MRWA Contract 59/17

Roe Highway / Kalamunda Road Interchange –

Annual Sustainability Report 2019-2020

FOR/ Main Roads Western Australia

BY/ Georgiou Group

ON BEHALF OF / Georgiou Group

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Australian Government

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Roe Highway/Kalamunda Road Interchange: Annual Project Sustainability Report 2020

Prepared by Georgiou Group

Georgiou

This annual report covers the period from 1 July 2019 – 30 June 2020.

The Project's Sustainability Lead can be contacted via melissa.arias@georgiou.com.au

About this Report

This report has been prepared by the Roe Highway / Kalamunda Road Interchange (herein 'the Project') project team on behalf of Main Roads Western Australia. This report forms part of Main Roads' annual sustainability reporting which is integrated into its Annual Report. The report content is prepared in accordance with Global Reporting Initiative (GRI) principles.

Figure 1: Concept Plan

Introduction

Roe Highway is part of a key road corridor linking Kwinana Freeway to Great Northern Highway, providing access to the Kewdale, Hazelmere and Canning Vale industrial areas. Kalamunda Road is one of the last remaining signalised intersections on Roe Highway.

The Project will introduce a grade separated interchange at the existing Roe Highway / Kalamunda Road intersection with the following benefits anticipated:

- reduce commuter congestion;
- improve road safety by enabling Roe Highway through traffic to flow freely;
- improve access and reduce journey times in Perth's eastern suburbs; and
- enhance the efficiency and reliability of freight movement.

Georgiou has been appointed as the Main Contractor to deliver the project on behalf of Main Roads. The project involves the investigation, design and construction required to construct a grade separated interchange at Roe Highway and Kalamunda Road and surrounding road improvements.

Infrastructure encompasses a commitment to society and when delivered sustainably, can provide positive long-term solutions that enhance the local community, environment and economy. Georgiou commits 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 recognises the importance of integrating sustainable development with the delivery of infrastructure and is committed to applying sustainability principles to everything they do. To achieve this, the Project has adopted the Georgiou Corporate Sustainability Policy and consideration of the MRWA Corporate Sustainability Policy, providing a framework for the sustainability objectives set for the Project and a commitment to facilitating net positive outcomes for society and the environment.

Additionally, the Project has developed a Sustainability Management Plan (SMP) that outlines the integration of sustainability throughout the design and construction of the project, and application of the Infrastructure Sustainability (IS) V2.0 Design & As-Built Rating Tool targeted sustainability outcomes and requirements. Application of the IS V2.0 rating scheme allows the Project to pursue sustainability objectives relevant to and exceeding industry aspirations, alongside a global commitment to pursuing the targets set out in the United Nations Sustainable Development Goals (SDGs) towards sustainable development.

The SMP guides how the Project is planned and managed through delivery, taking into account sustainability risks and opportunities identified within the IS materiality assessment conducted at the commencement of the Project and specifically addresses client, contractual, legislation and other obligations and targets. This includes sustainability initiatives adopted or abandoned by the Project, assessed against sustainability criteria and progression of the IS V2.0 credit targets. Completion of the Project's preliminary IS V2.0 scorecard SDG materiality assessment identified the most important (material) sustainability issues for this infrastructure project, using the IS Rating Tool framework, adjusting the value of certain items within the IS rating tool to best reflect the project's context. The top sustainability aspects identified and prioritised for the project, include:

- resource efficiency / material use (reducing or reusing);
- contamination remediation material;
- energy efficiency; and
- water usage.

These items were identified to be of significance to the Project, as result of assessment of potential impact on the Project itself, as well as the Project's impact on its surrounding urban environment, considering such aspects as:

- quality;
- durability;
- social integration such as employment;
- environment impacts;
- commercial – upfront and whole of life costs/savings;
- safety; and
- public functionality.

Highlights

Legacy - Poison Gully

The Project recognises the important waterway and wildlife corridor, Poison Gully, prevalent within the Project's surrounding environment. Management techniques and educational methods to ensure the protection of this area have been implemented and all controls as outlined within the Project's Environmental Management Plan have been implemented to date, with no reported incidents in relation to this area. The Project has committed to minimising potential for water pollution entering Poison Gully and incorporated extensive stone-pitching and ground shaping within the area.

Sustainable Procurement

Georgiou is committed to achieving the adopted objectives of increasing employment opportunities for Indigenous and Torres Strait Islander persons and increasing Indigenous business participation throughout the Project's duration. On the Project, works and/or services to a value of at least 2% of the contract sum are to be undertaken by Indigenous businesses and at least 10% of the total hours are to be undertaken by Indigenous persons. Georgiou demonstrates its commitment to Indigenous participation and the Project's targets within its Indigenous Relations Policy and Reconciliation Action Plan (RAP).

Contamination Remediation Material

The old Roe Highway alignment is underlain with Coal Tar Stabilised Limestone (CTSL), which is made up of a number of contaminants of potential concern, including a number of hydrocarbons. The Project had to consider a wide range of remediation options during the evaluation stage, with particular focus on human health, sustainability and impacts to the environment. Working in strict accordance with a Site Management Plan for Coal Tar Remediation, created by Georgiou and approved by the Department of Water and Environmental Regulation (DWER) and Department of Health (DEH), the Project has been able to reuse this material on site and mitigate the material ending up in landfill.

Public Shared Path (PSP)

The Project will enable greater connectivity within the community, through the delivery of a new PSP. Running approximately 3.5km, the PSP is connecting Berkshire Road in the south and Kalamunda Road in the north. The Project team has enabled roughly 50% of the new PSP to be completed and made accessible to the public ahead of overall project completion.

Resource Efficiency

Georgiou is committed to integrating resource efficiency and the sustainable use of all resources with the delivery of this Project. Minimising the use of virgin material and the volume of waste produced by the Project has been a key driving force throughout the planning and development phase, right through to the ongoing management of materials during construction. With consideration of circular economy objectives, the Project has implemented resource efficiency targets including a recycling target of at least 60% of waste diverted from landfill.

Figure 2: Key Sustainability Metrics

Overview

The Project involves construction of a grade-separated intersection, removing one of the last signalised intersections on Roe Highway, with works due for completion in early 2021. The Project ultimately seeks to improve road safety, traffic flow and create a more efficient freight route.

The 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 State and Federal governments have allocated $86 million for this project.

Scope of Works

This Annual Sustainability Report has been prepared for the Project. The Project Works include the following:

- reconstruction of Roe Highway for approximately 2.5km to the east of the current alignment for project case concept, grade separated from Kalamunda Road;
- construction of earthworks in project case, for provision for ultimate project scope;
- realignment and construction of approximately 750m, of dual lanes of Kalamunda Road, grade separated from Roe Highway;
- reconstruction of access to Hillview Public Golf Course and Maida Vale Shopping Centre;
- construction of Principal Shared Path from Maida Vale Road to the southbound exit ramp;
- relocation of in ground utility infrastructure; and
- shared path construction from Maida Vale Road to Berkshire Road.

Environmental Setting

The project area is located on the intersection of Roe Highway and Kalamunda Road, in High Wycombe within the Shire of Kalamunda. The project area extends 2.5km along Roe Highway. The project occurs within a groundwater protection area and in the event of groundwater extraction, a license to take water is required.

The project requires referral to the DoEE, as the project will require clearing of up to 7.38 ha of Carnaby foraging habitat, and 188 potential breeding trees, none of which contain a hollow suitable for Carnaby Cockatoo use.

Figure 3: Project Aerial View

Residential properties are situated to both the east and west of the intersection. The adjoining residential properties will potentially be subjected to noise, dust and vibration created by construction activities. The Hillview Golf Course is located on the north eastern side of the work area. As such, management measures have been outlined to control these potential impacts as described in the management sub-plans of this EMP.

Perth has a Mediterranean climate. This means summers are generally hot and dry, lasting from December to late March, with February generally being the hottest month of the year, while winters are relatively mild and wet. Summer is not completely devoid of rain with sporadic rainfall in the form of short-lived thunderstorms.

Additional Reading

- https://project.mainroads.wa.gov.au/home/current/Pages/roekalamunda.aspx
- https://www.georgiou.com.au/responsibility/sustainability/#1591848921185-82e381e1-0df8
- https://www.georgiou.com.au/project/roe-highway-and-kalamunda-road-interchange/

Overall approach to Sustainability

Sustainability Policy

Georgiou's Corporate Sustainability Policy commits the organisation to promoting a culture of sustainability across all operations and minimising environmental and social impacts 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; and
- delivering sustainable profits without compromising social, legal or contractual obligations.

Refer to Appendix 4 to view the Policy, or visit the below link for more on Georgiou's sustainability commitment.

https://www.georgiou.com.au/wp-content/uploads/2018/10/Georgiou-Policies-RM-update-Aug-2018-Sustainability.pdf

Sustainability Management Plan (SMP)

A SMP has been developed for the Project which sets out to describe how Georgiou will deliver on the sustainability aspects of the Project. The SMP provides an outline of how the Infrastructure Sustainability (IS) V2.0 Rating Scheme will be integrated throughout the design and construction of the Project to achieve the targeted sustainability outcomes and the requirements of the SWTC.

The development of this SMP has taken into account the material sustainability risks and opportunities identified in the IS materiality workshop, conducted at the commencement of design for the Project and specifically addresses client, contractual and sustainability obligations.

Achieving sustainable outcomes and delivering on sustainability obligations is a core responsibility of all participants on the Project. The SMP works in conjunction with Georgiou's Project Management Plan and interfaces other management plans including the planning, design, procurement, construction, health and safety, community and stakeholder, and environment management documents.

Infrastructure Sustainability

The IS V2.0 Rating Framework (Design and As-Built) is being applied to assess the level of sustainable practice embedded within the Project works throughout design and construction.

Evidence shall be progressively compiled throughout the duration of the Project to demonstrate performance against the targeted IS credits and the achievement of an overall IS rating score of at least 50 points. IS targets were established utilising an IS V2.0 preliminary materiality assessment and taking into consideration the minimum performance targets and levels nominated by MR. Completion of this assessment identified the most important (material) sustainability issues for this infrastructure project, adjusting the value of certain items within the IS rating tool to best reflect the projects context. The below IS targets received high materiality scores:

- Env-1 Receiving Water Quality
- Env-4 Air Quality
- Res-2 Climate and Natural Hazards Risks
- Env-2 Noise
- Wfs-3 Workforce Culture and Wellbeing
- Env-3 Vibration
- Env-5 Light Pollution
- Rso-2 Contamination Remediation Material

Environmental Aspects Performance

At a glance

Table 2: Environmental Statistics

Aspect	Year to 30 June	Total for Project
Actual clearing to date (ha)	8.78	8.78
Rehabilitation/revegetation planned (ha)	0	180
Respread of Topsoil (m^2)	10, 000	10, 000
Mulch Reused on Site planned (m^2 spread)	0	26, 000
Actual rehabilitation/revegetation to date (ha)	0	0
Total Water Consumption to date (kL)	25, 851	25, 851
Total water licence allowance (kL)	65, 000	195, 000
Diesel Burned to date (litres)	294, 593.1	294, 593.1
Total waste generated by project – through the use of comingled bins (t)	12	12

Environmental context

The below is a list of the natural environment and values the Project interfaces with;

- The Project had potential to cause indirect impacts on Black Cockatoo habitat adjacent and in the vicinity of the development envelope. Of note is Hawkesvale Reserve, located adjacent to the north-west end of the development envelope. This site is Bush Forever site 122 and a Class A conservation reserve managed by DBCA. The development envelope avoids the remnant vegetation within the road reserve, adjacent to Hawkesvale Reserve, which substantially reduces the potential construction impact interface with the reserve and maintains the highway vehicle activity at the same distance from the reserve.

- Poison Gully runs parallel to the Roe Highway and intersects the Principal Shared Pathway that the Project has constructed. Poison Gully has water that is seasonally available and is dry for much of the year. All controls as outlined within the Project's Environmental Management Plan have been implemented to date with no reported incidents in relation to this area.

- The Project is currently drawing groundwater for construction purposes in line with the Project's License to Take Water and License to Construct/Alter a Well. The majority of the Project is underlain by groundwater that sits approximately 26m below current ground level.

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). The EMP describes 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 Georgiou, Main Roads and project 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. The development of the Management Plan has been based upon the risks and opportunities identified, and specifically addresses client, contractual, legal and other obligations.

Objectives and targets have been set for the Project 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 Project 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.

The objectives of risk assessment are to:

- identify activities, events or outcomes that have the potential to adversely affect the local environment and/or human health/property;
- qualitatively evaluate and categorise each risk item;
- assess whether risk issues can be managed by environmental protection measures; and
- qualitatively evaluate residual risk with implementation of measures.

Risk assessments for the Project are based on AS/NZS 4360:1999, the Australian standard for risk assessments.

Water Management

Water Management is outlined within the projects formally approved EMP. The EMP includes a Water Management Sub Plan, outlining 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 seeks to reduce the amount of potable water used and groundwater extracted over the lifetime of the Project. A major source of water usage is through the need for dust suppression, and Georgiou has implemented the use of DustX (dust suppressant) on the Project in lieu of using groundwater. DustX has been applied to an area of approximately 27, 000m^3 to date. It has been estimated by applying this generous amount of DustX to this area, the Project has saved approximately 2,000 kilolitres of groundwater.

Table 3: Water Usage

Source	**Year to 30 June**	**Total for Project**
Water purchased from the scheme in litres	456, 000	456, 000
Water pumped from bores in litres	25,395,000	25,395,000
Water pumped from rivers, lakes or harvested in litres	0	0
Recycled or waste water use (typically from another industry) in litres	0	0

Materials & Recycling

The Project tracks all waste (landfill) and recycling generated by the Project over the construction period. Aligned with our commitment to resource efficiency, a waste recycling target of 60% was set for the Project. The main method for disposal is the use of designated waste and recycling bins on site with comingled waste bins being collected by a subcontractor and a monthly report is generated to provide recycling and waste streams as well as tonnages for both recycling and waste. To date, the Project has exceeded its 60% diversion from landfill target. The waste reports generated clearly

show the streams (e.g. general waste, concrete etc.). This allows Georgiou to target activities on the Project as it allows for greater transparency to further reduce the amount of wastage on the Project.

Figure 3: Waste & Recycling

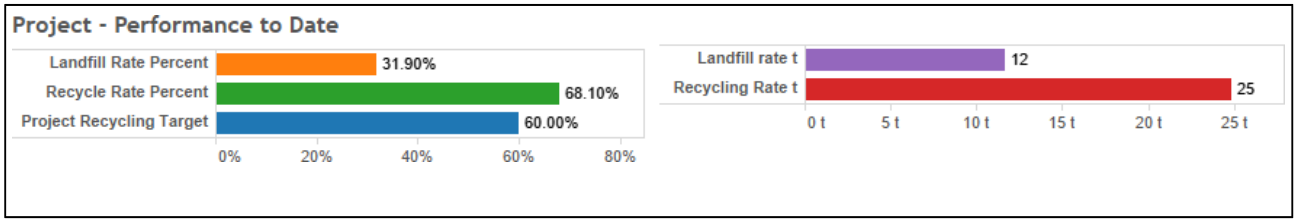

Table 4: Imported Materials

Imported Materials	**Year to 30 June**	**Total for Project**
Sand (t)	253083	253083
Crushed Rock (t)	20652	20652
Aggregate (t)	200	200
Asphalt (t)	5176	5176
Concrete (t)	5371	5371
Steel (t)	429	429
Precast concrete (t)	1431	1431
Emulsion (t)	7.9	7.9
Bitumen cutter (t)	8.2	8.2
Bitumen (t)	5.7	5.7
Paint (t)	0.3	0.3
Other (t)	N/A	N/A

Table 5: Waste to Landfill

Waste to Landfill	**Year to 30 June**	**Total for Project**
Unsuitable material (t)	0	0
Existing seal / asphalt (t)	0	0
Roadside litter / municipal solid waste (t)	N/A	N/A

Commercial / industrial waste (t)	0	0
Green waste (t)	TBC	TBC
Concrete / kerbing (t)	300	300
Construction / demolition waste (t)	0	0
Contaminated material (t)	0	0
Asbestos (t)	1328	1328
General/Green Waste (t)	27	27
Other	456kL – Sewage	456kL – Sewage

Table 6: Waste Recycled

Waste Recycled	**Year to 30 June**	**Total for Project**
Sand (t)	253,083	253,083
Road base (t)	6,820	6,820
Asphalt (t)	2,450	2,450
General waste (site office / roadside litter) (t)	37.5	37.5
Steel (t)	80	80
Concrete (t)	450	450
Green waste / mulch (t)	9,000	9,000
Plastic (t)	0	0
Other (t)	0	0

Table 7: Recycled Materials

Imported recycled content	**Year to 30 June**	**Total for Project**
Sand (t)	0	0
Crumbed Rubber (t)	0	0
Recycled asphalt (t)	704 t	704 t
Limestone (t)	0	0

Other (t)	1,165 t – Drainage rock 3,482 t – Recycled road base	1,165 t – Drainage rock 3,482 t – Recycled road base

Noise (from construction and future operation)

The Project is bounded by sensitive receptors in all directions, with residential properties to the West, South and East of the Project. The Hillview Golf Course is also to the east of the Project and is particularly sensitive to environmental emissions from the Project.

Due to the high traffic count of Roe Highway and the Project aiming to reduce added congestion due to construction works, many activities to date have been scheduled and executed during 'out of hours' operations. The Project submits monthly Noise and Vibration Plans (NVMP) to the Local Governing Authority (City of Kalamunda). On approval, the plans are also made available to MRWA for publication on its website for public reference. The monthly NVMP's set out how the Project will manage noise and vibration during out of hours works activities as to best ensure that noise caused by construction activities impacts on adjoining sensitive receptors as much as is practicable.

As part of this approval process, the Project has been notifying residents of upcoming out of hours activities no later than 48 hours prior to the beginning of works.

The below sub-plan is indicative of noise control measures when working out of hours (demonstration purposes only);

Table 8: Noise Management Sub-Plan

Noise Management Plan			Responsibility
Objectives & Targets		▪ Refer to the Site HSE Objectives & Targets Document	Project Manager
Performance Criteria		100% Compliance with Client & legal requirements 100% achievement with Project Objectives & targets	Project Manager
Mitigation Measures	General	▪ Compaction activities that have the potential to impact external stakeholders shall consider: - Letter drops to local residents (following agreement with Client) - Pre & During Construction noise monitoring where required - Perimeter fencing will have contact details of the person responsible for the site	Project Manager
	Training and Competency	▪ Workers will be informed of the Site specific controls required for noise management including: - Choice of plant and equipment - Efficient use of plant and equipment - Use of monitoring equipment (as required)	Project Manager
	Hours of Operation	▪ Any out of hours work required will be carried out in accordance with (Local Governing Authority) requirements.	Project Manager
	Out of hours Noise Mitigation measures	Georgiou will implement the following controls where deemed necessary, these include; - Practical Engineering Controls - Maximizing the distance between operating equipment and sensitive receptors, ▪ Plant will be switched off when not in use, ▪ Monitoring noise levels for out-of-hours work near sensitive receptors if required, ▪ Work will be scheduled away from sensitive receptors as much as reasonably possible ▪ Undertake effective community consultation where there is a need to undertake work out of hours,	Project Manager

		▪ All plant, equipment and vehicles are to be regularly monitored and maintained and records kept of maintenance, ▪ Use of non-tonal reversing beepers (broadband based) ▪ Providing respite periods where possible, ▪ Engine covers will be kept closed when the item is in use, and ▪ Any abnormalities in expected noise emissions will be recorded in the plant's daily prestart and reported to the plant department to be corrected. In addition Georgiou may implement following measures to control the spread of noise from site where required. ▪ Increasing the distance between noise sources and sensitive receptors where practical.	
	Minimising the spread of noise	▪ Typical construction activities are capable of producing noise and Georgiou where possible will minimise the effects of the noise where possible ▪ In addition to this Georgiou will assess the risk of excessive noise as part of the risk identification process prior to start of all the activities and implement appropriate controls.	Project Manager
	Light pollution	▪ All lighting towers will be set up in a manner, which directs light away from residential properties where practically possible.	Supervisor
	Monitoring	▪ Noise monitoring may be completed work near sensitive receptors (residential properties) pre construction and during construction on an as required basis.	Project Engineer
Environmental Inspections & Monitoring	Monthly (Documented)	▪ An Environmental Inspections will be completed via 'Beakon Forms' (Georgiou internal inspection system)	HSE Advisor
Reporting	HSEQ Monthly Management Meeting		Project Manager

Discharges & Spills

Unplanned discharges and hydrocarbon spills have the potential to contaminate the immediate area of the spill and have the potential to impact on a wider area if the spill is able to get into waterways and drainage (storm water drainage). Georgiou manages all spills and unauthorised discharges in line with the Project's EMP and Emergency Response Plan.

Contaminated water and all other hazardous substances will not be discharged into the environment. In the event that the Project is directed to discharge contaminated water or other hazardous substances, the Project Manager will obtain documented evidence that approval has been obtained from the local council or environmental department before discharging contaminated water or hazardous substances into the environment.

The accidental release of contaminated water or hazardous substances will be immediately contained, cleaned up and, if required, the affected area remediated. The incident will be reported to the Project Manager and client. If required, the relevant State Regulatory Body will be notified.

Vibration

Similar to noise, all out of hours vibration generated through construction activities is managed through an approved NVMP. There is a contractual requirement to adhere to a limit of 5mm/s. To adhere to this strict threshold, Georgiou is currently using a 'Saros Roving Unit' to collect real time data.

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 vibration monitoring is as effective as possible and is 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.
- The use of vibration monitoring equipment in the way of Portable Saros Roving Units (SRU's).
- 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.

Light spill

Light spill can be an issue for adjoining sensitive receptors. In the case of the Project this is residential properties within close proximity to the works. Light spill is generally not an issue on the western side of Roe Highway due to a previously constructed noise wall (Gateway WA).

On setting up lighting towers for night shift, consideration is given to the direction of the towers as to not be pointed directly at residential properties.

Acid Sulphate Soils

An inspection of the online Acid Sulphate Soil Risk Map on the Department of Water and Environmental Regulation website indicates that the Roe Highway/Kalamunda Road Interchange lies in an area with "moderate to low ASS disturbance risk". There is a low likelihood of encountering ASS/PASS at this interchange based on the expected material types and the groundwater levels (very unlikely to encounter groundwater over the lifetime of the project).

In the event that ASS is identified on site, a detailed Acid Sulphate Soils and Dewatering Management Plan will be developed.

Dust

Large infrastructure projects like this Project have the potential to generate dust. Dust has the ability to cause health issues within the community, impact flora and fauna and cause visual disturbances. To date, Georgiou has implemented all dust control measures as outlined within the EMP, that being (not limited to):

- dust/wind fencing;
- dust monitoring equipment;
- the use of water carts;
- application of DustX to open areas; and
- cessation of works in adverse weather conditions.

The Project has engaged a suitably qualified specialist to set up and maintain a dust monitoring station on site. The specialist engaged provided Georgiou with a weekly report outlining dust levels on the Project. The dust monitoring station location is revised as per the upcoming scheduling of works as to best capture dust being generated on site.

Clearing

Clearing activities are a significant environmental risk for the Project that require careful planning and stringent controls to ensure that no over-clearing occurs due to the sensitive nature of the works. The majority of clearing on the Project has been completed to date in strict accordance with MRWA-issued clearing permits. No over-clearing or incidents involving clearing activities have been recorded on the Project.

The Project has been and will continue to implement the following measures to mitigate risks in regards to clearing (not limited to):

- implementation of tree protection zones, within the drip line of retained tree canopies;
- the pruning of trees has been undertaken in a way that they are to be protected, it will be done by suitably qualified personnel only. Where branches are trimmed an assessment of the trees ability to survive should be conducted by a suitably qualified person and adequate area around the tree in accordance with AS4970:2009 Protection of trees of development sites; and

- clearing has been done in accordance with: Clearing Permit CPS 8219/2 amended under s.51K of the *Environmental Protection Act 1986 (*EP Act), CPS 8296/1 and EPBC Approval 2018/8316 and CPS 8212/2 replaces Clearing Permit CPS 8219/1.

Contaminated sites

According to DWER Contaminated Sites Database mapping, there are no known contaminated sites within the Project footprint of the immediate surrounding area. As such, this has been scoped out.

Economic Aspects Performance

At a glance

Table 9: Economic Statistics

Economic Aspect	**Year to 30 June**	**Total for Project**
Funding	$86 million	$86 million
No. of vehicles per day	45,000 (Roe) 15,000 (Kalamunda)	45,000 (Roe) 15,000 (Kalamunda)
Travel Time Saving	N/A	N/A
Increase of vehicle capacity	N/A	No change in project case, design allows for future growth
Increase in cycling and pedestrian facilities (i.e. increase in PSP length)	Circa 3.5KM of additional PSP/ Shared path.	TBC
Workforce and Supply Chain		
Number of people employed by supply chain at various stages of project	75 onsite at peak	75 onsite at peak
Total number of suppliers engaged	60 No. Subcontractors 180 No. Suppliers Engaged	TBC
Total number of Indigenous Enterprise	Currently 4 No. Indigenous Companies engaged on the project.	TBC
Total number of Disability Enterprise	Nil.	TBC
Buy Local Spend (to date)	$8 million	TBC

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, with 6,000 jobs expected to be created. The State and Federal Governments have allocated $86 million for this project.

The project is expected to employ a peak workforce of 75 personnel onsite during the construction phase.

Geographically, this intersection is bounded by residential areas (Maida Vale and High Wycombe) to the north-west and south-west, Hillview Public Golf Course to the northeast and land owned by the City of Kalamunda and State Government, bordered by residential, to the south-east. Roe Highway is managed by Main Roads while Kalamunda Road is managed by the City of Kalamunda.

The project staging and communications plan are targeted to minimise disruption to 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, businesses continue to operate as per normal.

The primary stakeholders, inclusive of industries and business, can be found in Appendix 6.

Key Economic Outcomes

By upgrading the intersection to a grade-separated interchange, the below will be realised and improved at the end of construction:

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

Through the improvement of the above key aspects, the Project will ultimately support economic development and lead to a much improved road network, improving user satisfaction and appeal to the area, and thus increased road users travelling to local businesses and industries.

Sustainable Procurement and Buy Local

As outlined in Georgiou's Corporate Sustainability Policy (Appendix 4), Georgiou is ethically responsible in managing the Projects they construct, materials they procure and people they employ. The Project endeavours to leverage procurement processes to achieve sustainability objectives including supporting Western Australian (and Australian) industries.

As a West Australian owned and operated business, Georgiou has favoured local vendors within the Project's procurement process. The grade-separated interchange requires 52,000 tonnes of asphalt product and granular pavement material beneath, demanding large quantities of import of granular pavement and asphalt product. Transport distance is a heavy contributor in supplier selection, resulting in the award to local businesses located within 5km of the project site and circa $8 million of works awarded locally.

Georgiou is committed to achieving the objectives of increasing employment opportunities for Indigenous and Torres Strait Islander persons and increasing Indigenous business participation throughout the duration of the Project. Georgiou demonstrates its commitment to Indigenous participation within its Indigenous Relations Policy and Reconciliation Action Plan (RAP). Commitment and accountability for the policy and plan stems down from the executive team to all Georgiou employees.

As per MRWA requirements for the Project, Georgiou has implemented the following Project targets for Indigenous participation:

- Indigenous Employment Target – at least 10% of the total hours are undertaken by Indigenous persons.
- Indigenous Business Procurement Target – works and/or services to a value of at least 2% of the contract sum are undertaken by Indigenous businesses.

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

Climate Change Assessments

The Project recognises the importance of building infrastructure that is resilient to current and future impeding risks of climate change. MRWA has established a sustainability target requiring the Project to lead a Climate Change and Natural Hazard Risks Workshop, involving key internal and external stakeholders to participate and understand the current and future risks of climate change on the Project.

The Assessment includes assessing the likelihood of shocks and stresses relating to the Project in terms of assets impacted, including wind and hail, bushfire, flooding and drought. The Risk and opportunity criteria applied is informed by ISO:31000 and AS:5334-Climate Change Adaptation for Settlements and Infrastructure: A Risk Based Approach. Projections are mapped against the asset's design life and the Project endeavours to manage climate change and natural hazard risks in accordance with the *MRWA Guidelines Climate Change Risk Assessment (Version 2, August 2019)*.

Sustainable Transport

The Project will ultimately provide a new PSP running approximately 3.5km, connecting Berkshire Road in the south and Kalamunda Road in the north. Captured within construction staging, roughly 50% of the new PSP has been delivered and made accessible to the public ahead of overall project completion.

Social Aspects Performance

At a glance

Table 10: Social Statistics

Social Aspect	Year to 30 June	Total for Project
Community Satisfaction to Project	TBC	TBC
No. of Stakeholders engaged with during project development	TBC	TBC
No. of complaints	13	110
No. of legacy commitments	0	1
No. of heritage sites in project vicinity	6	6
No. of heritage sites significantly impacted	0	0
No. of traffic safety incidents within project boundary	1	1
% of women in workforce	8.57%	8.57%
% indigenous in workforce	4.6%	4.6%
LTIFR	0	0
No. of hours training during project	N/A	N/A
No. of development employees and apprentices on the project	N/A	N/A
No. of employees (FTEs) sourced from local community	0	0

Social context

Community and stakeholder engagement is a vital component of the Project due to the potential for significant impact on numerous residents, road users and stakeholders. Significant community and stakeholder engagement has been undertaken by Main Roads, including the convening of a Community Reference Group. Project primary stakeholders are listed in Appendix 3.

As stated within Sustainable Procurement, Georgiou is committed to increasing employment opportunities for Indigenous persons and increasing Indigenous business participation throughout the duration of the Project. The Project is realising this commitment through the objectives of increasing employment opportunities for Indigenous persons and increasing Indigenous business participation throughout the duration of the Project.

Legacy

The Project has adapted the design to conserve the Jarrah tree alongside the infrastructure delivery, as a result of local community communicated concerns. Ensuring this tree is retained has become one of the Project's adopted sustainability initiatives and involves an arborist completing monthly inspections and reports throughout construction.

The Project has recognised the important waterway and wildlife corridor, Poison Gully, prevalent within the Project's surrounding environment. With close collaboration with City of Kalamunda and MR, the Project is committed to protecting and communicating the environmental and heritage value of this area.

Community & Stakeholder Engagement

A Community and Stakeholder Engagement Plan (CSEP) has been implemented to address the requirements related to management of community and stakeholder engagement and to achieve the targets set for the Project. The CSEP is guided by the established targets and principles of Main Roads' CSEP and the engagement programs conducted by MRWA. Specific objectives of the CSEP aim to heighten awareness and support for the project, and gain community understanding of the project benefits:

- build trust with all project stakeholders through open, consistent, accurate and coordinated communications;
- respond to and accommodate reasonable community and stakeholder expectations and needs;
- promote opportunities for community and stakeholder input, where appropriate, in project planning and delivery;
- build strong community and stakeholder awareness about the project benefits;
- provide regular and clear information to ensure 'no surprises' through targeted engagement and responsiveness;
- set clear parameters and expectations around areas of community influence;
- proactively manage and respond to complaints, potentially controversial issues and incidents; and
- inform directly affected stakeholders of the works schedule including construction access, traffic disruptions and controls, noisy work, changes to the agreed construction program, construction of temporary detours and work required outside the nominated working hours.

Addressing community concerns

Georgiou's approach to engagement is based on:

- The International Association of Public Participation (IAP2) Consultation Spectrum. Stakeholders are profiled to identify the most appropriate engagement technique to suit the complexity of the issue, desired objective and target audience.
- Adherence to the Main Roads' Strategy and Communications Directorate protocols, ensuring consistency of messaging for the project. All public communication materials will be approved by Main Roads' prior to public release.

Significant community engagement has been undertaken by Georgiou and Main Roads, including the convening of a Community Reference Group. Georgiou has built on the engagement programs conducted by Main Roads and addressed community concerns within the infrastructure design and delivery, where feasible.

A key component of the community and stakeholder engagement process is the method for prompt and accurate complaints resolution. To minimise the likelihood of complaints, Georgiou will proactively review the risk of impact on external stakeholders from construction activities. The aim of this is to:

- identify stakeholders who may be affected;
- identify potential impacts and the degree of those impacts;
- determine the need to engage with stakeholders;
- identify effective methods of engagement and communication;
- identify when a construction issue requires dissemination to a wider audience; and
- develop information and communicate.

The level of engagement and information requirements will vary across different stakeholders. Communication tools and engagement methods are therefore tailored to suit particular needs on a case-by-case basis.

Road Safety

Road safety will be significantly improved upon completion of the Project. As part of the Project works, the new grade-separated interchange will improve travel in regards to safety and performance through the area, at the same time providing sufficient allowances in the design and execution of the works for future growth in demand on the highway network.

Kalamunda Road flowing over Roe Highway will also minimise noise and visual intrusion for the surrounding residential area.

Traffic Management / Community Safety

The Project has implemented a comprehensive Traffic Management Plan (TMP) ensuring public traffic operates continuously and safely whilst being segregated from construction activities associated with these Project works. Control measures are defined within this plan in relation to critical project tasks adjacent to a live traffic environment. The objectives of the TMP are to:

- enable management of potential adverse impacts on traffic flows to ensure network performance is maintained at a level prescribed in the scope of works;
- provide protection to workers, visitors, agents of Main Roads and the general public from traffic hazards that may arise as a result of the construction activity; and
- 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 requires site specific Traffic Control Plans (TCP) and Temporary Road Designs (TRD) to be prepared during the course of the Project. Site specific TCPs shall be developed out of a risk management process based on Australian Standard AS/NZS/ISO 31000; Risk management.

Georgiou reviews the upcoming scheduling of works on a regular basis and identifies activities likely to cause added congestion to the adjoining roads or that have the potential to impact on community safety. These activities are then executed at night time in accordance with a City of Kalamunda approved Out of Hours Management Plan when traffic counts are at their lowest.

Workforce Safety

All Project activities are supported by Georgiou's *Safety is My Way (SIMW)* initiative and the Project's Health & Safety Management Plan and Traffic Management Plan.

SIMW supports safety as one of Georgiou's company values and recognises individuals (employees and subcontractors) for their contribution to safety in the workplace and their safe behaviour. Recognising workers for SIMW performance is essential to continually grow safety culture and performance levels.

The Health & Safety Management Plan is kept up-to-date to ensure compliance with:

- *MRWA Safety, Health and Wellbeing Policy Statement*;
- *Georgiou Health and Safety Policy Statement;*
- *Occupational Safety and Health Act 1984; and*
- *Occupational Safety and Health Regulations 1996*.

All relevant works, including those conducted by subcontractors or by other companies on Georgiou's behalf, will conform to these Policies.

Lost Time Injury Frequency Rate: 0

Number of Reported Safety Incidents: 55

Georgiou's Corporate Health and Safety Policy can be found at the link below.

https://www.georgiou.com.au/responsibility/policies/#1588144910848-bf2e88e2-93fd

Appendix 1 - List of Protected Areas Project interfaces with:

The following culturally and environmentally sensitive areas have been identified as occurring within, adjoining or in close proximity to the Project boundary;

- Aboriginal Heritage: No registered or lodged places lie within the Project Area. There are five registered sites and eight lodged (not registered at the time of writing) within 1 km of the Project Area (EIA, 2018);
- There are no listed Bush Forever sites within the Project Area. One Bush Forever Site is adjacent the Project Area and five other Bush Forever sites are within close (<450m) proximity (Section 13 - Figure 5). The northern end of the Project Area is mapped as an ESA, accounting for the buffer zone surrounding Bush Forever Site 122, which has been identified as containing a TEC.
- Surface water/wetlands: A small water body is located within the Hillview Public Golf Course approximately 150 m east of the Project envelope (Figure 8). The Project Area is not located within a Surface Water Protection Area, as defined under the *Rights in Irrigation and Water Act 1917* (RIWI Act);
- A search of the Department of the Environment and Energy (DoEE) *Protected Matters Search Tool* and Department of Biodiversity, Conservation and Attractions (DBCA) (formally DPaW) Managed Lands database determined that the Project Area does not intersect National Parks or nature reserves (DoEE 2016, DBCA [DPaW] 2014).

Appendix 2 - Protected fauna and flora species and habitat

Main Roads Western Australia commissioned 360 Environmental Pty Ltd (360 Environmental) via the MRWA/BG&E Engineering and Technical Services (ETS) Panel, to undertake an Environmental Impact Assessment (EIA) for the Roe Highway and Kalamunda Road Upgrade. According to the EIA the following Conservation significant fauna species recorded during the Survey:

- Forest Red-tailed Black Cockatoo (Calyptorhynchus banksii naso);
- Rainbow Bee-eater (Merops ornatus); and
- Southern Brown Bandicoot (Quenda) (Isoodon obesulus fusciventer) (based on diggings).

Of the 120 flora taxa (including species, subspecies, varieties and forms) from 95 genera and 37 families were identified. Of these species, 32 were introduced flora, only one species, *Conospermum undulatum* (DRF/T) was recorded within the survey area. *Conospermum undulatum* (DRF/T) is listed under the EPBC Act as Vulnerable and gazetted as Declared Rare Flora (Threatened) pursuant to the WC Act. It was recorded in the survey area in eight locations. The vegetation within the buffers of these conservation significant plants are considered critical habitat and therefore are regarded as ESAs.

One Priority species, *Isopogon drummondii* (P3) was found at one location.

Appendix 3 – List of Stakeholders to the project

The primary stakeholders, inclusive of industries and business are summarised below:

Category	Stakeholder
Local Government Authorities	City of Kalamunda
Local community	Local residents in vicinity of the works including suburbs of Maida Vale and High Wycombe, local community groups
Local businesses	Owners of property and businesses in vicinity of the works. Hill View Golf Club, Maida Vale Shopping Centre.
Environmental stakeholders	Department of Parks and Wildlife (DPaW), Urban Bushland Council WA, Department of Water and Environmental Regulation
Indigenous	Local Nyoongar Indigenous groups, South West Aboriginal Land and Sea Council
Road users	Freight industry bodies, Transperth (bus routes 294, 296, 298), motorists, pedestrians, cyclists, cyclewest, and other recreational users, taxis
Service providers	Includes Water Corporation, Western Power, Public Transport Authority (Transperth buses), Atco, Telstra
Emergency Services	St John Ambulance, DFES, WA Police
Main Roads' Project Review Group and Asset Management	MRWA
General public	CRG/PRG

Appendix 4 – Georgiou Corporate 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.

SAFETY | PROFIT | RELATIONSHIPS | PEOPLE | INNOVATION

Rob Monaci
Chief Executive Officer
August 2018

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
DoEE	Department of the Environment and Energy (Environment portfolio)
DoW	Department of Water
DWER	Department of Water and Environmental Regulation
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
PSP	Public Shared Path
RFP	Request for Proposal
SDGs	United Nations Sustainable Development Goals
SMP	Sustainability Management Plan
SWTC	Scope of Works and Technical Criteria
UN	United Nations