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KAREL AVENUE UPGRADE: Project Sustainability Report 2021

Prepared by Georgiou

This annual report covers the period from 1st July 2020 – 30th June 2021. A previous annual sustainability report was prepared for the project for 2019-2020.

Contact details for Sustainability Lead – Melissa.arias@georgiou.com.au
Contact details for Communications Lead – Sandy.oliver@georgiou.com.au

About this Report

This report has been prepared by the Karel Avenue Project team on behalf of Main Roads Western Australia (herein 'MRWA'). This report forms part of MRWA's annual sustainability reporting which is integrated into its Annual Report. Report content is prepared in accordance with GRI principals. Material topics in this report have been determined through MRWA's processes and a materiality assessment adhering to the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) Rating Tool V1.2.

Introduction

The Karel Avenue Upgrade Project (herein 'the Project') is a key upgrade to an important thoroughfare of road located within Jandakot. The existing road was single carriageway in each direction and serves as a major transport route for trucks and the general public to access the nearby industrial area and commercial businesses, including Jandakot Airport. There is also a large residential area that utilises this road. Traffic volumes produced from these users is significant and there is congestion on this road for the entirety of the day and into the weekends.

The Project has two primary purposes which drive the upgrade of the road and infrastructure. One purpose is to help reduce congestion and improve the safety standard of the road for the significant amount of people traversing the Roe Highway and Jandakot commercial/industrial area. The other purpose is to increase the span of the rail bridge crossing and re-construct this bridge to produce space allowing for the future passenger rail line for the Thornlie to Cockburn rail line project. The Project will help congestion by allowing people to further utilise public transport. The Project has constructed a fourth leg road from the Berrigan Drive roundabout which forms the future entrance for a large bus depot which will service the Jandakot area.

The Project acknowledges the importance of supporting sustainable cities and resilient infrastructure. The Project has endeavoured to incorporate sustainable practices into design and construction, and positively influence long-term environmental, social and economic outcomes (refer to Appendix 4). Sustainability targets were implemented within design and construction of the Project, as detailed in the following sections. Targets were determined through a materiality assessment with key Project stakeholders, giving consideration to the Project's context and value to stakeholders.

Highlights

Circular Economy
Extensive consideration has been given to the reduction of waste and reuse of recycled materials on the Project. As a result of early implementation and design adaptation the Project has integrated recycled materials such as Crushed Recycled Concrete (CRC) and has reused various materials from deconstruction. The Project has implemented a waste diversion target of 70%. Waste initiatives include collecting and donating containers to Scouts WA and collecting lids that are reused to make wheelchairs.

Energy and Carbon Emissions Reduction
The Project targeted the reduction of energy and carbon emissions through the design, construction and operation phases of the infrastructure. This target has driven the Project team to realise opportunities beyond Business as Usual (BaU), including increasing waste diverted from landfill by 10% from the target reduction. Based on the Life Cycle Assessment (LCA) completed at end of design by external consultants, the Project achieved a 4.5% impact reduction over the lifecycle of the infrastructure, equal to 7,478 tonnes CO_2 emissions reduced.

Managing Discharges to Air, Land & 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 systems has enabled the Project to minimise incidents and through the construction phase. No major incidents or hazards have occurred.

Reducing Water
Water is a critical resource that the Project has taken into consideration as a part of 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 identify feasible opportunities to reduce water consumption, including phasing of works and onsite re-use of preconditioned soils. The LCA completed at end of design confirmed a 7.3% impact reduction equating to 19 megalitres saved.

Addressing Community Concerns
The Project implemented a Community and Stakeholder Engagement Strategy aligned with MRWA's 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 Highlights on the Project

Overview

The Project is set to improve overall traffic flow and access, road safety, and support the development of the Jandakot Airport precinct. The $28.7 million Project is jointly funded by the State and Federal Governments, with contributions from the City of Cockburn and Jandakot Airport. Georgiou Group was awarded the design and construction contract to deliver this key infrastructure upgrade on behalf of MRWA, due for completion in July 2021.

Project works involved investigation, design and construction works required to widen Karel Avenue (refer to Figure 2). This includes providing two lanes in each direction at the interchange with Roe Highway, as well as completing 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):

- Widening Karel Avenue bridge over Roe Highway to create a dual carriageway, connecting at the two-lane dog-bone roundabouts for on and off-ramps;
- Extending of above bridge across the freight railway line located immediately south of Roe Highway to facilitate construction of the Thornlie-Cockburn Link as part of METRONET;
- Extending the existing underpass to accommodate the widening;
- Modifying the existing Training Place intersection to left-in and left-out to promote safe access;
- Road widening between the Farrington Road intersection and Roe Highway to four lanes; and
- Road widening between Roe Highway and the Berrigan Drive roundabout to a four-lane dual carriageway, including modifications to the roundabout approaches to enable two lanes in each direction.

Key stakeholders on the Project include MRWA, City of Cockburn, City of Melville and Perth Transport Authority (PTA). Full list of stakeholders on the Project can be found in Appendix 3. 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.

Significant scope changes during Project development have included:

- 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/

Figure 2: Map of Karel Avenue Upgrade Project Area

Overall Sustainability Approach

The Project operates under Georgiou's Corporate Sustainability Policy (Appendix 4) and a project-specific 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 lifecycle perspective. Sustainability is managed on the Project in line with the commitment to achieve an ISCA ISv1.2 Design and As Built Self-Assessed Rating of at least 50. These ratings are verified by MRWA for accurateness, including associated documentation such as the Base Case. The Project's ISCA ISv1.2 Design Self-Assessment achieved a verified score of 59 – a significant achievement in demonstrating sustainable and resilient infrastructure.

The entire Project team has a role in the realisation of sustainable outcomes and the ISv1.2 sustainability targets. The Project's management team has driven a culture of sustainability and ISv1.2 targets are managed across various members of the Georgiou Project team, dependant on each person's disciplinary area. This ensures the right people are managing the relevant sustainability risks and opportunities to see them realised during delivery. Holding multidisciplinary sustainability workshops is just one of the methods Georgiou utilised to achieve shared environmental, social and economic outcomes on the Project.

A LCA is utilised by the Project to track performance against sustainability lifecycle reduction targets. Completed by external sustainability consultants, the LCA completed at end of design confirmed the following performance:

- Reduction of energy and carbon emissions over the infrastructure lifecycle by 4.5% - approximately 7,478 tonnes CO_2 emissions saved.
- Reduction of material lifecycle impacts over the infrastructure lifecycle by 8% - approximately 5,597 tonnes CO_2 emissions saved.
- Reduction of water consumption over the infrastructure lifecycle by 7% - approximately 19 megalitres saved.
- Diverting waste from landfill by 85% - approximately 3,293 tonnes diverted from landfill.

Guidance structure of the SMP is also informed by MRWA's Sustainability Policy (Appendix 1) and approach to managing sustainability in infrastructure delivery.

Material Sustainability Issues

A materiality assessment was completed with a multidisciplinary Project team and external stakeholders, determining the most important (material) issues on the Project. The assessment and material issues that followed were identified with consideration to the Project's context, impact to Project stakeholders, and the material issues determined by MRWA in the Project Scope of Works and Technical Criteria (SWTC). The United Nations Sustainable Development Goals (SDGs) in Figure 3 were identified through this assessment as high materiality.

SDG 3 Good Health and Wellbeing

SDG 9 Industry, Innovation and Infrastructure

SDG 13 Climate Action

Figure 3: Material SDGs on the Project

Completion of this assessment identified the material sustainability credits from ISv1.2 Design and As Built Ratings, with the most important credits represented in Table 1. Management of these aspects is further detailed within the body of this report. Through depiction of material sustainability issues, the Project is able to set clear environmental, social and economic objectives to achieve through infrastructure delivery.

Table 1: Very Material ISv1.2 Credits on the Project

ISv1.2 Credit	Aim	Materiality
Cli-1 Climate change risk assessment	To assess climate change risks and requirement for climate change adaptation measures.	Very High
Dis-2 Noise	To identify noise impacts across project/asset's lifecycle.	Very High
Dis-4 Air Quality	To identify air quality impacts across project/asset's lifecycle	Very High

Environmental Aspects Performance

At a glance

Table 2: Environmental aspect performance measures and for the Project to date

Aspect	Year to 30 June	Total for Project
Forecast Clearing (ha)	0	0.44
Clearing permit allowance (ha)	0.92	0.92
Actual clearing to date (ha)	0	0.44
Rehabilitation/revegetation planned (ha)	0.31	0.31
Actual rehabilitation/revegetation to date (ha)	0.31	0.31
Environmental offset via Monetary contribution actual ($)	-	-
Total Water Consumption to date (kL)	5,779	28,190
Total water licence allowance (kL)	40,500	40,500
Total GHG emissions (scope 1 & 2) to date (t CO_2-e)*	198.28 t CO_2-e	476.92 t CO_2-e
Total energy consumption to date (mj)^	158,909	273,642
Total quantity of recycled content used in project (t)	28,105	31,672
Total imported materials used in project (t)	12,444	40,811
Total waste generated by project (t)	3,325	6,445

**based on fuel and electricity consumption.*
^based on electricity consumption.

Environmental context

The Project footprint encompasses 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 amount of clearing works 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 contains and is adjoined by black cockatoo areas, however clearing has been limited where practicable to keep clearing of these areas to a minimum. These adjoining and encompassed areas include black cockatoo foraging habitats ranging in quality from 'low' to 'high' (Appendix 5).

The Project is constructed over a Public Drinking Water Source Area (Priority 1). This Priority 1 area is situated at the Berrigan Drive rounadabout. The Project has and will ensure that groundwater resources used for public water supply have been appropriately managed and protected.

Dieback mapping completed for the Project as well as the final design of the Project has dictated that no known dieback infested areas will be impacted over the Project's life cycle.

Environmental Management

The Project has developed an Environmental Management Plan (EMP), which describes how environmental aspects are to be managed so 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 is based upon the risks and opportunities identified, and specifically addresses client, contractual, legal and other obligations.

Objectives and targets set for the site take 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. 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 Project's formally approved EMP, within a Water Management Sub-Plan. The Sub-Plan reiterates the need for water to be conserved, reused and recycled where reasonably practical. The Project aims to reduce overall water consumption by 5% and the use of potable water by 20%, from Business as Usual (BaU). To date, the Project has achieved a 7% reduction in overall water usage and a 21% reduction in potable water usage.

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, 2019), but does fall within a proclaimed Perth Groundwater Area (DWER, 2020). 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. Water usage is tracked monthly and reported to MRWA as part of monthly reporting requirements for the Project.

Groundwater is a valuable resource to the community and as such, Georgiou seeks to reduce the amount of groundwater extracted over the lifetime of the Project. A major source of water usage is typically the 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 particular evident to those batters adjacent to 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.

Table 3: Water consumption across multiple water sources to date for the Project

Source	Year to 30 June	Total for Project
Water purchased from the scheme in litres	204,000	738,000
Water pumped from bores in litres	5,575,000	27,452,000
Water pumped from rivers, lakes or harvested in litres	0	0
Recycled or wastewater use (typically from another industry) in litres	0	0

Noise (from construction and future operation)

Georgiou controls construction noise through the use of multiple measures as specified within the EMP. Measures include required Personal Protective Equipment (PPE) for personnel within close proximity to works, fitting plant with noise emitting control equipment, and reducing line-of-sight noise transmission using temporary barriers between residents, where applicable. The following noise management objectives were implemented during construction:

- Ensure the amenity of adjacent residential areas is not significantly impacted by either noise from construction or operation of the highway; and
- Ensure all due care is taken in construction activities to prevent damage and nuisance to adjacent residences, public utilities, structures, and buildings resulting from construction vibration.

The Project team has considered surrounding residents and potential impacts to community of out of hours works for the entirety of the construction program. Various communications are arranged with key stakeholders to ensure as much notice as possible is given. Associated traffic management during works are optimally structured as to avoid events and raised issues. A Construction Noise and Vibration Management Plan (CNVMP) is submitted to the Local Government Authority for approval for all out-of-hours works.

Air Quality

Air quality and dust is managed on the Project under a Sub-Plan of the EMP. This sub-plan endeavours to mitigate all construction-related air quality and dust impacts. Objectives related to air quality include:

- Ensuring new cut and fill embankments are rapidly stabilised, and are not subject to excessive wind or water erosion;
- Minimising the impacts on local air quality, and the nuisance aspects from windblown sand and dust; and
- Ensuring all construction plant, equipment, facilities and activities are designed and operated to minimise the emission of smoke, dust and other air pollutants into the atmosphere.

All employees have a responsibility to efficiently manage air quality and dust risks and uphold the controls in place within the EMP. As part of the site induction, workers are informed of the site-specific controls required for air quality and dust management. Environmental hazard inspections are completed weekly on the Project during construction and contain the visual inspection and monitoring of air pollutants and controls.

Case Study – Use of Crushed Recycled Concrete (CRC)

CRC was used by the Project as a subbase material substitute for standard limestone subbase, under deep lift asphalt only (Image 1). CRC achieves the same pavement properties as limestone subbase resulting in a conforming MRWA pavement product and the re-use of waste product.

Construction and demolition (C&D) waste makes up around half of Western Australia's waste stream (Waste Authority, 2019). The use of CRC enabled the Project to recover C&D waste, reduce landfill volumes and greenhouse gas emissions. CRC is one of MRWA's targeted C&D materials for re-use within the Waste Avoidance and Resource Recovery Strategy 2030 (Waste Authority, 2019).

A total of approximately 4,189.5 tonnes of CRC subbase has been used on the Project, 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).

Image 1: CRC under FDA during construction

Economic Aspects Performance

At a glance

Table 4: Project economic aspect(s) performance to date

Economic Aspect	Year to 30 June	Total for Project
Funding	$12M	$28.7M
No. of vehicles per day	20,000	20,000
Travel Time Saving	N/A	N/A
Increase of vehicle capacity	N/A	N/A
Increase in cycling and pedestrian facilities (i.e. increase in PSP length)	N/A	1,469m maintained and rebuilt
Workforce and Supply Chain		
Number of people employed by supply chain at various stages of project	753	1,526
Total number of suppliers engaged	30	79
Total number of Indigenous Enterprise	1	10
Total number of Disability Enterprise	Nil	Nil
Buy Local Spend (to date)^	$12M	$24M

^*assuming within 20km of the Project*

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.

The Project facilitates 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.

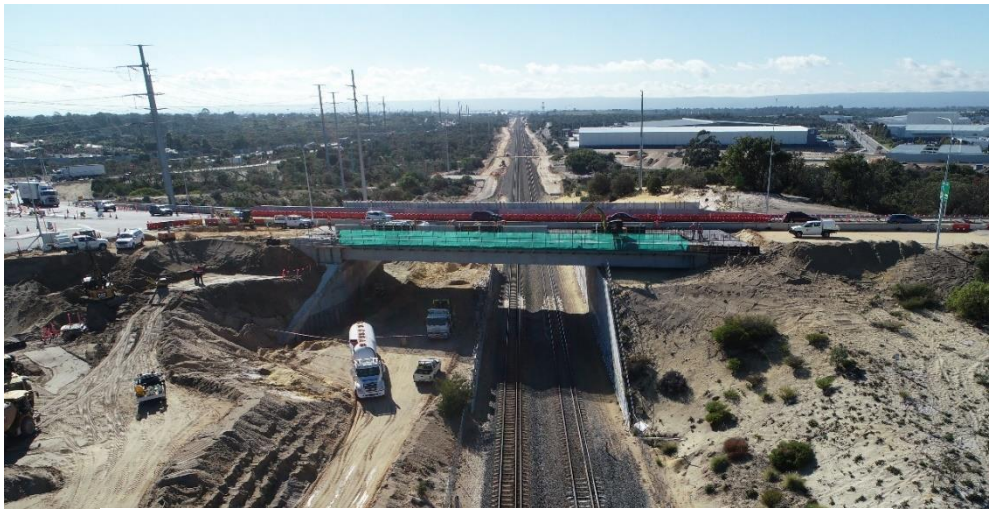

Image 2: Rail bridge expansion during construction

The Project staging and communications are targeted to minimise disruption to community and local businesses. Most disruptions associated with the Project and its stakeholders revolve around traffic flow and congestion. A careful stages approach ensured that disruptions to traffic and impacts on local road users were kept to a minimum, while maintaining a high level of safety at all times. During all stages of construction, access is maintained to facilities. In events where construction activities are near 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:

- MRWA;
- City of Cockburn;
- City of Melville; and
- Perth Transport Authority.

Full list of stakeholders is listed within Appendix 3.

Key Economic Outcomes

The State and Federal Governments have allocated $28.7 million for this Project. The Project has resulted in a workforce of more than 1,000 personnel on site during the entirety of construction. 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.

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.

Georgiou demonstrates its commitment to Indigenous participation within its Indigenous Relations Policy and company Reconciliation Action Plan (RAP). Commitment and accountability for the policy and plan stems down from the executive team to all Georgiou employees. Project targets to facilitate Aboriginal participation are listed within table 5 below.

Table 5: Workforce targets

Workforce Aspect	Target	Performance to Date
Indigenous Business Procurement	2%	2%
Indigenous Employment	10%	7%

Further information is available at the link below: https://www.georgiou.com.au/responsibility/

Climate Change Assessments

The Project undertook a Climate Change Risk Workshop in April 2020 involving the identification and treatment of current and future climate change risks. Attendees included key Project stakeholders and a multidisciplinary representation of the Project team. Projected risks were based on Representative Concentration Pathway (RCP) 8.5 across two timeframes, 2030 and 2090. The risk assessment undertaken is informed by best available climate change analysis which addresses the region in which the asset is located, and the asset's forecast useful life. Climate variables mapped within the risk assessment (across 2030 and 2090) included:

- Air temperature
- Humidity
- Sea surface temperature
- Precipitation
- Sea level rise
- Wind and hail
- Bushfire
- Coastal inundation
- Cyclones/storms
- Flooding
- Heatwave, and
- Drought.

Projections to be mitigated against were considered against the Project's individual components and their respective design life (years). With completion of this risk workshop, the Project aspires to build resilient infrastructure that accounts for the projected climate change variables and associated risks to the Project.

Sustainable Transport

Cyclists and pedestrians took a keen interest in the Project, as Principal Shared Paths (PSPs) have been constructed around the Karel Avenue and Roe Highway interchange as part of Project works. The Project itself is supporting the growth of sustainable transport within Jandakot and surrounds, through greater accessibility for pedestrians and cyclists (refer to Figure 2) and the development of the public transport network. Through extension of the bridge across the freight railway line, the Project is facilitating construction of the Thornlie-Cockburn Link as part of METRONET (Image 2).

After having to use detours during construction, cyclists and pedestrians welcomed the enhanced experience provided by new PSPs. Cyclist and pedestrian experiences have been enhanced due to the increase in seamless connectivity between the Kwinana Freeway and Roe Highway PSPs via the new Karel Avenue underpass.

Image 3: Karel Avenue underpass to Kwinana Freeway PSP

Social Aspects Performance

At a glance

Table 6: Social aspect(s) performance for the Project to date

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`	2,400	2,600
No. of complaints	32	80
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	4	10
% of women in workforce*	5%	5%
% indigenous in workforce*	6%	5%
LTIFR	0	0
No. of development employees and apprentices on the project*	16	36
No. of employees (FTEs) sourced from local community	0	0

**includes Georgiou employees and subcontractors.*
^no community satisfaction surveys have been undertaken by Georgiou or MRWA.
`includes all individual CONNECT cases.

Social context

Engaging and consulting the community and Project stakeholders (Appendix 3) is key to the success of the Project. Georgiou has worked 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. The Project was governed to improve overall traffic flow and safety for road users, heavy vehicles, and pedestrians. The Project area is within one kilometre of commercial and industrial business in the Jandakot area, and encompasses the main thoroughfare for heavy vehicles to access Roe Highway. Road safety improvements as a result of this Project are integral to managing the high volume of heavy vehicles accessing this interchange, and supporting the development of the Jandakot Airport precinct.

Image 4: Aerial view of Berrigan Drive roundabout during construction

Karel Avenue between Roe Highway and Farrington Road has a new look to complement the widening works. Hard and soft landscaping including trees, grass, median strips and paving has been completed. Landscaping has also been completed in the centre of new roundabouts, including a

feature native eucalypt planted within a bed of stone and organic mulch at the Berrigan Drive roundabout (Image 4). A similar design has been implemented at the two other roundabouts either side of the Roe Highway bridge, providing a striking aesthetic and visual cue for aircrafts using the adjacent Jandakot Airport.

A path off Karel Avenue has also been constructed to enable moped riders and other small vehicles prohibited on Roe Highway to make a turn and choose another route.

Community & Stakeholder Engagement

Georgiou's approach to engagement is based on the International Association of Public Participation (IAP2) Consultation Spectrum and MRWA's Strategy and Communications Directorate protocols. The community is provided appropriate, accurate and timely information of Project-related operations and issues, through mechanisms as per the Community and Stakeholder Engagement Management Plan (CSEMP). The Project engages with the community through direct correspondence advising of construction updates including traffic impacts, road closures, after hours works, and any major events using the monthly construction and roadworks updates. Project updates are shared on MRWA communication channels and the MRWA call centre number is included in all public notices. Stakeholders are able to contact around the clock to ask questions, report problems and/or raise issues. All cases created from these calls are recorded and investigated by the Project's Community Stakeholder Advisor, with direct input from the construction team onsite.

In addition to these regular updates, the Project communicated major road closures and restricted traffic movements to a wide area. An example of this when Karel Avenue had to be closed to facilitate placement of the large beams for the bridges across Roe Highway and the railway line. Prior to this event more than 2,000 notices were distributed across all adjoining suburbs. These notices were delivered to to both the management and individual tenants of the Jandakot industrial estate. These notices were hand delivered several times in the lead-up to the closures and emailed to stakeholders on the Project database to ensure as many road users as possible were informed. As a result, the Project received minimal queries.

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 information to the stakeholders to advise the local community of the various impacts using the stakeholders' own communication method. Information about the Project is regularly shared on stakeholders' social media platforms.

Image 5: Visual of Bridge over rail, and residential area in the background.

Addressing community concerns

The overarching strategies of the CSEMP include ensuring community and stakeholder concerns are considered, communicating to community and stakeholders the rationale of decisions made. The Project is to ensure all community and stakeholders' concerns in regards to the impacts of the construction program are addressed. A public feedback register is maintained for the duration of the Project, and all concerns are responded to via the CONNECT reporting system. This process tracks the timeframes taken by the Project to resolve community concerns, with the Project aiming to provide an initial response within 24 hours.

In addition to calls and emails directed via MRWA, additional stakeholder contact included meetings between Georgiou's Stakeholder Advisor and residents through scheduled home visits and doorknocks. For example, during a partial closure of the Karel Avenue roundabout, extra traffic was experienced in Dimond Court, a nearby residential cul-de-sac, due to some drivers not heeding detour signs and using the this road to make U-turns. The Community Stakeholder Advisor undertook targeted communication and met residents who provided feedback on driver behaviour. As a result, extra signage was installed to leviate potential disruptions.

The Project has implemented several changes within design development to address community and stakeholder concerns. 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. This new U-turn aims to improves safety and congestion on right-turn traffic movements from Dimond Court.

Traffic Management / Community Safety

A Project Traffic Management Plan (TMP) has been implemented to ensure the risks associated with works within proximity to traffic, and temporary traffic management, are appropriately managed. The objectives of the TMP are to meet the specific requirements of contract documentation and as far as practicable define planning criteria which will:

- Enable management of potential adverse impacts on traffic flows to ensure network performance is maintained at a level prescribed in the SWTC.

- Provide protection to workers, visitors, agents of the Principal and the general public from traffic hazards that may arise as a result of the construction activity.
- Prevent adverse impacts to users of the road reserve and adjacent properties and facilities to be minimised.

In order to meet these objectives, the TMP required site specific Traffic Control Plans (TCP) and Temporary Road Designs (TRD) to be prepared during the course of the Project and incorporate the following:

- Provision of sufficient numbers of traffic lanes to accommodate vehicle volumes throughout all hours over the life of the Project
- Ensuring that the swept path of all vehicle classes is accommodated at relocated lanes
- Ensure minimal increase to journey times when compared with pre-commencement conditions.

Workforce Safety

The Project has a Health and Safety Management Plan, applying to all activities undertaken by staff and subcontractors delivering the Project.

The Project records lead and lag health, safety and environmental statistics and, to date, has had only first-aid injuries with no medical treatment or Lost Time Injury injuries. Injuries and diseases the workforce is 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 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, no dewatering activities have been 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 Biodiversity Conservation Act 2016 (WA) 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 Biodiversity Conservation Act 2016 (WA) 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 a preconstruction desktop analysis.

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, 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 achieving sustainable growth by managing its operations to positively influence environmental, economic and social outcomes.

In order to achieve this commitment, Georgiou will:

- apply innovation, lifecycle thinking and effective planning to drive sustainable performance;
- be ethically responsible in managing project construction, materials procurement and companies employed;
- build long-term relationships with communities and stakeholders;
- support the workforce in being diverse, engaged, motivated and competent;
- engage with supply chain to achieve project sustainability objectives and targets;
- value a culture based on leadership, inclusiveness and personal development;
- facilitate the sharing of ideas, knowledge and innovation within the business and stakeholders;
- manage and minimise all environmental impacts;
- implement risk and hazard management principles to maintain the health and safety of its people, the surrounding community and the environment;
- create long-term sustainable outcomes for our clients aligned to their objectives; and
- deliver sustainable profitable growth while satisfying social, legal and contractual obligations.

All employees, and persons who work with Georgiou, have a personal responsibility for implementing this Policy.

SAFETY | PROFIT | RELATIONSHIPS | PEOPLE | INNOVATION

Rob Monaci
Chief Executive Officer
Georgiou Group
September 2020

Appendix 5 – Black Cockatoo foraging habitats

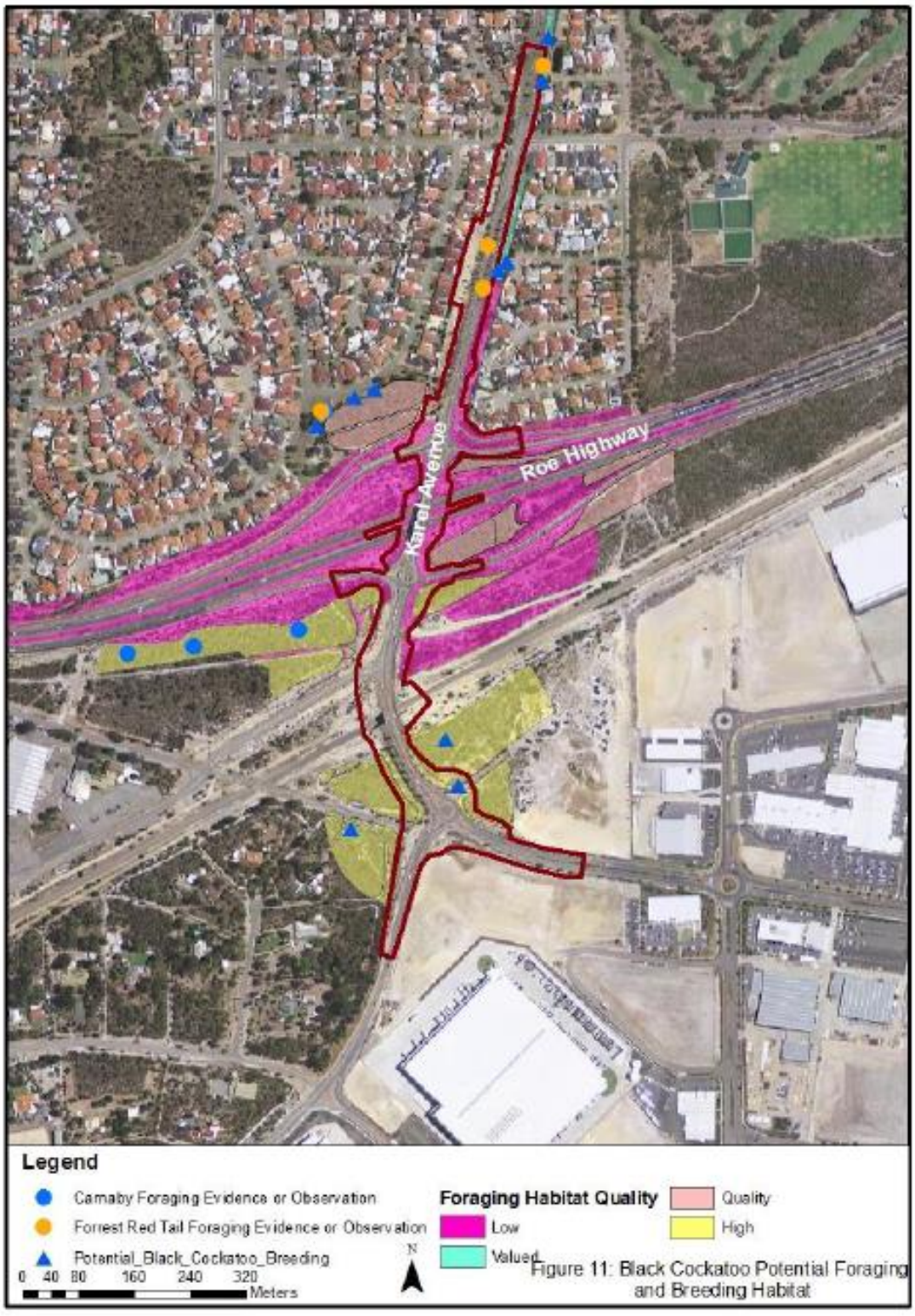

Figure 11: Black Cockatoo Potential Foraging and Breeding Habitat

Appendix 6 – Reference list

Department of Water and Environmental Regulation (DWER) (2020). Groundwater Proclaimed Areas March 2020. https://www.water.wa.gov.au/__data/assets/pdf_file/0019/1675/86307.pdf

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Waste Authority (2019). *Strategic Direction Waste Avoidance and Resource Recover Strategy 2030 (Western Australia's Waste Strategy).*