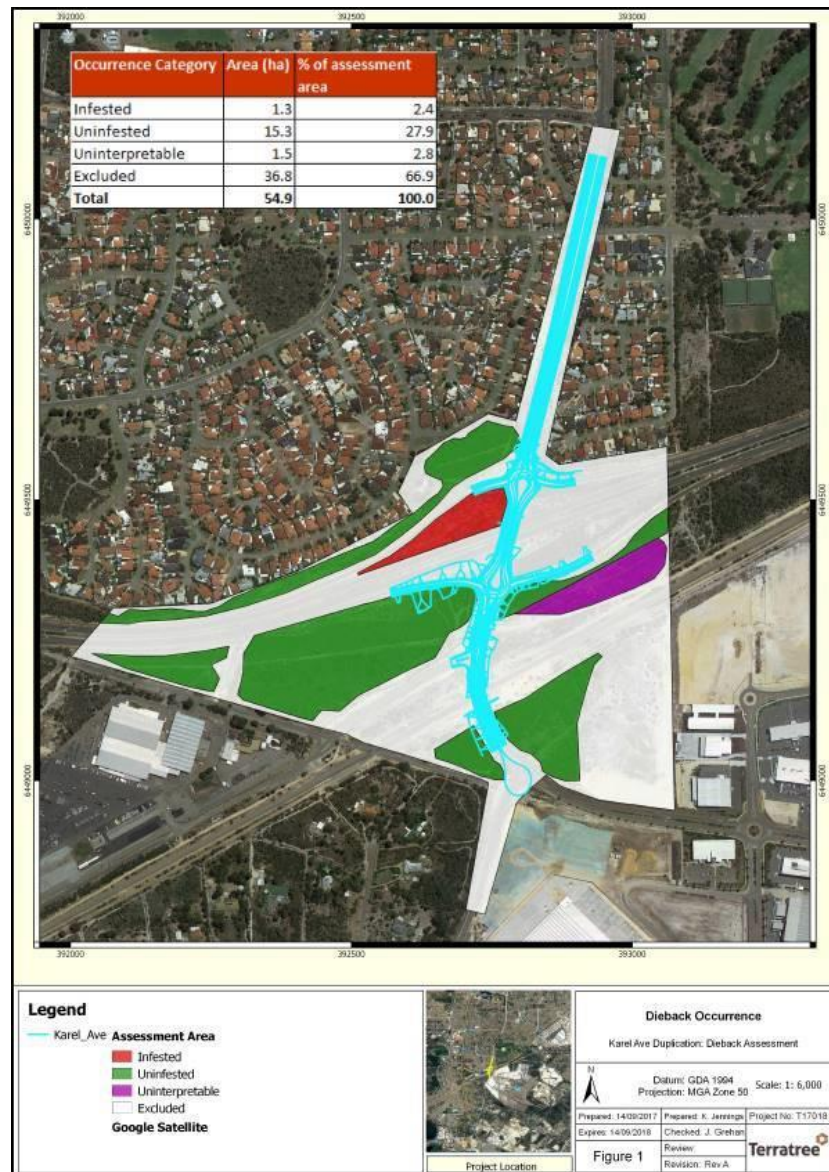


Figure 3: Map of Karel Avenue Dieback Assessment

Drainage design has been developed to discharge water to various points along the project. To the north area of the project, new basins are used as infiltration points for water runoff in this region. This includes catchment of water coming off the Bridge 1857 deck. Roe Highway cross-falls into median drains which then infiltrate. The south area and bridge also then have discharge points that go into the native bushland area. The southernmost area of the project drains into an existing basin along Berrigan Drive already constructed by the Jandakot Airport precinct.

Key Environmental Legislation Applicable to the Project

- Environment Protection and Biodiversity Conservation Act 1999 (C)
- Environmental Protection Act 1986 (WA)
- Environmental Protection Regulations 1987 (WA)
- Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)

- Aboriginal Heritage Act 1972 (WA)
- Aboriginal Heritage Regulations 1974 (WA)
- Biodiversity Conservation Act 2016
- Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (WA)
- Rights in Water and Irrigation Act 1914 (RIWI Act) (WA)
- Environmental Protection (Controlled Waste) Regulations 2004 (WA)
- Environmental Protection (Noise) Regulations 1997 (WA)
- Environmental Protection Act 1986 (WA) approval
- Aboriginal heritage Act 1972 (WA) consent to disturb

Environmental Management

The Project has developed an Environmental Management Plan (EMP), which sets out to describe how environmental aspects are to be managed so that the site and those engaged onsite will:

- Comply with Georgiou Policy, client, legal and other obligations;
- Minimise the impacts on the environment; and
- Achieve the company, client and site objectives and targets.

The EMP is written in accordance with Georgiou's health, safety and environment management system that is third party certified to AS/NZS ISO 14001. Development of the EMP has been based upon the risks and opportunities identified, and specifically address client, contractual, legal and other obligations.

Objectives and targets have been set for the site taking into account the significant hazards and environmental aspects of the job, the group objectives and client and contractual requirements. These are documented in the Site HSEQ Objectives and Targets. Additional objectives and targets may be set specifically for activities identified for upcoming works. Performance against all HSE objectives are monitored, as a minimum, monthly at site meetings.

A risk management approach has been used to determine the severity and likelihood of an activity's impact on the environment and to prioritise its significance. This process considers potential regulatory and legal risks as well as taking into consideration the concerns of community and other key stakeholders.

Water Management

Water Management is outlined within the projects formally approved EMP. The EMP includes a Water Management Sub Plan. The Sub Plan outlined the need for water to be conserved, reused and recycled where reasonably practical.

The Project has identified areas of construction that can utilise the use of non-potable water sources (groundwater). The Project does not fall within a Public Drinking Water Source Area (DWER 2018), but does fall within a proclaimed Perth Groundwater Area (DoW 2010). As such, the Project has been issued a License to Construct and Alter a Well and License to Take Water by the Department of Water and Environmental Regulation (DWER). Part of this licensing involves tracking the usage of groundwater in accordance with the annual entitlement to take water under the License to Take Water. Water usage is tracked monthly and reported to MRWA as part of monthly reporting requirements for the Project.

Groundwater is also a valuable resource to the community and as such, Georgiou not only seeks to reduce the amount of potable water used on the Project and the amount of groundwater that is extracted over the lifetime of the Project. A major source of water usage typically is a result of dust suppression. Georgiou has managed this by landscaping areas as soon as they are completed to minimise the dust issues. Dust suppression glues have also been sprayed onto batters that were planned to sit idle. This was particularly evident to those batters adjacent residential areas. The Project did attempt to share a water license at the start of the Project with a nearby MRWA Project to minimise the amount of extraction licenses but this request was rejected.

Source	Year to 30 June	Total for Project
Water purchased from the scheme in litres	486kL	486kL
Water pumped from bores in litres	21,595kL	21,595kL
Water pumped from rivers, lakes or harvested in litres	0	0
Recycled or waste water use (typically from another industry) in litres	0	0

Vibration

All out of hours vibration generated through construction activities are managed through an approved Noise and Vibration Management Plan (NVMP). There is a contractual requirement to adhere to a limit of 5mm/s. Georgiou have conducted vibration monitoring on site using actual machinery at various radii from the project site to map the levels experienced by residents. Alternate machinery has then been chosen to be used at various locations depending the proximity to residents and to ensure no damage is caused to existing or new infrastructure.

Vibration monitoring has been conducted at locations based on their sensitivity to vibration activities. Sensitive receivers in close proximity to construction activities were selected in consultation with the construction team. Vibration monitoring points are reassessed on an ongoing basis into the future to ensure monitoring is as effective as possible and a true indication of vibration levels generated by construction activities. It is not anticipated that the proposed construction activities will create vibration at a level that will cause damage to nearby structures or create a nuisance to nearby residents. However, where applicable the following measures will be put in place where practicable to reduce and monitor the level of vibration:

- Use of alternative compaction techniques where practicable – including but not limited to oscillating and static rolling.
- Maintaining accurate records of vibration levels at sensitive receptors when construction activities are in close proximity.
- When compaction works are taking place next to sensitive receptors rollers shall operate parallel to receptors and not perpendicular.
- Disengage 'vibration' function when rollers have come to a complete stop, not allowing vibratory energy to build up.

Vibration monitoring is also carried out adjacent the commercial rail line to monitor works associated with the rail. The system runs 24/7 and provides real time monitoring and data which

continuously updated and available electronically.

Case Study – Use of Crushed Recycled Concrete Subbase

Crushed Recycled Concrete (CRC) was used by the Project as a subbase material substitute for standard limestone subbase, under deep lift asphalt only (Figure 4). The use of this material was not approved under standard granular pavements.

CRC achieves the same pavement properties as limestone subbase resulting in a conforming MRWA pavement product and the re-use of waste product. A total of approximately 3,600 tonnes of CRC subbase has been used in place of conventional limestone subbase.

The CRC could only be used in the deep lift areas around the Roe Highway Bridge and not at the Berrigan roundabout, as stipulated under drinking water guidelines issued by DWER RTR Specification to avoid P1 drinking water areas (related to underground water).

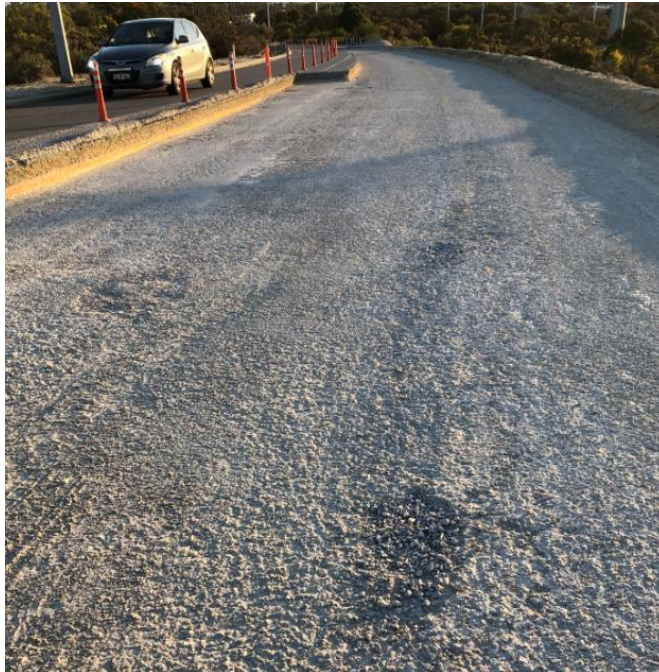


Figure 4: Construction of Ramp Subbase Pavement with Crushed Recycled Concrete

Case Study – Re-Use of Concrete Wall Panels for Bridge 1857

Bridge 1857 allowed for the re-use of the existing concrete panels forming the curved section of the abutment wing wall. The design incorporated the re-use of these panels, minimising the footprint of manufacturing new panels. Adjacent panels constructed were fabricated to ensure the artwork matched the existing panels.

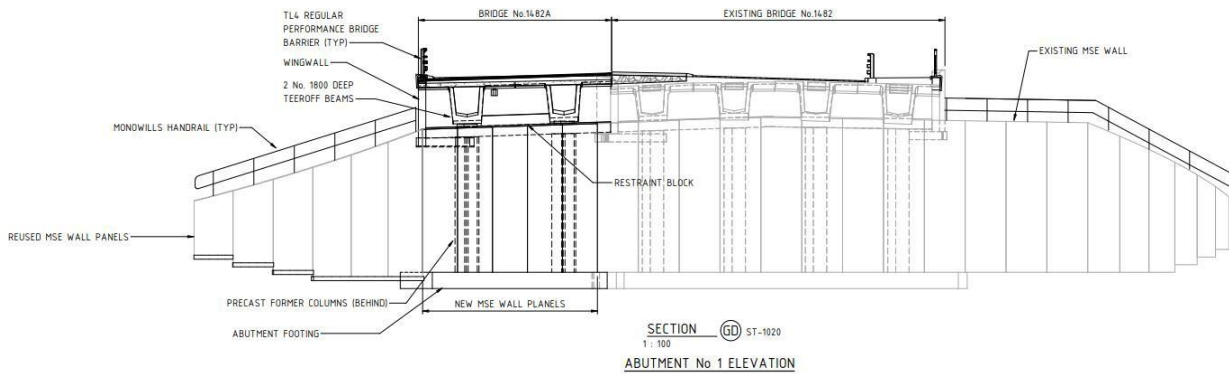


Figure 5: Re-used Wall Panels for Bridge 1857 (See the panels to the left of the unpainted five panels)

Economic Aspects Performance

At a glance

Economic Aspect	Year to 30 June	Total for Project
Funding	\$24million	\$24million
No. of vehicles per day	989	989
Travel Time Saving	Target 70% in the morning and afternoon peaks	TBC – Becomes Dual Carriageway
Increase of vehicle capacity	TBC – Becomes Dual Carriageway	TBC – Becomes Dual Carriageway
Increase in cycling and pedestrian facilities (i.e. increase in PSP length)	1,469m maintained and re-built	1,469m maintained and re-built
<i>Workforce and Supply Chain</i>		
Number of people employed by supply chain at various stages of project	35 Onsite at Peak	35 Onsite at Peak
Total number of suppliers engaged	64 Subcontractors 118 Suppliers Engaged	64 Subcontractors 118 Suppliers Engaged
Total number of Indigenous Enterprise	Currently 3 Indigenous Companies engaged on the project.	Currently 3 Indigenous Companies engaged on the project.
Total number of Disability Enterprise	Nil.	Nil.
Buy Local Spend (to date)	\$15.4million	\$15.4million

Economic context

This project is part of a \$2.3 billion package of road and rail infrastructure works, funded by the Australian (\$1.6 billion) and State (\$750 million) Governments. The Project is one of 17 new projects, aimed to provide a major boost to WA's local economy. Approximately 6000 jobs are expected to be created from these projects.

The Project supports the development of the Jandakot Airport precinct in combatting the inflow of residents and workers that will be utilising this transport network. MRWA estimate the Jandakot

Airport precinct will become home to roughly 300 businesses and 8,000 jobs in the coming years. The Project provides the capacity to cater for future traffic volumes and enables the development to continually progress without adding further stress on an already prominent issue for road users of this transport network.

The project staging and communications are targeted to minimise disruption to community and local businesses. During all stages of construction, access is maintained to facilities. In events where construction activities are in close proximity to business entrances, additional signage and ongoing communication alerts are posted to ensure the community is aware and businesses can continue to operate as per normal. The following lists the Project's key stakeholders:

Key Economic Outcomes

The State and Federal Governments have allocated \$28.7 million for this project. The Project is expected to employ a peak workforce of 100 personnel onsite during the construction phase. By upgrading Karel Avenue to dual carriageway, the below economic outcomes will be realised and improved at the end of construction:

- Improve safety for all road users by removing conflict between turning and through traffic.
- Improve travel time and traffic flow by reducing congestion.
- Improve freight productivity.
- Improve freight reliability.

The improvement of each of the above items will ultimately support economic development, and lead to an improved road network, improving customer satisfaction and appeal to the area, and therefore increased customers to local business and industries. The Project is expected to support 8,000 jobs and 300 businesses when fully developed.

Sustainable Procurement and Buy local

The Project is committed to supporting Western Australian owned and operated businesses. Buy local works have more specifically involved the nearby survey business and local quarry. The local quarry allows for screening of material works and supply of earth materials required for the performance of the works. The local quarry also provides a suitable location for placement of spoil materials given the significant staging that applies to the project.

Climate Change Assessments

As part of the Project's sustainability management, a climate change risk assessment workshop was undertaken with key Project stakeholders. The Project team has addressed the outcomes of the risk assessment. The assessment included assessing the likelihood of the below shocks and stresses, relating to the Project in terms of assets impacted:

- Air temperature
- Humidity
- Sea surface temperature
- Precipitation
- Sea level rise
- Wind and hail

- Bushfire
- Coastal inundation
- Cyclones/storms
- Flooding
- Heatwave; and
- Drought.

Technology and Innovation

Site vision software has been utilised on the Project to allow design details to be viewed on site with user friendly and easily manageable equipment. The system is run by Trimble (survey product software). The system allows the user to download an application and connect their phone to GPS software that can then be used a digital viewer when standing on site to view various design details without having to carry around a lap top or iPad.

The use of the software allows for quick decision-making and review of various elements of the construction site.



Figure 6: Example of the use of Trimble SiteVision Software

Social Aspects Performance

At a glance

Social Aspect	Year to 30 June	Total for Project
Community Satisfaction to Project	N/A	N/A
No. of Stakeholders engaged with during project development	6 major stakeholders for project	6 major stakeholders for project
No. of complaints	91	91
No. of legacy commitments	0	0
No. of heritage sites in project vicinity	0	0
No. of heritage sites significantly impacted	0	0
No. of traffic safety incidents within project boundary	2	2
Percentage of women in workforce	7.8	7.8
Percentage of Indigenous employees in workforce	9.7	9.7
LTIFR	0	0
No. of hours training during project	N/A	N/A
No. of development employees and apprentices on the project	0	0
No. of employees (FTEs) sourced from local community	0	0

Social context

Engaging and consulting the community and project stakeholders (Appendix 3) is key to the success and a key focus of the Project. The Project area is located within 1 kilometre of commercial and industrial business in the Jandakot area and is the main thoroughfare for these heavy vehicles to access Roe highway, and as such heavy vehicle numbers within the project area are high.

Stakeholder Engagement

The Project engages with the community through direct correspondence advising of traffic impacts, road closures, out of works and any major events using the monthly construction updates. The Project holds monthly meetings with the various stakeholders on the project including the following:

- ARC Rail.
- PTA.
- MRWA.
- City of Cockburn.
- City of Melville.
- Jandakot Airport.

The forum includes a presentation and minutes issued after each meeting. The aim of the meetings is to run through the progress of the Project, upcoming works and major impacts and interfaces involving the stakeholders and community.

The forum can then provide the information to the stakeholders to advise the local community of the various impacts using the stakeholders own communication method.



Figure 7: Stakeholder Meeting Presentation Cover

Indigenous Opportunities

The Project is targeting works and/or services undertaken by Aboriginal Businesses to be a minimum of 3% of the Contract Sum and a minimum of 10% of the total working hours to be undertaken by Aboriginal Persons. The Project has engaged a full time employee who has been with the project since the beginning acting in a machine operator and labourer role. The job is very small and staged across its life and there is increased difficulty to engage long-term personnel outside of people already employed by Georgiou directly. Georgiou have made significant efforts to attain key long-term subcontractors such as the traffic management company to have full time indigenous employed personnel working on the Project.

The Project looks to actively engage Indigenous businesses and has successfully done so through various works on the project such as major signs and the landscaping works.

Traffic Management

Traffic management is one of the highest risk activities on a roadwork site. The Project area poses a range of traffic management constraints and challenges:

- Jandakot Industrial area linked with high volumes of heavily vehicles.
- Roe Highway forms part of the RAV Network 5.
- Local roads connecting onto High Street.
- Local residents and night works impact.
- Underpass/bridge excavations.
- Underground and overhead utility services requiring relocation.
- Maintaining an acceptable level of service for the road network.

Georgiou is committed to ensure a safe work site for employees and members of the community while maintaining an acceptable level of service for the road network.

Examples of specific road safety treatments planned and implemented include:

- Traffic management planning using a hierarchy of control process (ideally traffic around the work area).
- Detailed traffic management staging (Closing right-turn movements to and from High Street).
- Road closures and providing adequate detour routes.
- Installation of temporary barriers separating the worksite from traffic.
- Geometric design to meet Main Roads WA accepted temporary design standards for temporary alignments while maintaining suitable speed limits and traffic capacity.
- Desktop, pre and post Road Safety Audits of temporary traffic switches.
- Undertaking traffic analysis prior to significant modifications to the road network, including intersection layout, lane configurations and road closures.
- Staging the decommissioning of street lighting to maintain existing lighting infrastructure.

Workforce Safety

The Project has a Health Safety and Environment (HSE) Management Plan, applying to all activities undertaken by staff and sub-contractors delivering the project.

The Project records lead and lag HSE statistics, and to date the Project has had only first-aid injuries with no medical treatment or Lost Time Injury injuries. Injuries and diseases the workforce are pre-disposed to include:

- Fall from heights
- Mobile plant injuries
- Engulfment from collapsed excavations
- Electrocution or electric shock
- Exposure to live services, including medium pressure gas, high voltage electricity and sewerage
- Asbestos related diseases, and

- Live traffic injuries.

Project initiatives to address these risks include:

- Revised permit to work procedure
- Targeted detailed hazard inspections
- Engineering involvement in conducting HSE meetings
- 'Safety is My Way' implementation

Lead indicators include detailed hazard inspection and workplace inspections. These are completed by supervision Engineering personnel and site management. Hazards are identified by this process and corrective actions implemented for rectification.

Appendix 1 - List of Protected Areas

Project interfaces with

Bush Forever site 244 is located directly adjacent to the southern end of the Project Area. The area located directly adjacent to the Project has been previously cleared for the Jandakot redevelopment and will not be further impacted by the Project. The closest area of remnant native vegetation within this site is approximately 750m east of the Project and will not/has not been impacted by the Project works.

There are Priority 1, Priority 2, and Priority 3 Public Drinking Water Source Areas (PDWSAs) within the Project Area. There has not been and it is not expected that there will be any impact of these important water sources due to the scope of works and management measures implemented in line with DWER requirements. To date there has not been any dewatering activities completed on site and it is not anticipated that any dewatering will be required over the remaining lifetime of the Project.

Appendix 2 - Protected fauna and flora species and habitat

Total of 45 conservation significant species (fauna) listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), the Wildlife Conservation Act 1950 (WC Act) or further ranked by DBCA as Priority (1-5) species were identified as potentially occurring in the desktop assessment using the EPBC Protected Matters Search Tool and DBCA Naturemap searches (as per the Project's Environmental Impact Assessment). Of these:

- 5 species are likely to occur;
- 8 species may occur; and
- 32 species are unlikely to occur.

The five species likely to occur within the Project footprint include; the Forrest Ret-tailed Black Cockatoo, Carnaby's Cockatoo, Quenda, Perth Lined Skink and the Rainbow Bee-eater.

No species listed as Declared Rare Flora or Threatened under the WC Act or as Threatened under the EPBC Act were recorded during targeted searches within the Project Area (Environmental Impact Assessment), despite six identified as likely to occur during the desktop analysis (MRIA2017a).

Appendix 3 – List of Stakeholders to the project

Stakeholder Groups	Details
Client	MRWA
Regulators	Department of Water and Environmental Regulation Department of Planning, Lands and Heritage Environment Protection Authority (EPA) Department of the Environment (DotEE)
Emergency Services	State Emergency Service, Police (Murdoch and Cockburn Police Stations), Ambulance, Department of Fire and Emergency Services
Contractor	Parent Company (Georgiou), Consultants (Design and necessary suitable qualified professionals), Suppliers and Subcontractors.
Operator	MRWA
Aboriginal Land Council	South West Aboriginal Land and Sea Council
Users (or representatives of)	Travelling public, Public transport (including school and general bus/coach operators), Freight and transport unions, Transport and heavy vehicle operators, Cyclists, Taxi companies, Motorist groups, Ride share providers, Cycle West.
Local Government	City of Cockburn (Main), City of Melville (Secondary)
State Government	Department of Transport, PTA, Department of Premier and Cabinet, Development WA
Federal Government	Environment Protection Authority (EPA) Department of the Environment (DotEE)
Utilities	Telstra, Western Power, Water Corporation, Atco Gas, Origin Energy, Optus, Telstra, NBN

Neighbours	Residents and businesses in and around Jandakot.
Community Groups	Construction Reference Group
Media	Metropolitan and suburban newspapers, radio and television, including: Fremantle Herald and Gazette, News Local, The Australian, Primary television news programs on ABC, SBS, Channels 7, 9 and 10 Travel, trade and motorist publications.

Appendix 4 – Georgiou Company Sustainability Policy



COMPANY POLICY

Georgiou

SUSTAINABILITY

Georgiou is committed to promoting a culture of sustainability, managing our operations in a manner that minimises our environmental and social impacts and enabling the integration of sustainability principles and practices into everything we do.

In order to achieve this commitment Georgiou will:

- focus on integrating sustainability initiatives throughout the business;
- be ethically responsible in managing the projects we construct, the materials we procure and the people we employ;
- set sustainable objectives and targets applicable to our projects prior to commencement and facilities on a yearly basis;
- engage with local communities to achieve shared and lasting outcomes;
- support our workforce in being diverse, engaged, motivated and competent - together working towards the sustainable success of our business;
- facilitate the sharing of ideas, knowledge and innovation, internally and externally, that create financial savings and benefit to society and the environment in which we operate;
- implement risk and hazard management principles to maintain the health and safety of our people, the surrounding community and the environment; and
- drive to deliver sustainable profitable growth while satisfying our social, legal and contractual obligations.

All employees who work for Georgiou have a personal responsibility for implementing this Policy.

Rob Monaci
Chief Executive Officer
August 2018

SAFETY | PROFIT | RELATIONSHIPS | PEOPLE | INNOVATION



Appendix 5 – Glossary of Terms

Terms and definitions used within this document are listed below.

Term	Definition
BaU	Business as Usual
Material	Environmental, social and economic aspects as ranked by significance and importance to stakeholders.
CPTED	Crime Prevention Through Environmental Design
CSF	Credit Summary Forms
EPD	Environmental Product Declaration
IS	Infrastructure Sustainability
ISAP	Infrastructure Sustainability Accredited Professional
ISCA	Infrastructure Sustainability Council of Australia
IS Rating Framework	System to evaluate sustainability of infrastructure, utilising the IS tool
MRWA	Main Roads Western Australia
RFP	Request for Proposal
SDGs	United Nations Sustainable Development Goals
SMP	Sustainability Management Plan
SWTC	Scope of Works and Technical Criteria
UN	United Nations