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HIGH STREET UPGRADE: Project Sustainability Report 2021

Prepared by Georgiou

This annual report covers the period from 01/07/2020-30/06/2021. A previous annual sustainability report was prepared for the project for 2019-2020.

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About this Report

This report has been prepared by the High Street Upgrade Project team on behalf of Main Roads Western Australia (MRWA). This report forms part of MRWA's annual sustainability reporting which is integrated into its Annual Report. The report content is prepared in accordance with GRI principals. Material topics reported in this report have been determined through a materiality process that adheres to the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) v2.0 Design and As Built Rating Scheme.

Introduction

The Project will provide a meaningful improvement in travel times for those travelling to and from Fremantle, whilst providing significant improvements in safety for road users by eliminating the multiple right-hand turns that currently congest the stretch of road between Carrington Street and Stirling Highway. Pedestrians and cyclists will benefit from the greater connectivity both across and along High Street and Stirling Highway and safer passage, thanks to the introduction of the underpasses. Without the introduction of this upgrade, congestion within this area would continue to build to saturation levels. Scope inclusions specified by MRWA will ensure that the amenity and quality of living for residents will be maintained and, in many cases, be improved, through the introduction of such things as the noise walls, service road, improved path connectivity, increased lighting and new soft landscaping.

The Project is committed to managing its operations to promote positive environmental, social, and economic impacts. The Project is advancing its management of sustainability through the adoption of the ISCA ISv2.0 Design & As Built Rating Scheme and self-assessment with MRWA. The application of this IS rating scheme is invaluable in allowing the Project to appreciate and realise sustainability outcomes across the infrastructure value chain. The IS rating scheme allows the Project to assess the infrastructure's contribution to the Sustainable Development Goals (SDGs) and align with the global pursuit of the United Nations' 2030 Agenda for Sustainable Development, and adhere to the delivery of quality, reliable, sustainable and resilient infrastructure.

The Project has applied an integrated management system to manage the material issues identified above and integrated quadruple bottom line principles where applicable to the infrastructure. Figure 1 outlines several key sustainability opportunities identified and implemented on the Project to exceed its commitment to sustainability.

Highlights

Energy Efficiency

The Project has committed to an energy and greenhouse gas emissions reduction target of 5% over the duration of design, construction and operation. An energy model was completed at the end of design phase by external sustainability consultants confirming a 55% lifecycle impact reduction, equating to an assumed saving of 9,107 tonnes of greenhouse gas emissions (refer Carbon Emissions & Energy page 12 and Appendix 6).

Supporting Sustainable Cities

The Project acknowledges the importance of infrastructure in making cities safe, resilient and achieving long-term positive outcomes. Consideration has been given to enhancing safety, accessibility, green spaces and heritage. The Project has developed a design which improves safety and accessibility (refer Economic Aspects and Case Study, pages 16-24), maximised canopy cover (refer Case Study pages 14-15), and incorporates Aboriginal artwork (refer Heritage pages 27-28).

Improving Safety

The Project was scoped and detail design was undertaken to provide significant improvements to safety of all road users of this critical traffic network, including the Perth Freight Link and the Restricted Vehicle (RAV) Network. Developing a more efficient route will reduce overall incidents, congestion and travel time. The Project provides a solution to ensure the network can safely account for the modelled increase of traffic. For more information refer to Appendix 7.

Minimise Environmental Impact

Consideration of retaining vegetation has been priority throughout Project design and construction. The Project has maximised retention of trees within the Project boundary and delivered supplementary planting of over 5,000 plants at Booyembara Park, 4,000 tuart trees with A Trillion Trees, and supplementary planting at Horrie Long Reserve with City of Fremantle (refer to Environmental Aspects Performance, pages 11-15).

Resource Efficiency

The Project has pursued the reduction of waste and applied the waste hierarchy in managing resources. In line with the WA Waste Avoidance and Resource Recovery Action Plan 2030, the Project has used over 12,000 tonnes of Crushed Recycled Concrete (CRC), one of the focal materials to reduce industry construction and demolition (C&D) waste (refer to Resource Efficiency, pages 13-14).

Figure 1: Sustainability Highlights

Overview

Design and construction of the High Street and Stirling Highway Intersection upgrade is delivered by Georgiou Group on behalf of MRWA. The Project is jointly funded by the Australian ($76.62 million) and State ($44.38 million) governments and is part of the road and rail infrastructure package to improve Perth's transport network.

The upgrade will substantially improve safety for road users, pedestrians and cyclists, and provide much-needed relief for congestion issues. This intersection had a disastrous history of traffic incidents and risk of truck rollover, being used by road users, pedestrians and the freight network.

Construction of the new roundabout and underpasses create a focal thoroughfare into the heart of Fremantle, with an urban and landscape design representative of the local area and Aboriginal artwork connecting the infrastructure to culture and land. Overall, the upgrade will create a more efficient road network for locals and visitors travelling through Fremantle.

The Project recognises the growing importance of this network and its need to enhance the safety of road users, freight efficiency and support traffic flow travelling to and from Fremantle, including Fremantle Ports. Key Project stakeholders include City of Fremantle and Fremantle Port Authority; further stakeholders are listed in Appendix 3. The needs of stakeholders and the surrounding community are taken into consideration during permanent design development and construction.

Construction commenced in early 2020, with completion scheduled for late-2021. The previously anticipated completion for mid-2021 has been revised, following discovery of some challenging ground conditions, an unseasonably high rainfall period and the introduction of additional scope in further surfacing works on Stirling Highway to Canning Highway, noise walls on High Street, and screen walls and amenity walls to Stirling Highway. The Project Works (refer to Figure 2 and 3) includes:

- Construction of a new roundabout at the intersection of High Street and Stirling Highway;
- Construction of a wide median on High Street to separate east and west bound carriageways and preserve a number of mature native trees;
- Construction of a single lane one-way service road for residents on the northern side of High Street;
- Construction of a new underpass at the junction of Forrest Street and Stirling Highway; and
- Construction of a new underpass at the junction of Montreal Street and High Street.

The Project is being delivered in line with MRWA's current strategic direction - Keeping WA Moving. This means when planning for and designing the Project works, Georgiou has simultaneously considered social, environmental and economic matters to ensure works are consistent with sustainability principles.

For more Project information, please visit https://www.mainroads.wa.gov.au/projects-initiatives/projects/metropolitan/High-Street-Upgrade/

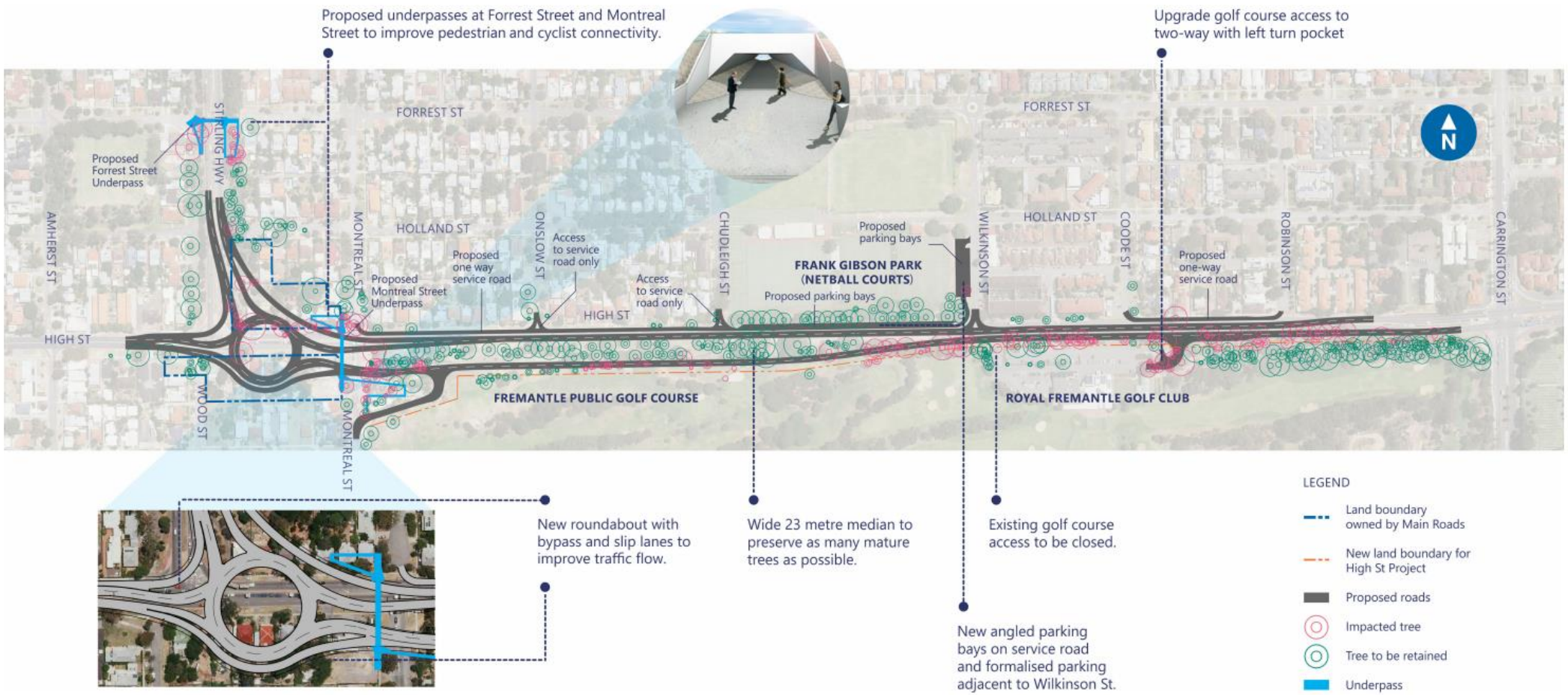


Figure 2: Proposed Works

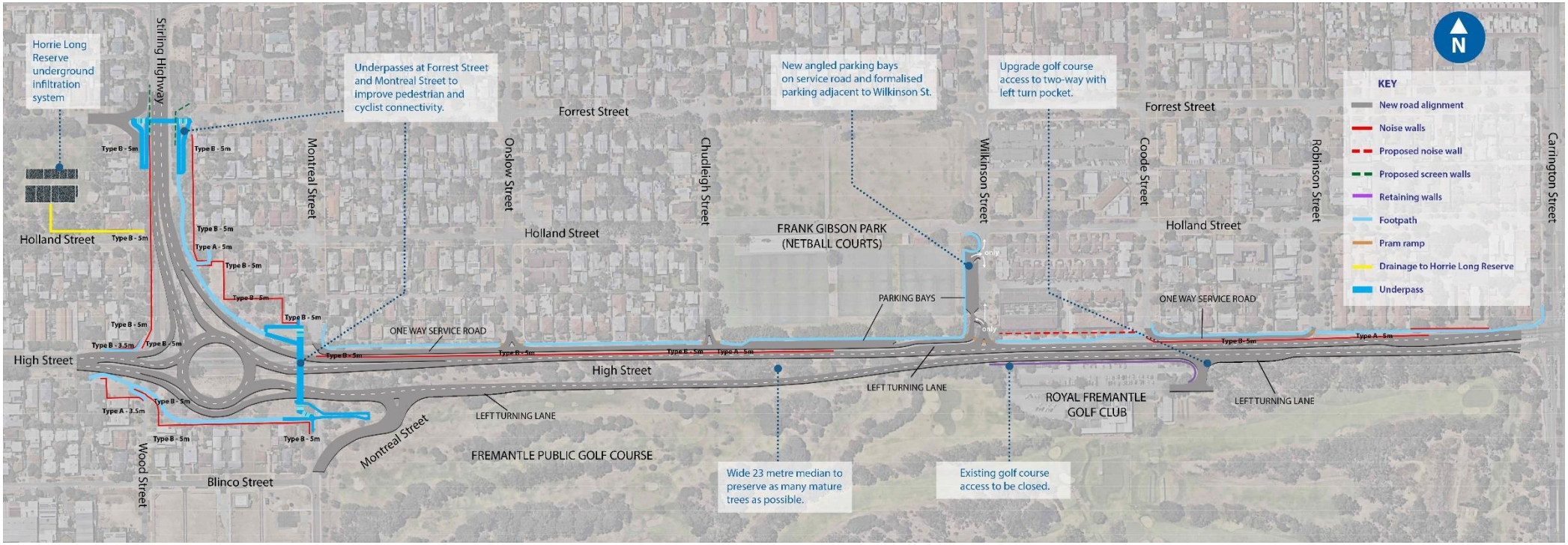


Figure 3: Final Works

Overall approach to Sustainability

A Project-specific Sustainability Policy and Sustainability Management Plan (SMP) was developed and implemented to govern the overall approach to sustainability on the Project. Consideration of MRWA's Sustainability Policy was incorporated in the development of these guidance documents (refer to https://www.mainroads.wa.gov.au/globalassets/community-environment/sustainability/sustainability-policy.pdf).

The Project's Sustainability Policy demands the principles of sustainable development are applied throughout the Project's entirety and includes a commitment to going beyond the mitigation of negative impacts to restorative actions (i.e. net positive benefits for society and the environment) (Appendix 4).

The Project management team is responsible for embedding this culture throughout Project design and construction phases. The Project acknowledges that sustainable outcomes cannot be achieved without the involvement of the entire team and as such sustainability targets are championed by various disciplinary leads including Georgiou Design Engineers, Georgiou Community and Stakeholder Engagement Management, and Georgiou Environmental Management. All Project team members are encouraged to pursue opportunities beyond business as usual (BaU) aligned with Georgiou's commitment to innovation. Figure 1 highlights some of the outputs of the Project's integration of sustainability and ongoing sustainability risks and opportunities management.

The Project is aiming for a minimum ISCA ISv2.0 Design and As Built Self-Assessed score of 50. Following verification by MRWA at the end of the design phase, the Project achieved an overall score of 53.5. A Life Cycle Assessment was completed by external sustainability consultants at the end of design phase, confirming achievement against overarching sustainability targets within Table 1.

Table 1: Performance of key Project reduction targets

Target	Summary
Reduction of construction and operational carbon emissions and energy use (scope 1, 2 & 3)	Energy and carbon emissions have been reduced by 54% (as at end of design phase) through multiple opportunities, including the implementation of LED luminaires within permanent lighting instead of HPS and reduced clearing.
Reduction of construction and operational water use	A significant amount of water has been required for construction activities (20,250 kL to date), however where possible hydro mulch has been used to reduce water usage (Table 3).
Reduction of construction and operational material impacts	The use of 25% Reclaimed Asphalt Pavement (RAP) within asphalt pavement allowed the Project to achieve a 27% lifecycle impact reduction (as at end of design phase).

Material Sustainability Issues

A materiality assessment was undertaken during early stages of design development, to determine the most important (material) sustainability issues and sustainability targets for the Project. This assessment was guided by an external sustainability consultancy to ensure a robust assessment, and involved participants from key Project stakeholders including MRWA, City of Fremantle, and

Fremantle Ports Authority. Materiality is determined with consideration of the Project context, key stakeholders and targets nominated by MRWA.

Material aspects are a direct result of the Project's activities and are aspects that the Project can influence, to provide the greatest value to stakeholders. Materiality of the UN SDGs and ISCA ISv2.0 Credits (Table 2) were determined through input by the various stakeholders participating in the assessment, and reviewed by MRWA for verification. The following three United Nations Sustainable Development Goals (SDGs) were identified through this assessment as high materiality;

- Good Health and Wellbeing (SDG 3)
- Climate Action (SDG 13)
- Life of Land (SDG 15)

Omission of the other SDGs does not mean the Project does not pursue positive impacts in relation to these, it just outlines these SDGs were identified as most important to the Project. The relationship of the SDGs and the Project's lifecycle has been identified (Figure 4 overleaf), in terms of impacts, to facilitate greater value adoption within development.

Table 2: Very high material aspects on the Project

ISv2.0 Credit	Aim	Materiality
Res-2 Climate and Natural Hazard Risks	To reward the assessment and treatment of risks associated with climate change and natural hazards.	Very High
Env-2 Noise	To reward the management of noise impacts.	Very High
Env-3 Vibration	To reward management of vibration impacts.	Very High
Env-4 Air Quality	To reward management of air quality impacts.	Very High
Env-5 Light Pollution	To reward prevention of light spill.	Very High
Eco-1 Ecological Assessment and Risk Management	To reward the identification of ecological values, the management of impacts and opportunities to achieve the maintenance or enhancement of ecological value.	Very High
Eco-2 Ecological Monitoring	To reward the implementation of monitoring methods to understand the ecological effects of the project and to drive adaptive management.	Very High

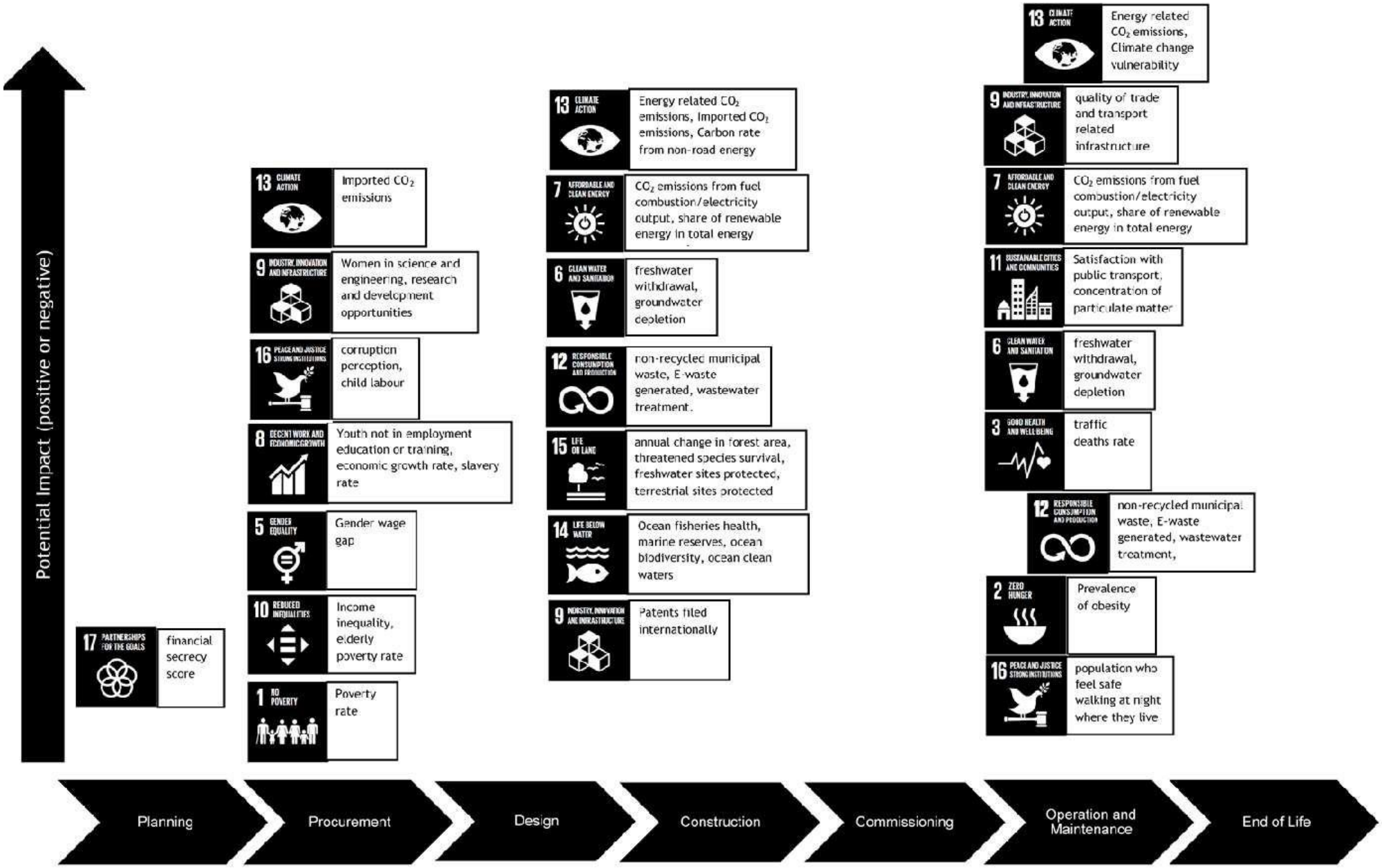


Figure 4: The Project lifecycle and potential impacts within the SDGs

Environmental Aspects Performance

At a glance

Table 3: Environmental aspects performance

Aspect	Year to 30 June	Total for Project
Forecast Clearing (ha)	4.5	6.4
Clearing permit allowance (ha) – native vegetation	0.63	0.63
Actual clearing to date (ha) – native vegetation	0.25	0.46
Total Water Consumption to date (kL)	19,073	20,250
Total water licence allowance (kL)	31,250	75,000
Total GHG emissions (scope 1 & 2) to date (t CO_2-e)*	807,573 t CO_2-e	896,880 t CO_2-e
Total energy consumption to date (MJ)^	240,335	433,531
Total quantity of recycled content used in project (t)	18,155	39,000
Total imported materials used in project (t)	923	44,977
Total waste generated by project (t)	13,617	51,297

**based on fuel and electricity consumption*

^based on electricity consumption

Environmental context

The Project is located in a historically disturbed urban environment. The majority of the Project area is currently road reserve, surrounded by residential, recreation and commercial properties (refer Figure 5 and 6). The environment is highly modified and has undergone extensive land clearing. Past and current land uses in the surrounding region include:

- Road and road reserve;
- Residential;
- Service station;
- Golf course;
- Industrial; and
- Quarry and landfill.

The Project is located in the City of Fremantle, a major port city in WA. Fremantle is characterised by a Mediterranean climate, cool wet winters and hot dry summers.

Climate data was sourced from the nearest Bureau of Meteorology (BOM, 2021) station in Swanbourne, 11 km north of the Project. The highest monthly average maximum temperature is 30.3°C (February), and the lowest monthly average minimum temperature is 9.9 °C (July). Swanbourne averages 730mm of rainfall a year, with the highest rainfall in July.

The Project is 2.5km from the coast and, as such, is not considered to be at significant risk of climate change events. Decreases in annual rainfall and increases in flood producing rainfall are

expected. The Project has undertaken a Climate Change and Natural Hazard Risks Assessment as detailed in 'Economic Aspects Performance'.

The Project area is situated approximately 1.2km south of the Swan River, within the Swan Coastal catchment (DWER, 2021). The Project is located within the Swan/Canning Estuary surface water allocation sub-areas (DWER, 2019). Stormwater runoff will be captured in drainage basins adjacent to the road and therefore will not flow offsite or towards the Swan River.

No geomorphic wetlands were identified during the survey. However, the Swan River Estuary, classified as an Estuary-Waterbody, is situated 900m north of the Project area.

Table 4: Legislative and other requirements and how the Project will comply with these requirements

Legislation / Other requirement	**How will Georgiou comply with the requirement**
Environment Protection and Biodiversity Conservation Act 1999 (C)	The EMP implements processes to minimise impact on the Environment
Environmental Protection Act 1986 (WA)	The EMP implements processes to minimise impact on the Environment
Environmental Protection Regulations 1987 (WA)	The EMP implements processes to minimise impact on the Environment
Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)	Waste Management Environmental Sub Plan
Aboriginal Heritage Act 1972 (WA)	Culture & Heritage Management Environmental Sub Plan
Aboriginal Heritage Regulations 1974 (WA)	Culture & Heritage Management Environmental Sub Plan
Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (WA)	Compliance with Flora and Fauna Management Sub Plan
Rights in Water and Irrigation Act 1914 (RIWI Act) (WA)	Water Management Environmental Sub Plan
Environmental Protection (Controlled Waste) Regulations 2004 (WA)	Waste Management Environmental Sub Plan
Environmental Protection (Noise) Regulations 1997 (WA)	Noise & Vibration Management Environmental Sub Plan
MRWA Environmental Policy	The EMP in its entirety
Environmental Protection Act 1986 (WA) approval; Ministerial Statement 1096	This EMP in its entirety

Figure 5: Project Footprint 1

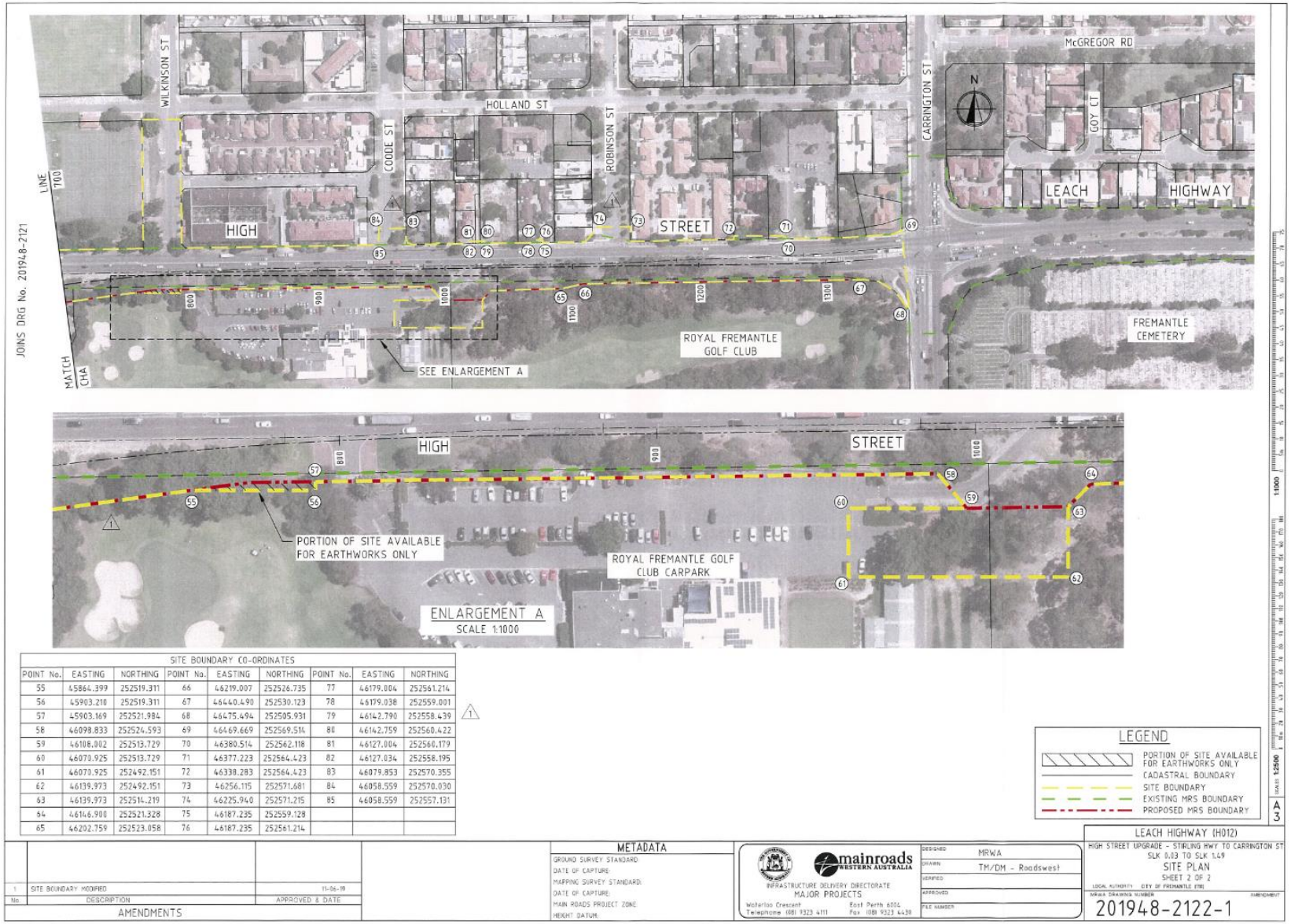


Figure 6: Project Footprint 2

Environmental Management

The Project has developed an Environmental Management Plan (EMP), which sets out to describe 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 following Environmental objectives and targets have been taken from the Project's HSEQ Objectives and Target 20/21:

- Meet environmental monitoring goals (vibration): Env-3 Vibration Baseline Assessment (ISCA) outlined vibration goals, compliance with;
    - <5mm/s; and
    - DIN4150 (where practicable).
- Compliance with Project Ministerial Statement: Creation of Safe Work Method Statement around Clearing, Stripping and Grubbing and compliance with SWM.
- Meet environmental monitoring goals (air quality and dust): < 40 µg/m^3 (PM10) for the Project where monitoring is undertaken, in which it is 10 µg/m^3 less than the 50 µg/m^3 over 24 hours threshold.

The Project 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 this EMP has been based upon the risks and opportunities identified, and specifically address client, contractual, legal and other obligations.

A Project-specific Environmental Commitment Statement has been developed and sets out key environmental commitments for the lifetime of the Project. Georgiou's key personnel have signed the Commitment Statement and it is prominently displayed on the Site Office Noticeboard for the duration of the Project. A copy of the Commitment Statement shall be included in information provided to persons at the Project induction and a copy shall also be supplied to each subcontractor.

Publicly available Project environmental documents can be found at the following website, under the subheading: 'Environmental review documents'

Water Management

Water Management is outlined within the Project's 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 which can utilise the use of non-potable water sources (groundwater). The Project does not fall within a Public Drinking Water Source Area (DWER, 2020), but does fall within a proclaimed Perth Groundwater Area (DoW, 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 under the License to Take Water. Water usage is tracked monthly and reported to MRWA as part of monthly reporting requirements for the Project.

Table 5: Water quantities

Source	Year to 30 June	Total for Project
Water purchased from the scheme in litres	287,000	339,000
Water pumped from bores in litres	18,786,000	19,412,000
Water pumped from rivers, lakes or harvested in litres	0	0
Recycled or waste water use (typically from another industry) in litres	0	0

Carbon Emissions & Energy

The Project's main sources of greenhouse gas emissions and energy consumption include operational energy (such as permanent lighting), fuel use, clearing and electricity. A 5% reduction target of construction and operational energy was implemented and opportunities to reduce energy consumption have been encouraged within the Project team. This reduction target is important to the Project aligned with MRWA's objective to reduce impacts to the natural environment within the transport network.

The Project had a Life Cycle Assessment (LCA) completed at the end of design phase, to model greenhouse gas emissions and energy consumption over design and construction. This model confirmed the Project achieved a 55% lifecycle impact reduction, equating to approximately 9,107 tonnes of greenhouse gas emissions reduced. This significant reduction was achieved through a number of opportunities, including the replacement of High Pressure Sodium (HPS) lighting to Light-Emitting Diode (LED) luminaires. LED lighting equates to over 50% of the Project's footprint, highlighting the importance of considering the whole of life impacts of construction projects on the natural environment.

The Project monitors ongoing consumption over the lifetime of design and construction (Table 6) and will undertake a secondary LCA to confirm final saving at Project completion.

Table 6: Energy quantities

Source	Year to 30 June	Total for Project
Energy usage by source in mega joules		
From fuel use (MJ)	11,292	163,427
From electricity (MJ)	229,042	41,061
Energy saved (MJ)	1,795*	3,590*

**Estimated figure based on LCA completed at design stage, to be updated at end of Project.*

Dust

Air quality refers to the state of the air around us. An air pollutant is a contaminant in the air which can harm humans and/or the environment. Air pollution can adversely impact human health, particularly of people with pre-existing respiratory conditions (such as asthma) and cardiovascular diseases, young children and the elderly. Impacts range from mild airway irritations to major organ damage and can be short or long-term.

Large infrastructure Projects like this Project have the potential to generate dust. Dust has the ability to cause health issues within the community, impact on 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 (approximately 150m of dust fencing was used near sensitive receptors);
- a single dust monitor deployed where required (the dust monitor was deployed across the Project as per the scheduling and of works, with a total of 10 locations being utilised);
- the use of water carts;
- application of DustX and Hydromulch to open areas;
- rescheduling dust generating activities (where possible) to avoid adverse weather conditions (adverse weather is defined as greater than 60km/hr winds with no associated rainfall); and
- cessation of works in adverse weather conditions.

Due to the advanced stage of the Project, the ground conditions, and the final months of the Project falling in the wettest months, it is not anticipated dust generated by the Project will be of any significance from the time of this annual report to practical completion of the Project.

Clearing

The Project's clearing has been completed to date in strict accordance with MRWA issued clearing permits. Clearing activities are a significant environmental risk for the Project which requires careful planning and stringent controls to ensure no over-clearing occurs.

The following mitigation measures apply to all clearing required for the Project:

- Implementation of tree protection zones, within the drip line of retained tree canopies.
- The clearing envelope will be clearly pegged out by a suitably qualified surveyor prior to clearing.
- Clearing must be restricted to only those areas where works are to be constructed. The extent of clearing of the road alignment must not exceed 0.5m from the limit of earthworks.
- An arborist must inspect all trees to be retained, prior to the commencement of earthworks, in order to assess the health and long-term survivability of each tree.
- 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.

Georgiou has made available felled trees/timber to the City of Fremantle as well as the greater surrounding community for re-use.

Resource Efficiency

The Project has pursued the reduction of waste throughout design and construction and applied the waste hierarchy (Figure 7) in managing resources. Several opportunities have been realised in line with this hierarchy of avoidance, including:

- Avoidance: substituting raw asphalt material for Reclaimed Asphalt Pavement (>25%);
- Reuse: reusing fill from surrounding Projects for Project needs;
- Reuse: reusing drainage pipe at Wood Street;
- Avoidance: substituting limestone subbase for Crushed Recycled Concrete (CRC); and
- Avoidance: substituting raw material for CRC in drainage.

Construction and demolition (C&D) waste makes up around half of Western Australia's waste stream (Waste Authority, 2012). 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, 2012). A total of approximately 11,367 tonnes of CRC subbase has been used so far, expected to reach 15,000 tonnes by the end of the Project.

In line with the WA Waste Avoidance and Resource Recovery Action Plan 2030, the Project has used over 12,000 tonnes of Crushed Recycled Concrete (CRC), one of the focal materials identified within this Strategy to reduce industry construction and demolition (C&D) waste.

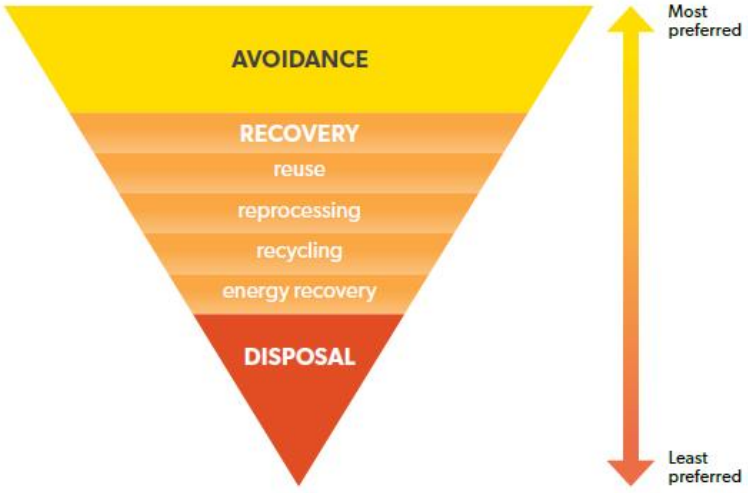


Figure 7: Waste Hierarchy (Waste Authority, 2012)

The Horrie Long stormwater drainage solution allowed the Project to reuse existing drainage pipe at Wood Street. Reuse of the existing pipe saved this material from ending up at landfill, and minimised resources that would have been used for removal and production of new pipes. The mitigation of removal also reduced ground disturbance, impact on existing services, vegetation and material removed and disposed in the process.

Case Study – Canopy Cover

The Project footprint (refer Figures 5 and 6) contains several large trees which provide fauna habitat, visual amenity and contribute to reducing the severity of urban heat island's effect within the road reserve. A Tree Protection Plan (TPP) was developed by MRWA prior to design and construction, identifying specific trees to be retained and specifying management measures to ensure they are retained over the lifetime of the Project. Overall, the Project aimed to maintain canopy cover through:

- retention of existing trees where possible through construction methodology that minimises land disturbance and vegetation removal – the Project retained 153 significant trees (Diameter Breast Height >500mm) within the Project boundary;
- planting native tree species as tube stock and mature stock within the Project boundary; and
- supplementary offset canopy planting beyond the Project's boundary.

An analysis completed by an external landscape consultant determined an initial 37,900 square metres (sqm) of canopy cover pre-development within the Project boundary. Of this, 21,750sqm of mature canopy was successfully retained (over 50%) and approximately 16,150sqm canopy cover was removed.

Future canopy cover (as identified in Figure 8) is forecasted based on the proposed plantings within the Project boundary (Figure 9), and canopy cover provided from the installation of *Eucalyptus gomphocephala* (Tuart) in nearby Booyembara Park. This forecast estimates a total of 55,000sqm mature canopy cover by 2050, bringing the total canopy cover to 76,750sqm as outlined in Figure 8 below.

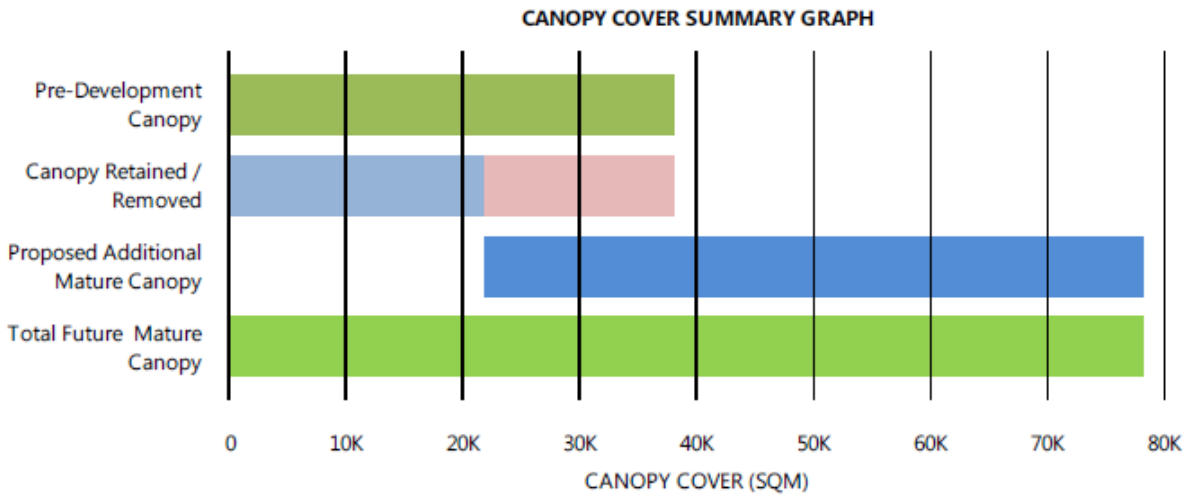


Figure 8: Canopy Cover Summary

Figure 9: Canopy Cover within Project Boundary

Economic Aspects Performance

At a glance

Table 7: Economic aspects performance

Economic Aspect	Year to 30 June	Total for Project
Funding	N/A	$118M
Increase in cycling and pedestrian facilities (i.e. increase in PSP length)	N/A	3,593.6sqm
Workforce and Supply Chain		
Number of people employed by supply chain at various stages of project	2,515	2,830
Total number of suppliers engaged	200	200
Total number of Indigenous Enterprise	13	13
Total number of Disability Enterprise	0	0
Buy Local Spend (to date)*	$4,726,958	$5,866,174

**includes subcontractors and suppliers within 20km of the Project*

Economic context

Improving safety, freight efficiency and traffic flow between Stirling Highway and Carrington Street, Fremantle are key drivers of the Project. This section of the network is critical to the Western Australian economy as the major freight network link with Fremantle Port, in addition to providing a key link to the growing southern suburbs of Perth and to Fremantle. Traffic modelling indicates reliance on this mixed vehicle type corridor will increase over time, with the Project critical to providing a medium-term congestion solution.

Prior to the Project commencing, this section of the network had a high crash rate, with 282 crashes on High Street since 2018. This not only posed a safety problem, but also a congestion issue as these incidents would place further pressure on the already congested freight access to and from the Port. The Project will ensure the network is built to safely manage this capacity and separate local traffic from Fremantle Port traffic by constructing tow local one-way service roads to replace High Street access to properties and local streets. By replacing the reverse camber, signalised High Street and Stirling Highway intersection the risk of truck rollovers and peak hour congestion within the area will significantly reduce.

Supporting the Fremantle Economy

High Street is the main thoroughfare to the heart of Fremantle, accessed by residents, freight and port-related vehicles, local businesses, tourists, recreational users, pedestrians and cyclists. Fremantle is regarded as one of the state's most popular tourist destinations and is home to the State's busiest and most important cargo port (City of Fremantle, 2019). The Project supports traffic flow travelling to and from Fremantle, including Fremantle Ports, and within the surrounding community.

Fremantle's local economy consists of port-related industries, commercial services, manufacturing, recreation, tourism, entertainment, business services and marine industries. Through continuous engagement with key Project stakeholders and community throughout development, the Project will facilitate economic development aligned with the City of Fremantle's strategic focus (City of Fremantle, 2019), in diversifying and strengthening Fremantle's economic capacity. As improving the Perth Freight Link is a key outcome for the Project, the Project has also coordinated with Fremantle Ports Authority to ensure long-term efficiency outcomes are optimised through delivery.

Considerable effort has been put into consulting with stakeholders and community members from within the Project area and surrounds to minimise impacts during construction works. Through the use of detailed traffic management plans and multiple review processes with impacted stakeholders, the Project is able to deliver works alongside due diligence of affected stakeholders. Alternative routes are maintained and provide continued connectivity for impacted road users. Further information relating to stakeholder and community consultation is detailed in the next section of this report.

Key Economic Outcomes

Key enhancements of the Project include:

- increased safety for road users and pedestrians (resulting in reduced incidents);
- improvement to the Perth Freight Link and the Restricted Access Vehicle (RAV) network;
- reduced congestion; and improvement of traffic flow;
- provide new formal parking bays adjacent to the Fremantle Netball Association;
- reduced travel time and improved accessibility; and
- improved connectivity for pedestrians and cyclists through the area.

Sustainable Procurement and Buy local

The Project has reviewed direct and indirect governance, social, economic and environmental risks and opportunities within its supply chain. As a Western Australian owned and operated business, Georgiou has given due consideration to local vendors. Near completion, we have awarded supply and subcontract packages to a value of $5.8M within 20km of the Project site. Pivotal procurement objectives include the Aboriginal Participation target – committing to a minimum of 3% spend on Aboriginal businesses. The Aboriginal Participation targets and performance measurements are shown in Table 8.

Table 8: Aboriginal Participation Targets

Workforce Aspect	Target	Current Performance
Indigenous Business Procurement	3%	9%
Indigenous Employment	10%	9%[1]

Georgiou demonstrates its commitment to Aboriginal Participation and the Project's targets within its Indigenous Relations Policy and the company's Reconciliation Action Plan (RAP).

[1] Please note this is a progress figure that will be revised prior to the project completion in 2022.

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

Climate Change Assessments

Climate Action (SDG13) was identified within the materiality assessment as very high in terms of materiality on the Project. A Climate and Natural Hazard Risks Workshop and Resilience Risk Workshop were held during design of the Project. A multidisciplinary representation from Georgiou and MRWA participated in the risk assessment, alongside representatives from the Project's key stakeholders, City of Fremantle and Fremantle Ports Authority.

These risk assessments are crucial to combat our changing climate and facilitate greater environmental, social and economic long-term outcomes. Research from the National Climate Change Adaptation Research Facility (NCCARF) indicates current emissions are tracking close to Representative Concentration Pathway (RCP) 8.5. Accordingly, projections based on RCP 8.5 across two timeframes to 2030 and 2090 were adopted in the climate and natural hazards risk assessment.

The Project recognises our role in building resilient infrastructure. Risks managed by the Project acknowledged the potential to reduce stresses such as inadequate urban planning, and shocks such as failure of critical infrastructure, digital network failure and pandemics/diseases.

Sustainable Transport

As the main thoroughfare to the heart of Fremantle, the upgrade of pedestrian and cyclist facilities in the Project area has enhanced the sustainable transport opportunities for the wider Fremantle community. The Project has increased both the capacity for the road network to allow for the 2.5% projected annual increase in traffic and accessibility for people walking and cycling along the network. Improving pedestrian and cyclist connectivity was considered throughout design and a number of additional improvements were actioned beyond the concept design. An example of where this was realised includes the removal of existing drainage, to open up opportunities for wider connectivity and landscaping. A connectivity assessment was undertaken by the Project to compare the improvements made to walking and cycling catchments before and after the project. This improved pedestrian movement and safety around the Project precinct. Please refer to the Case Study for more information.

Case Study – Improving Connectivity

Improving connectivity and pedestrian and cyclist access was a key Project outcome. It was raised as an issue by the wider community through MRWA initial consultation (MRWA, 2018). Community were keen to see improved safety and access to the neighbouring East Fremantle Primary School, to the local netball courts and improvements to the general walking and cycling accessibility throughout the area. Wherever possible additional measures were taken during design to enhance pedestrian and cyclist facilities and optimise accessibility through the Project footprint (refer Figures 5 and 6).

As part of a sustainability initiative, the Project undertook a walking and cycling pedshed, used to quantify the improvements made to walk-ability and cycle-ability as a result of the Project. A pedshed (short for pedestrian shed) is a desktop study, determining the area travelled within a given timeframe (often 5-minute and 10-minute intervals), departing from a single location. The pedshed analysis undertaken for the Project was measured from the Fremantle Netball Association, as a central point along High Street (refer to Figure 10 below). To define the area covered by walking from the Starting Point, a series of 5-minute, 10-minute and 15-minute catchments were measured. Distance travelled within these timeframes is determined based on the level of pedestrian access and crossings (including different times for different types of crossings), from the Starting Point.

The pedshed assessments determined walking and cycling travel times are improved as a result of the Project works. Acknowledging Booyembara Park and East Fremantle Primary School as two popular destinations within the area, these locations were measured as part of the assessments to determine before and after travel times (refer to Table 9 below). These locations measure the significant improvements to travel from the Fremantle Netball Association South across High Street, and West across Stirling Highway.

Table 9: Walking and cycling travel time changes from local destinations

Destination	Walking			Cycling		
	Pre-Upgrade	Post-Upgrade	Difference	Pre-Upgrade	Post-Upgrade	Difference
East Fremantle Primary School	16min	14min	-2min, -13%	5min30s	5min	-30s, -10%
Booyeembara Park	17min	15min30s	-1min30s, -9%	5min	4min30s	-30s, -10%

Walk-ability

A walking pedshed was undertaken for 5-minute, 10-minute and 15-minute intervals from the Fremantle Netball Association (as per Figure 10). As predicted in the pre-construction pedshed, there is limitations in the area able to be travelled (pre-construction) due to the lack of crossings on High Street South and West to Stirling Highway. The improvement in walkability as a result of the underpasses is visible in Figure 10 below, where the amount of area travelled within 10-minutes increased (refer to yellow colour of post-construction pedshed).

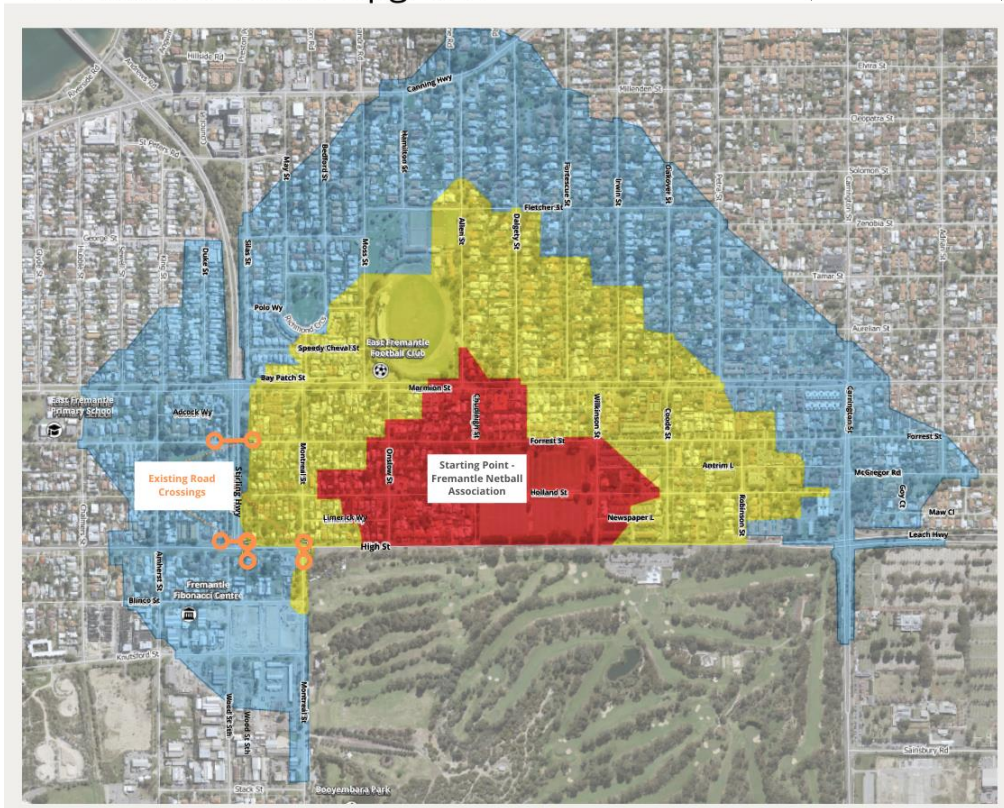
This pedshed confirms there is increased accessibility within a 10-minute and 15-minute walk from the Fremantle Netball Association (Figure 10). These improvements extend walk-ability within 15-minutes to East Fremantle Primary School, Chalmers Street, further South on Montreal and Wood Street, and through to Stark Street. An increase of 28 dwellings now fall within the 10-minute interval, from the Fremantle Netball Association (see Table 10).

Table 10: Increase in walking distances from dwellings

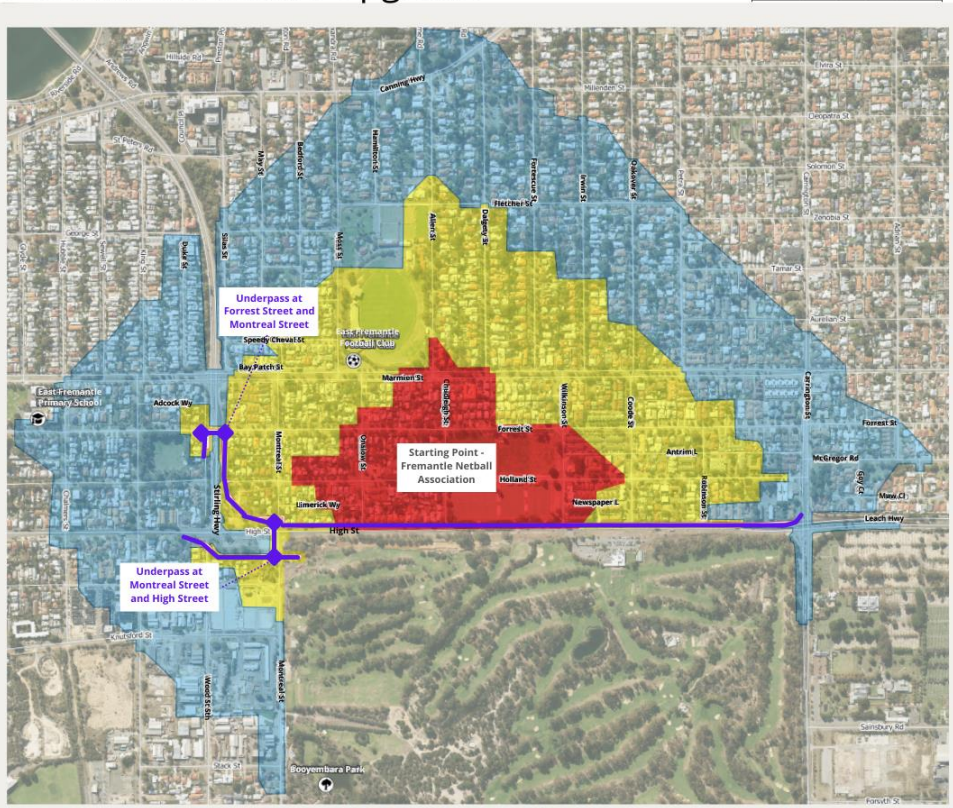
Scenarios	Walking 5min	Walking 10min	Walking 15min
Pre-upgrade	242	916	2118
Post-upgrade	242	944	2210
Difference	0	+28, 3.1%	+92, 4.3%

Walk-ability Assessment

Pre-Infrastructure Upgrade



Post-Infrastructure Upgrade



Note: Average delay time of 65 seconds applied on pre-upgrade road crossings.

Figure 10: Walk-ability Assessment

Cycle-ability

A cycling pedshed was undertaken for 10-minute and 15-minute intervals from the Fremantle Netball Association (Figure 11). This pedshed confirms improved travel times for cyclists (Table 9) and increased accessibility (Table 11).

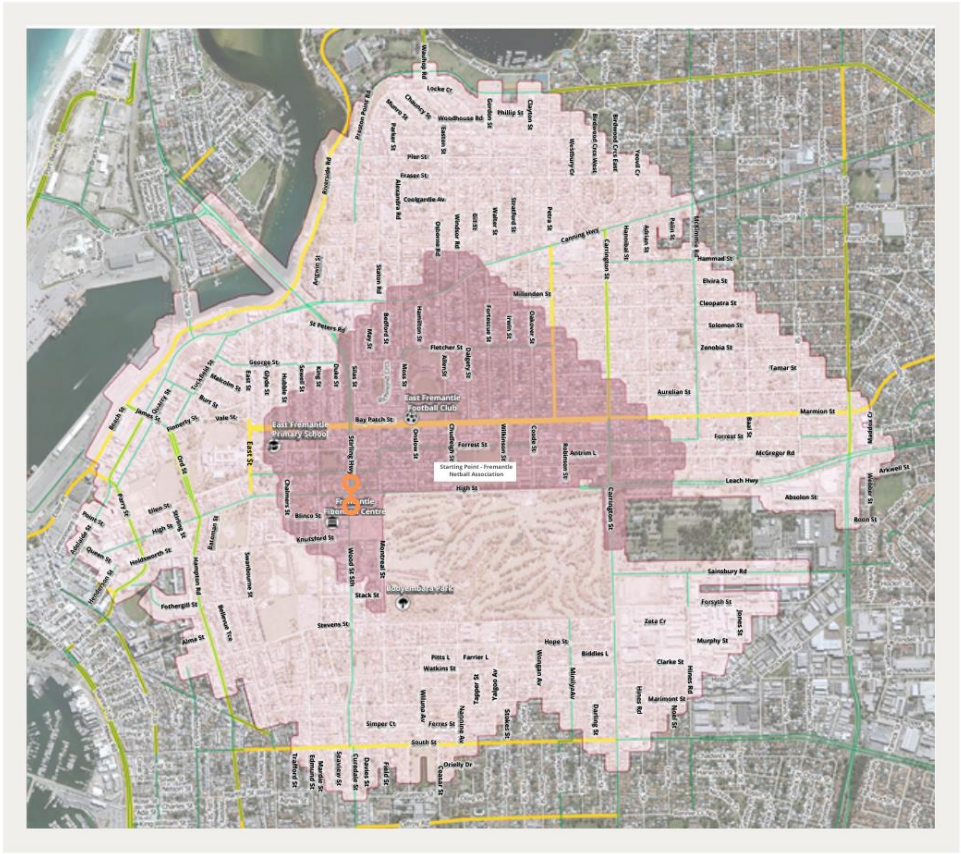
Previously, there was no continuous footpath along High Street recognised as a cyclist path by the Perth Bike Network (refer Figure 11) or the Fremantle Public Transport Walking and Riding Guide (Department of Transport). There was no access between Wilkinson Street and Coode Street, Robinson Street and Carrington Street, and of particular concern was the high slope between Robinson Street and Coode Street making it impossible to safely access. The Project will complete a new footpath between these streets and as a result allow cyclists to travel safety down this route (refer to Figure 11).

Table 11: Changes in cycling travel times from dwellings

Scenarios	Cycling 5min
Pre-upgrade	2708
Post-upgrade	2833
Difference	125, 4.6%

Cycle-ability Assessment

Pre-Infrastructure Upgrade



Post-Infrastructure Upgrade

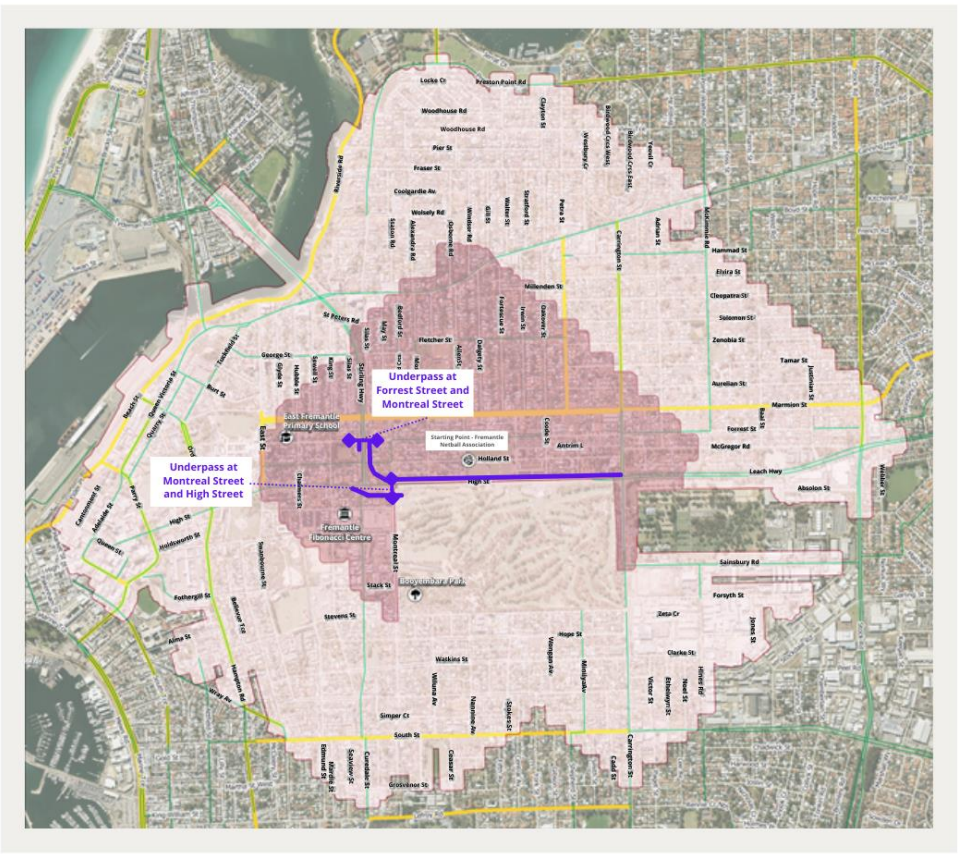


Figure 11: Cycle-ability Assessment

Social Aspects Performance

At a glance

Table 12: Social aspects performance

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	~200	1299
No. of complaints	66	105
No. of legacy commitments	3	3
No. of heritage sites in project vicinity	Nil	Nil
No. of heritage sites significantly impacted	Nil	Nil
No. of traffic safety incidents within project boundary	4	5
% of women in workforce*	7%	8%
% indigenous in workforce*	8%	8%
LTIFR	0	0
No. of development employees and apprentices on the project	34	51
No. of employees (FTEs) sourced from local community	100%	100%

^no community satisfaction surveys have been undertaken at the time of this report.
**excludes MRWA personnel*
`This project is a metropolitan based project with no fly in/fly out or remote drive in/drive out. All personnel are Perth/surrounding area based resulting in 100% employment from local community.

Social context

Engaging and consulting the community and Project stakeholders is key to the success of the High Street Upgrade Project, and a key focus of the Project.

The Project area is located 2km east of the Fremantle Central Business District (CBD). High Street and Stirling Highway serves as a main route to Fremantle and as part of the major freight to the Fremantle Port, and as such heavy vehicle numbers within the Project area are high.

Image 2: Meeting with residents to provide design updates regarding local streetscape and pedestrian underpass design.

The Project area is surrounded by medium density residential properties, and recreation areas including the Royal Fremantle Golf Club (RFGC), Fremantle Public Golf Course, Fremantle Netball Association, and Booyeembara Park immediately south of the Project.

Stakeholders include Federal and State governments, Local Government Authority (City of Fremantle), Fremantle Ports and associated freight stakeholders, environmental regulators

and groups, local residents and businesses, Aboriginal custodians, road users (including pedestrians and commuter / recreational cyclists), community groups, sporting associations and clubs, and emergency services. See Appendix 3 – List of Stakeholders to the Project.

Community & Stakeholder Engagement

Consultation and stakeholder engagement is vital to all public infrastructure projects. A comprehensive communication and stakeholder management strategy has been established, identifying key stakeholders, key Project issues and opportunities for consultation and influence, and identified key communication channels.

Stakeholders and the community have had the opportunity to influence and provide feedback regarding the Project and shape a number of design outcomes. In addition to engagement completed by MRWA, Georgiou has also:

- convened a Project Resident Reference Group;
- held community two drop-in sessions to gather feedback in relation to noise wall construction, artist design, and general Project design;
- engaged and briefed Gibson Park and White Gum Valley Resident Precinct Groups on a regular basis throughout the Project;
- engaged Fremantle Public Golf Course via the City of Fremantle, Royal Fremantle Golf Club and Fremantle Netball regarding Project design and construction impacts. RFGC in particular regarding new entrance design, and Fremantle Netball in constructing a new carpark prior to the commencement of the netball season;
- engaged with landowners where noise and/or retaining walls have been constructed on their property boundary; and
- held meetings with neighbourhood groups to provide opportunities to influence final Project design and keep the groups informed.

Heritage

The Project's design endeavours to uphold the culture and heritage of the greater Fremantle area. The new pedestrian underpasses, under construction as part of the Project, feature artworks from two prominent local Noongar artists – the Peter Farmer Group and Lance Chadd. The large-scale murals tell traditional stories of the area. At Forrest Street, Peter Jnr and Kayley Emery from Peter Farmer Group selected animals and plants representative of the Six Noongar Seasons, while at Montreal Street, Lance Chadd's artworks provides an interpretation of "Walyalup" – meaning the place of Walyo (Woylie) and is the traditional Bibbulmun Whudjook name for Fremantle.

Noisewalls built as part of the Project will feature an artwork concept based on a local story of cultural heritage within Fremantle. A selection panel of representatives from MRWA, Georgiou Group and the City of Fremantle selected local artist Penny Bovell and the chosen concept, labelled 'Terazzo Factory'. This concept is based on the designs, patterns and colour schemed of tiles produced at the Universal Terazzo Tile Factory, operating from 1950 and 1973. Located nearby 51 Blinco Street, the factory was owned by Guiseppi and Anna Scolaro

who migrated to Fremantle in 1949 from Sicily. The Scolaro tile designs are known to feature in dozens of homes throughout the Fremantle area (refer Image 3), however are a largely undocumented Fremantle story. The vibrant noise wall designs, based on a style of Terrazzo tiles will serve to not only enhance the local area but also raising awareness of a local immigration story of cultural significance.

Image 3: Example of Terrazzo tiles found throughout Fremantle.

Addressing community concerns

The community is largely supportive of the Project. Common concerns and key issues raised by stakeholders and community during the Project planning, design and delivery stages have included vegetation clearing and noise wall specifications. Concerns have also been raised regarding:

- construction impacts, particularly after-hours works
- traffic congestion and staging
- pedestrian underpass design, and
- improving pedestrian connectivity in the area; roundabout design and suitability for large vehicles; and screening properties from traffic.

A key challenge of the Project is constructing in a traffic heavy and medium density residential area with properties located in close proximity to construction works. Managing construction impacts, including minimising after-hours works has been a key aim of the Project. Lane closure trials were carried out early in the Project to demonstrate traffic flow could be maintained with the introduction of single lane on High Street, enabling the Project the prevalence of after-hours work and associated impacts on nearby community.

Traffic management and road safety

Traffic management is one of the highest risk activities on a road work site. The Project area posed a range of traffic management constraints, including:

- The high volumes of heavily vehicles associated with the Vital Port Freight link.
- Stirling Highway and High Street being part of the RAV Network 4.
- The numerous driveways and local roads connected to High Street.
- Managing light and noise impacts to the local residents during night works.
- Access and parking for Fremantle Netball Association and Royal Fremantle Golf Club.
- Maintaining and protecting mature trees and vegetation.

- Excavating for the underpasses.
- The relocation of underground and overhead utility services.
- Maintaining an acceptable level of service for the road network.
- Providing a safe passage for school children crossing Stirling Highway.

To maintain the safety of all road users, pedestrians and workforce, the following specific road safety treatments planned and implemented on the Project include:

- Traffic management planning using a hierarchy of control process (ideally traffic around the work area).
- Detailed traffic management staging (closing right-turn movements to and from High Street).
- Road closures and providing adequate detour routes.
- Installation of temporary barriers separating the worksite from traffic.
- Geometric design to meet MRWA accepted temporary design standards for temporary alignments while maintaining suitable speed limits and traffic capacity.
- Desktop, pre and post Road Safety Audits of temporary traffic switches.
- Undertaking traffic analysis prior to significant modifications to the road network, including intersection layout, lane configurations and road closures.
- Designing a temporary roundabout to replace the High Street and Stirling Highway traffic signals.
- Trialling lane closures on High Street and Stirling Highway, to investigate daytime lane closures to reduce the prevalence of after-hours works and disruption, while maintaining appropriate traffic flow.
- Staging the decommissioning of street lighting to maintain existing lighting infrastructure.
- Installing permanent line marking on temporary traffic switches to improve driver's safety.
- Installing long-term speed and direction signage.
- Construction works staging to minimise traffic delays.
- Proactive communication with key traffic stakeholders including the WA Fremantle Ports Taskforce, including Port and freight representatives.
- Advanced notification of major road network changes via Variable Message Signs, Letter-drops and eDMs, Notification of Roadworks, social media, etc.

- MRWA real time travel dashboard data of High Street and Stirling Highway to advise the Project team of travel time delays or savings due to construction impacts and assist with future traffic proposals to ensure an acceptable level of service is maintained.
- Provision of traffic marshals by the Project.

Workforce Safety

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

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

- fall from heights
- mobile plant injuries
- engulfment from collapsed excavations
- electrocution or electric shock
- exposure to live services, including medium pressure gas, high voltage electricity and sewerage
- asbestos related diseases, and
- live traffic injuries.

Project initiatives to address these risks include:

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

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

Lag indicator targets

Target: Zero injuries for the Project. Lost Time Injury Frequency Rate (LTIFR) = 0

The number of reported safety incidents as of 30 June is 36.

Lead indicators

Georgiou uses lead indicators as a Health, Safety (HSE) prevention strategy. There are two categories of lead indicators used on the Project. The Project completes a number of Lead HSE Key Performance Indicators (KPI's) of workplace inspections, task inspections and behavioural observations to identify compliant and non-compliant areas. Designated Project personnel have specific KPI quotas, depending on their role. The fulfilment of the quotas are tracked weekly and reported on formally monthly. Across the past year the Project has achieved an 80% fulfilment of the HSE KPI quotas. The other category of lead indicators are various HSE communication strategies, such as Toolbox meetings, Pre-Start Meetings, Safety Is My Way Campaigns, and training. Various targets are set to be fulfilled, and these are tracked and reported on monthly.

Case Study – Donation to Fremantle Netball Association

The Project has kept close communication with the Fremantle Netball Association throughout delivery to ensure the Association is aware of all potential construction impacts including road closures, night works and detours. The team has worked diligently to avoid major netball events and work with the Association to achieve shared outcomes. We appreciate the impacts COVID-19 has had and have ensured we mitigate any additional pressures.

The Project team identified an opportunity to assist the Association with cleaning the courts, and on 15 June, the Project donated two court sweepers as a community investment initiative.

Completion of the High Street Upgrade will provide greater safety and accessibility for families attending the Fremantle Netball Association, able to safely use the new roundabout and utilise the new underpasses to walk to and from games. Our connectivity study also confirmed that for those planning to walk, network improvements will shorten travel times by an average of two minutes and 15 seconds.

Image 4: Project Manager Ben Guile and Representatives from the Fremantle Netball Association, with two new court sweepers donated by Georgiou.

Appendix 1 - List of Protected Areas Project interfaces with

The Project boundary is located partially on Class A (1.8 ha) and Class C (0.1 ha) reserves associated with the Fremantle Royal Golf Course and Fremantle Public Golf Course, established for recreation purposes. Land acquisition has been undertaken by MRWA at these locations.

A search of the Department of Biodiversity Conservation and Attractions (DBCA) database did not identify any Threatened Ecological Communities (TECs) or Priority Ecological Communities occurring within the Project footprint. Further to this, no conservation significant ecological communities listed under the EPBC Act or DBCA were recorded during the Project's field surveys (as per the Project's Environmental Impact Assessment).

Appendix 2 - Protected fauna and flora species and habitat

The below table is the DBCA Conservation list for fauna and rare or priority flora that have the potential to be found on site (or identified within survey of the development envelope – as per Figures 4 and 5) Please note that only species that have a likelihood of being found on site that can be categorised as 'unlikely' and above have been included within this list.

Table 13: Protected fauna and flora

Family	Species	Common Name	Status/Code	Likelihood of Occurrence
Apodidae	*Apus pacificus*	Fork-tailed swift	IA: Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice. Equivalent to the EPBC Act Migratory (MI) status.	Unlikely- Species migratory and rarely seen in the south west, they are areal and unlikely to utilise a terrestrial environment
Ardeidae	*Ardea ibis*	cattle egret	IA	Unlikely - The species is not known from the region and no domestic stock present
Ardeidae	*Ardea modesta*	great egret	IA	Unlikely - No habitat available for this species

Cacatuidae	*Cacatua pastinator pastinator*	Muir's corella	CD: Conservation dependent fauna. Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.	Unlikely - Species is rarely observed utilising the Swan Coastal Plain and is now restricted to the North of the Perth greater region
Cacatuidae	*Calyptorhynchus banksii naso*	forest red-tailed black cockatoo	VU: Vulnerable Species. Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.	Present
Cacatuidae	*Calyptorhynchus baudinii*	Baudin's cockatoo	EN: Endangered Species. Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 2 of the Wildlife	Unlikley - Species is rarely observed utilising the western portion of the Swan Coastal Plain

			Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.	
Cacatuidae	*Calyptorhynchus latirostris*	Carnaby's cockatoo	EN	Present
Falconidae	*Falco peregrinus macropus*	Peregrine falcon	OS: Other specially protected fauna. Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.	Likely - The species is known in the region, however use would be restricted to foraging, no breeding areas are provided in the survey area
Peramelidae	*Isoodon fusciventer*	quenda, southern brown bandicoot	P4: Priority 4: Rare, Near Threatened and other species in need of monitoring. (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to	Unlikely - Although in the species range the survey area is highly modified and unlikely to support a population of the species

			qualifying for Vulnerable, but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.	
Scincidae	*Lerista lineata*	lined skink	P3: Priority 3: Poorly-known species. Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.	Unlikely - Although in the species range the survey area is highly modified and unlikely to support a population of the species

Notes: [1] No rare or priority flora were identified in the survey of the development envelope or considered likely to occur due to the degraded nature of the survey area and lack of suitable habitat. Please note that the Wildlife Conservation Act 1950 has now been replaced by the Biodiversity Conservation Act 2016.

Appendix 3 – List of stakeholders to the Project

Table 14: Stakeholders

Stakeholder/s	Details
Federal Government	Federal Minister for Population, Cities and Urban Infrastructure Hon Alan Tudge
State Government	Minister for Transport, Hon Rita Saffioti
State Government Agencies	• Department of Transport • Department of Planning, Lands and Heritage • Department of Fire and Emergency Services (FESA) • Water Corporation • ATCO • LandCorp • Service providers
Westport Taskforce at DOT	
Other Emergency Services	• St John Ambulance • FESA • Fremantle Police
Federal Local Member	• Member for Fremantle, Mr Josh Wilson
State Local Members	• Member for Fremantle, Simone McGurk • Member for Bicton, Lisa O'Malley
Local Government	• City of Fremantle Neighbouring: • City of Melville • Town of East Fremantle
Freight and Port	• Freight and Logistics Council of WA • WA Road Transport Association • Port Operations Task Force • Freight Industry • Fremantle Ports
Media	• Metropolitan and suburban newspapers. • Radio and television, including: Fremantle Herald and Gazette, News Local, ABC, SBS, Channels 7, 9 and 10. • Travel, trade and motorist publications.
Main Roads Network Operation	• Main Roads Heavy Vehicle Services (HVS) • Customer Information Centre • RNOC
Aboriginal Land Council	• South West Aboriginal Land and Sea Council
Cycling Groups	• DOT Cycling • WestCycle

	• City of Fremantle Bike Plan
Businesses	• Royal Fremantle Golf Club • Mother India Restaurant • Montreal Street industrial area
Sporting organisations	• Fremantle Netball Association • Fremantle Public Golf Course
Schools	• East Fremantle Primary School • John Curtin College of the Arts • White Gum Valley Primary School
Local resident organisations	• Gibson Park Precinct Committee • White Gum Valley Precinct Committee
Local resident/landowners	• Landowners and residents with prescribed locality
Road users	• Residential traffic • Large freight traffic

Appendix 4 – Sustainability Policy

PROJECT POLICY

Georgiou

SUSTAINABILITY

The High Street Upgrade Project shall manage its operations to promote positive environmental, social and economic impacts. This will be done by applying the principles of sustainable development to everything we do.

In order to achieve this commitment the Project will:

- benchmark performance against the Infrastructure Sustainability framework, achieving at least 50 points;
- integrate sustainability initiatives across the Project;
- reduce lifecycle material, energy and water impacts by at least 5%;
- be ethically responsible in managing the projects we construct, the materials we procure and the people we employ;
- address sustainability risks and opportunities in the supply chain and leverage procurement to achieve sustainability objectives;
- achieve and publicly report performance against set sustainable objectives and targets on a yearly basis;
- engage with local communities to achieve shared and lasting positive legacies;
- support the culture and wellbeing of our workforce promoting workforce diversity, motivation and competence - together working towards the sustainable success of the Project;
- work towards reducing the gap in employment outcomes between Aboriginal and non-Aboriginal people through achievement of 10% Aboriginal employment and 3% Aboriginal business procurement targets;
- help increase construction industry capacity through achievement of target training rate for construction apprentices and trainees;
- facilitate the sharing of ideas, knowledge and innovation, internally and externally, that create both 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;
- design and construct infrastructure resilient to the shocks and stresses of natural hazards and climate change and
- drive to deliver sustainable profitable growth while satisfying our social, legal and contractual obligations.

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

Ben Guile
Project Manager
March 2020

SAFETY | PROFIT | RELATIONSHIPS | PEOPLE | INNOVATION

Appendix 5 – Document reference list

Bureau of Meteorology (2021). Climate Statistics for Australian locations (Swanbourne) http://www.bom.gov.au/climate/averages/tables/cw_009215_All.shtml

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Main Roads Western Australia (2018). High Street Upgrade Project Environmental Impact Assessment.

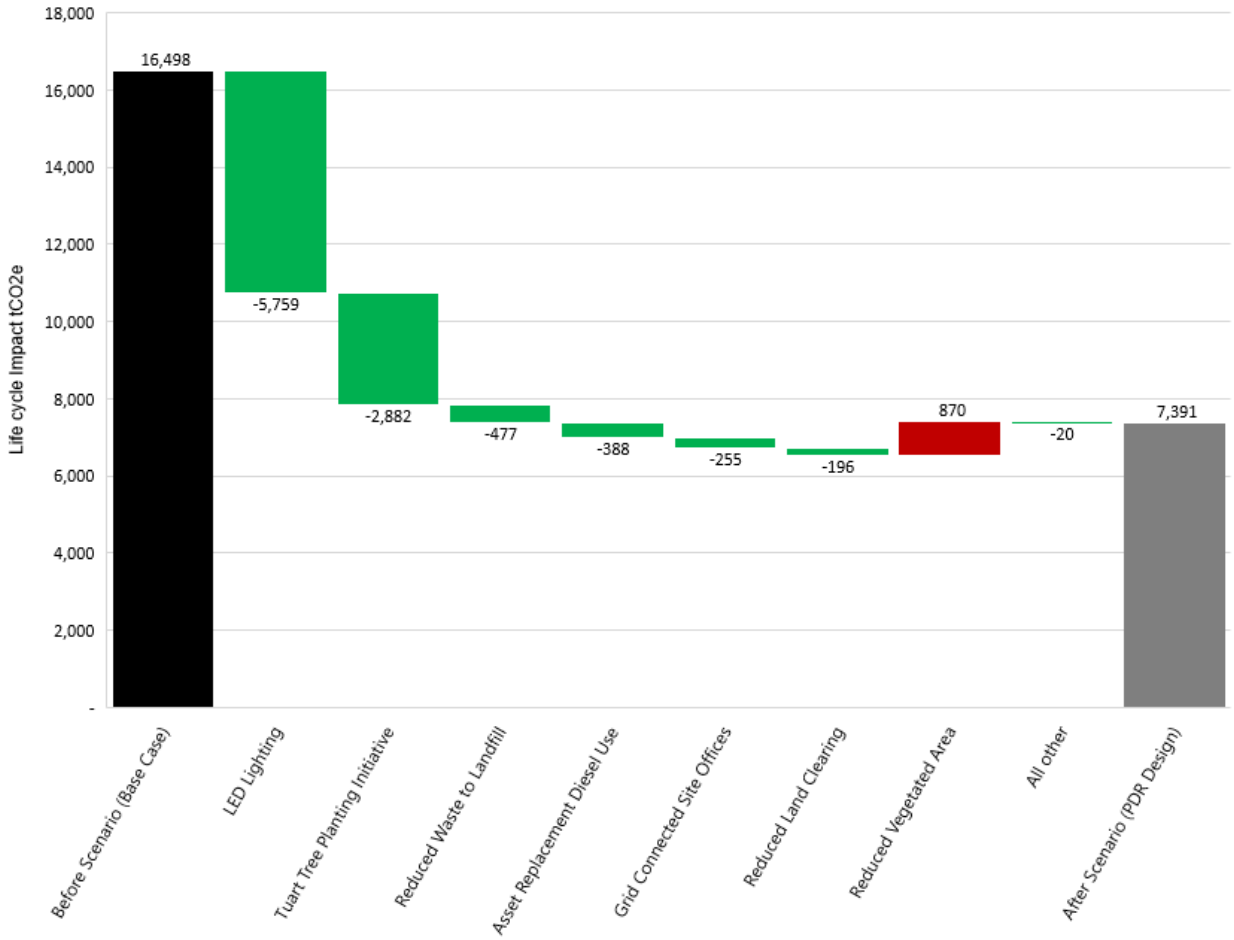
Waste Authority (2012). Waste Avoidance and Resource Recovery Strategy 2030.

Appendix 6 – Energy footprint

Table 15: Life Cycle Impacts Summary (Life Cycle Tool)

Modelled Scenario	Life Cycle Impact	Percentage Reduction	Target
Before Scenario (Base Case)	16,498 tCO2e	-	-
After Scenario (PDR Design)	7,391 tCO2e	55.2%	5%

Figure 12: Life Cycle Impacts of the Project – Design (Perspektiv Life Cycle Tool)



Appendix 7 – Improving safety

High Street is utilised by local, regional and freight traffic, and is an important access route through to Fremantle and the Fremantle Port. Previously there was a high crash rate along this 1.5km route and heightened safety risks for both road users and pedestrians due to the original layout. The objective of the upgrade is to improve safety and the general flow of traffic for all road users travelling into and out of Fremantle.

Features of the new design to reduce congestion and improve efficiency include:

- Introducing a roundabout at the intersection of High Street and Stirling Highway, with a bypass, slip lanes, and splitter islands designed for free flow traffic through the intersection (refer to Figure 2). Typically, lower speeds within roundabouts result in less serious collisions as crashes are at low-impact angles. The approach to the roundabout is slightly curved which also helps traffic slow down before entering the roundabout.
- Improving grade along High Street.
- Separating traffic lanes on High Street and Stirling Highway (refer to Figures 13 and 14 below).
- Building a single lane one-way service road for residents on the northern side of High Street, between Montreal Street and Chudleigh Street. This provides safer access for properties that currently have direct driveway access on High Street.
- A continuous median on High Street, preventing right turn movements.
- Improving signage.
- Improving sightlines and incorporating Crime Prevention Through Environmental Design (CPTED) principles.
- Removing side street and driveway connections, creating separation between heavy vehicles and residential traffic.

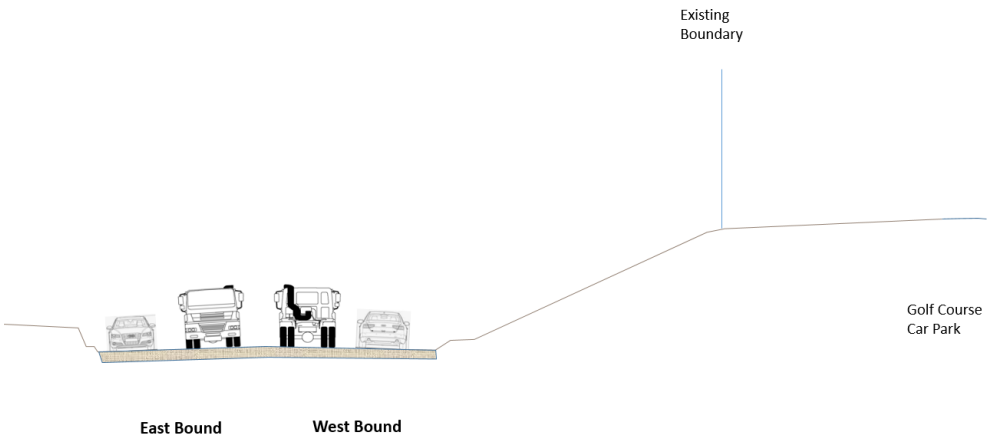


Figure 13: Previous road layout on High Street

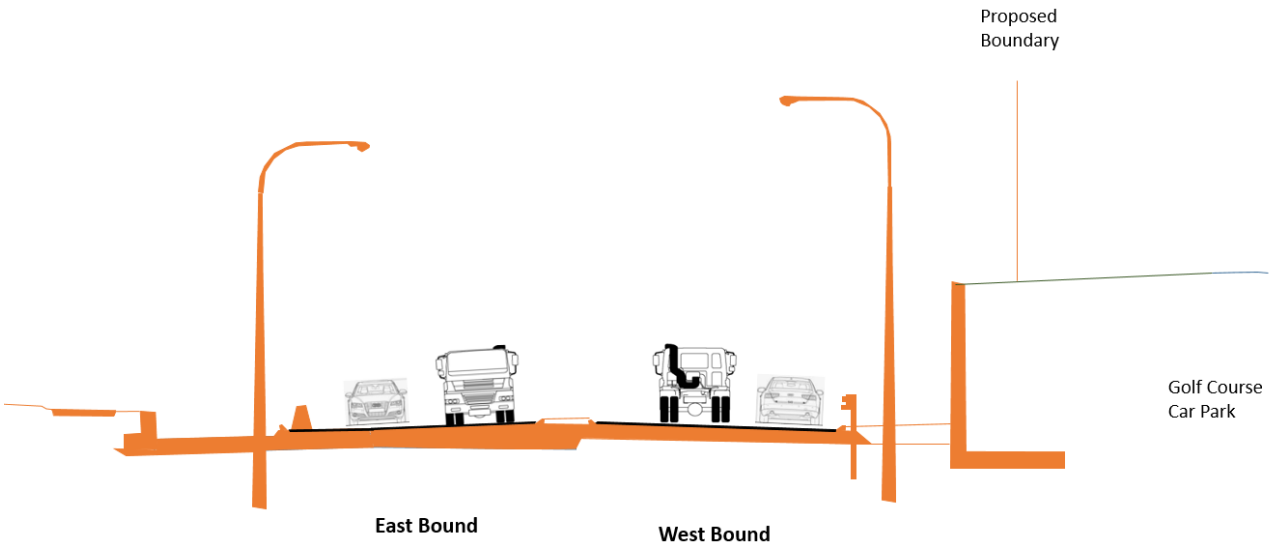


Figure 14: New road layout on High Street

Both High Street and Stirling Highway are part of the Perth Freight Link and the Restricted Access Vehicle (RAV) Network. These heavy vehicles are now separated to residential traffic and pedestrian pathways. Removal of right turn movements and the reduced travel speed required to travel through the roundabout will reduce risk of incidents.