



Australian Government



mainroads
WESTERN AUSTRALIA

BUILDING OUR FUTURE



Smart Freeway- Mitchell Southbound Hester Avenue to Warwick Road: Annual Project Sustainability Report 2021

Prepared by H2H Joint Venture

This annual report covers the period from February 13th to June 30th. No previous annual sustainability report has been prepared.

Tierney McCourt Sustainability Lead tierney.mccourt@perspektiv.com.au
Elizabeth Edwards Quality and Environment Manager elizabeth.edwards@wbho.com.au

About this Report

This report has been prepared by the Smart Freeway Mitchell Southbound: Hester Avenue to Warwick Road Joint Venture (JV) (hereinafter referred to as H2H) Project team on behalf of Main Roads Western Australia (Main Roads). 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 GRI principals. Material topics in this report have been determined through a materiality process that adheres to the Infrastructure Sustainability Council of Australia (ISCA) version 2.0 framework.

Introduction

The Mitchell Freeway is a critical transport corridor connecting Perth's growing northern suburbs with the CBD (Central Business District), Reid Highway, Kwinana Freeway and beyond. The Mitchell Freeway currently carries some of the highest traffic demands in Perth - up to 190,000 vehicles each day. With the reputation of having unreliable traffic performance during peak periods impacting productivity, the Freeway requires upgrades to improve its efficiency. To provide this, H2H will be undertaking the Smart Freeway Mitchell Southbound: Hester Avenue to Warwick Road Project (hereinafter 'the Project').

The Project will widen key bottlenecks on the Mitchell Freeway southbound, roll out Smart Freeway technology and upgrade the Principal Shared Path (PSP) network from Ocean Reef Road to Warwick Train Station. It will help alleviate congestion and improve road safety by reducing stop-start conditions often associated with traffic incidents, particularly in peak periods. The Project forms part of a suite of transport infrastructure improvements designed to support the expansion of Perth's fast growing outer northern suburbs.

The following sustainability commitments have been set for the Project:

- Promote the efficient use of resources through the reduction of energy used and waste produced and recycling of materials in all activities.
- Consider sustainability issues in key decisions for the delivery of the Project.
- Increasing local employment and local industry participation.
- Improve the sustainability performance of the Project by identifying, managing and measuring initiatives to improve sustainability outcomes on the Project.
- Meet and exceed the Project objectives for restoration and enhancement of the site.

H2H is committed to achieving good sustainability outcomes. The commitments have been integrated into the Project specific sustainability commitment statement and endorsed by Project leaders. For all environment and sustainability commitments please refer to **Appendix 1 – Project Policies and Commitments**.

Highlights

Sustainability is being actively pursued on H2H. Although we are still in the decision-making stage of many key initiatives, below is an outline of some of the potential highlights expected during Project delivery:

- Investigation of recycled asphalt pavement (RAP) recycled plastic noise walls, crumbed rubber and innovative lighting solutions for the PSP. Crumbed rubber is a likely possibility- extending the design life of the asphalt by at least 2 years.
- Incorporation of local values through urban design, as well a high level of community involvement.
- Use of innovative drone technology for surveying, saving time and minimising emissions.
- Landscaping will enhance the surrounding environment through revegetation. The use of endemic and native species will save water and improve habitat connectivity.
- Office waste will focus on minimising and tracking at least four waste streams - paper and cardboard, mixed recycling, landfill and batteries. A Containers For Change collection scheme will be adopted and will contribute towards a charity of the community's choice – selected by the Community Reference Group
- Collaboration with nearby projects will see close-by spoil set-down areas and spoil reuse, saving time, burning less fuel and producing less waste.
- Full LED lighting and lighting efficiency investigation regarding the reduction of operational energy costs. Potential savings are approximately 523 tonnes of CO₂e. That's the equivalent of 3,004,056 kilometres driven by an average passenger vehicle!

Overview

The Project works include all investigation, design and construction required to construct a third southbound lane on the Freeway between Hodges Drive and Hepburn Avenue, construct an auxiliary lane between Hepburn Avenue entry ramp and Warwick Road, upgrade the PSP between Ocean Reef Road and Warwick Station and implement a Smart Freeway system from Hester Avenue to Warwick Road. The breakdown of the Scope of Work and which components are Base Scope and which components are Optional Works, is described below.

- A third southbound lane from Hodges Drive to Hepburn Avenue, adjacent to the freeway median.
- An extra lane from Hepburn Avenue exit ramp to Warwick Road entry ramp, to provide a safe distance for motorists to enter or exit the freeway.
- Smart Freeway technology, coordinated ramp signals and modifications to entry ramps from Hester Avenue to Warwick Road.
- Emergency stopping bays and an emergency breakdown lane.
- Noise and amenity walls where required.
- Concrete barriers adjacent to the rail reserve from Hodges Drive to Reid Highway.
- Safety barriers adjacent to the verge from Hodges Drive to Warwick Road where required.
- Shared path construction and upgrades to provide continuous path from Ocean Reef Road to Warwick Train Station.

The \$76 million freeway upgrade Project is jointly funded by the Australian (\$38 million) and State (\$38 million) governments. The Project is also delivering northern portion of the \$140 million Smart Freeways Project. The expected construction completion date set for July 2022. Landscaping and ITS testing and commissioning is expected to be completed by October 2023.

Delivery Update

Following tender negotiations, the Project was formally awarded to H2H in February 2021, as such this report marks the first annual sustainability report for the Project. Since commencement, the project management team has mobilised to Balcatta and is currently operating out of one main office. A Project materiality and kick-off workshop was held on 14th May with representatives from Main Roads and H2H (Construction and Design) in attendance. Feedback from the Materiality workshop during the kick-off indicated that IS environmental credits were of material value, as well as stakeholder and economic credits.

H2H's design packages are now progressing through 85% design and are in Preliminary Design Review. Sustainability design requirements will be documented, which comprise of the collation of sustainability initiatives developed by the H2H's design team.

As the Project design progresses, procurement packages and schedules are being refined with an anticipated construction procurement to be finalised in the coming months. Outlined in Table 3 below is the Project's key sustainability milestones during the reporting period.

Figure 1 below illustrates the basic Project scope. For further details see: <https://www.mainroads.wa.gov.au/projects-initiatives/projects/metropolitan/smartfreeways/>

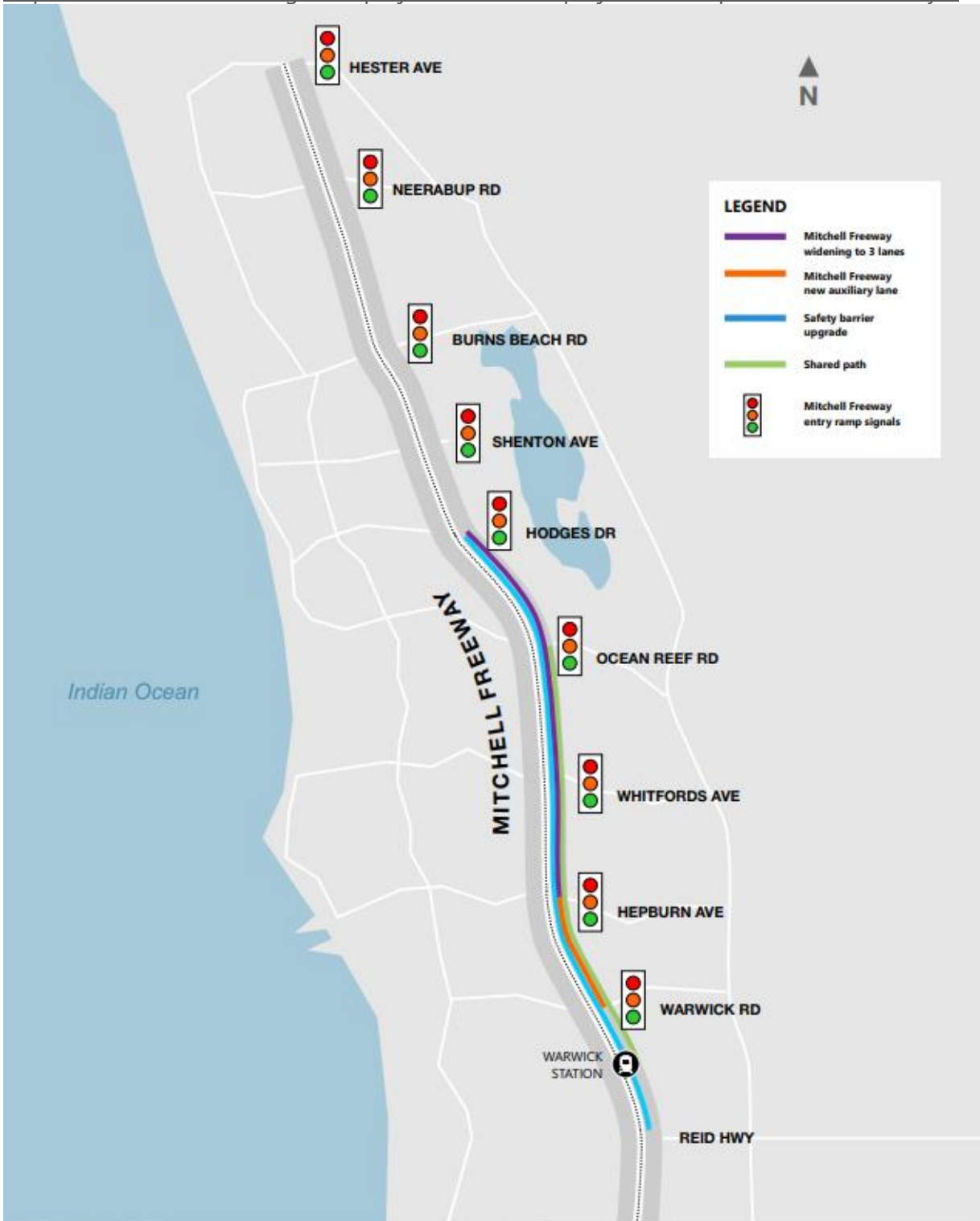


Figure 1 Project Location and Scope

H2H Objectives

The main objectives of the Project are to:

- Create more reliable journey times
- Reduce congestion, particularly during morning peak
- Alleviate pressure on local roads
- Allow traffic to be managed in real-time
- Use existing infrastructure more efficiently to cater to future demand

Key Project Stakeholders

The key stakeholders to the Project are listed below.

- City of Joondalup
- Local Educational Groups
- Residents
- Business operators
- Road Users

Overall approach to Sustainability

The following sections provide context on the Project during the reporting period.

Sustainability Framework

H2H is committed to incorporating sustainability objectives and targets into its systems and throughout all aspects of the Project. The Project sustainability environment and commitment statement outlines our social, environmental, economic and governance sustainability commitments (Appendix 1). This is supported by the Main Roads Environment and Sustainability Policy which provides a framework for Project strategies, which flow into the setting of Project objectives and contract obligations. H2H will pursue a rating of >40 under the ISCA rating scheme.

Sustainability Management

Sustainability will be managed throughout the Project using the sustainability management plan, which outlines the Project's key objectives, obligations and requirements and the management systems that will be used to monitor them. The ISCA V2.0 framework is being utilised on the Project as a management framework to oversee key impact areas, minimising the Project's footprint. H2H's environmental management system is accredited to the ISO14001 standard and will be adopted across all aspects and activities during the design, construction and commissioning phases of the Project by H2H.

To ensure sustainability principles are embedded in the Project culture across all disciplines, sustainability leadership is being driven by project management during the detailed design phase, which will be continued throughout the delivery of the Project. Led by the Project Manager, the leadership team is comprised of representatives from a range of disciplines within the Project Team. Key roles on H2H include:

- Project Manager
- Construction Manager
- Sustainability Manager

- Site environmental Manager
- Community and Stakeholder Manager
- Aboriginal Participant Coordinator
- Services Manager
- Design and Construction Interface Manager
- Design Manager

Sustainability Targets

The Project has also established sustainability objectives, taking into account risks and opportunities and compliance obligations. The sustainability targets are detailed in Table 2 below.

Table 1 Project Sustainability Targets

Category	Minimum Targets	Aspirational Targets
IS As-Built Rating*	40 - Silver	IS V2.1 Rating of >50
Energy Efficiency*	A 5% reduction in emissions which must include the investigation for the use of a combination of electric and hydrogen fuel cell vehicle and plant.	Achieve a minimum of 15% reduction in GHG emissions.
Resource Strategy Development*	Resource Efficiency Strategy and Action Plan to align with the WA Waste Strategy 2030 and must include the consideration of avoiding the use of single use plastics, and the use of recycled asphalt, crushed recycled concrete and crumbed recycled rubber.	Between 80 to <100% by volume of spoil diverted from landfill.
Material Lifecycle Impact	A 5% reduction target.	A 15% reduction in embodied impacts from materials.
Reduction in Water*	A 5 % reduction in water usage.	A 15% reduction in water use

Material Sustainability Issues

Sustainability performance updates are reported to upper management and Main Roads on a monthly basis. To accompany monthly updates the annual sustainability performance is provided to Main Roads as an annual report (this document) that aligns with the requirements and intent of the GRI Standards.

The Global Reporting Initiative (GRI) Standards are widely used across all industry sectors nationally and internationally as a framework to help businesses communicate their impact on critical sustainability issues. As such GRI has been used as a guidance tool in developing this report, and this report is the H2H Joint Venture’s first step towards alignment with contract requirements and GRI Standards. Using the GRI framework, H2H has found the following ISCA credits (Table 2) as the most material, giving the Project an idea of where to focus efforts and maximise impact.

Table 2 Material Infrastructure Sustainability Credits

Rank	Credit
1	Material Life Cycle Impact Measurement and Management
2	Ecological Protection and Enhancement
3	Stakeholder Engagement Strategy
4	Stakeholder Engagement and Impacts
5	Options Assessment and Significant Decisions
6	Integrating Sustainability
7	Climate and Natural Hazards Risks
8	Avoiding Water Use
9	Appropriate Use of Water Sources
10	Energy Efficiency and Carbon Reductions

The economic, environmental and social performance on these material areas only includes Project data to date, H2H partners and parent organisation generated and gathered information is reported separately to this report.

Environmental Aspects Performance

At a glance Environmental context

Table 3 Environmental Context

Aspect	Year to 30 June	Total to for Project
Forecast Clearing (ha)	0	0
Clearing permit allowance (ha)	100	100
Actual clearing to date (ha)	0	0
Rehabilitation/revegetation planned (ha)	0	0
Actual rehabilitation/revegetation to date (ha)	0	0
Environmental offset via Monetary contribution actual (\$)	0	0
Total Water Consumption to date (kL)	3.8kL (potable)	3.8kL (potable)
Total water licence allowance (kL)	30kL (potable) 0 (non-potable)	30kL (potable) n/a (non-potable)
Total GHG emissions (scope 1, 2 & 3) to date (t CO ₂ -e)	Approx. 1000 t CO ₂ -e	Approx. 1000 t CO ₂ -e
Total energy consumption to date (mj)	502.08	502.08
Total quantity of recycled content used in project (t)	0.1 [^]	0.1
Total imported materials used in project (t)	0.187	0.187
Total waste generated by project (t)	0.1	0.1

[^] recycled line paint used

The Project is located between Hester Avenue to Warwick Road and lies primarily within the local government authority boundary of the City of Joondalup, with a portion in the City of Wanneroo (Project area). The Project area covers an 99km² which encompasses a diverse range of natural areas including 17km of coastal foreshore, a chain of linear freshwater wetlands and a variety of bushland ecosystems¹.

As the Project may potentially impact habitat that has been identified as ecologically sensitive, the Environmental Management Plan has been developed. The plan prioritises minimising ecological impacts and outlines the process for rehabilitation and environmental enhancement. Two Environment Protection and Biodiversity Conservation Act 1999 threatened ecological communities (TECs) listed under the *Environment Protection and Biodiversity Conservation Act 1999* occur within 10km of the Project. These TECs are the Tuart woodlands and forests of the Swan Coastal Plain. Other than our environmental policy and commitments, the Project is seeking to not only minimise environmental impacts to these areas, but improve and enhance the TECs if possible.

Impact assessments of the Project have identified a variety of endemic species of flora and fauna. These species have been integrated into urban and landscape design, to ensure the ecological habitat is preserved and improved. Weed infested areas are currently being identified, which will be removed and properly disposed of under the Project's weed management plan. A key aim of rehabilitation is to ensure the long-term stability of soils, landforms and hydrology required for the sustainability of sites. Another main purpose of rehabilitation is to partially or fully repair the capacity

¹ City of Joondalup (2018, pp 7). Craigie Bushland Management Plan. <https://www.joondalup.wa.gov.au/wp-content/uploads/2019/07/Craigie-Bush-Management-Plan-1.pdf>

of ecosystems to provide habitats for biota and services for people.

Environmental Management

H2H will continually determine the boundaries and applicability of the Environmental Management System (EMS) to establish its key policies and standards on the Project. When determining this we will refer to our policy commitments **Appendix 1 – Project Policies and Commitments**.

H2H has identified the following objectives relating to environmental management:

- Minimise the impacts of construction work equipment in the vicinity of fauna and fauna habitat
- No wastewater / chemicals including hydrocarbons entering waterways or groundwater
- Minimise waste by means of reuse and recycling wherever practicable
- Minimising the release of dust particles
- Prevention of soil erosion
- Minimisation of vegetation clearing
- Timely rehabilitation
- Nil environmental incidents and,
- Nil customer or community complaints.

As the Project has identified potential environmental impacts (**Appendix 2 - List of Protected Areas** Project interfaces with:), specific initiatives are being developed to ensure environmental compliance and benefits. These include but are not limited to:

- Zero Significant Environmental Incidents (contamination, clearing breaches, or regulatory NCR's.
- Minimise Wastewater, No Acid Sulphates drainage Zero Hydrocarbons spills; Removal of Contaminated soil, Nil chemicals entering waterways or groundwater.
- Minimise the effects on the community from dust and noise generated via construction activities.
- To ensure that Project personnel are aware of and able to achieve their environmental targets through appropriate training and awareness programs.
- To maintain and improve this EMP and procedures to meet, and demonstrate that, the environmental objectives of the H2H Project are met.

Water Management

The Project lies within the Perth Coastal and Gwelup Underground Pollution Control Area, which is a Priority 3 (P3) Protection Area for public drinking water supply². P3 areas are declared over land where water supply sources need to coexist with other land uses such as residential, commercial and light industrial developments. If required H2H will obtain relevant licences under the *Rights in Water and Irrigation Act 1914* or other applicable legislation.

H2H will avoid impact or damage to surrounding buildings, vegetation, existing water bores or any other feature caused by changes to groundwater flow or water table height, both during construction and during the Defects Date Period. H2H will rectify any damage caused by dewatering or changes to underground flow.

² GHD (2014). Mitchell Freeway Extension- Environmental Impact Assessment

H2H will also apply management controls to ensure that excess water does not discharge into drains lakes, rivers, or other receiving waters that contains levels of salt, organic matter, chemicals, hydrocarbons, detergents or sediment that are incompatible with the receiving waters. All discharges will comply with the requirements of the relevant authorities. Discharge from any dewatering system during construction will comply with the requirements of all relevant Authorities and H2H will not cause damage or nuisance to adjacent properties.

Carbon Emissions & Energy

The main forms of energy consumption for the Project will come from plant and transport vehicles, light sources and embodied carbon within materials. High impact materials have been identified and suppliers have been informed of Project requirements surrounding the supply and management of these materials.

The Project is using environmental Life Cycle Assessment (LCA) to investigate life cycle and embodied impacts of design and material procurement. Suppliers who can demonstrate any of the following initiatives to reduce the life cycle impacts of products will score well against sustainability criteria during tender evaluation:

- Reduction in material quantities through process optimization e.g. offsite prefabrication
- Low carbon or low embodied impact material alternatives that meet the technical and performance specifications
- Improved durability and maintainability, and improved whole of life cost outcomes
- Reduced social impacts e.g. local sourcing, reduced haulage, employee wellbeing programs

H2H will comply with Statutory Regulations of governmental departments having jurisdiction over the site, with respect to the light emissions and lighting control. Lighting control will be investigated now that the temporary compound locations are finalised and other temporary lighting requirements (traffic management) will be added as part of a development plan in the delivery phase.

H2H is proposing an energy efficient LED lighting option based on a comparative study conducted by the Project. The option assessment finds that two types of luminaires are suitable to achieve a like for like replacement compared to the base case (HPS lighting). A further comparison has been conducted on the suitable replacement luminaires to show the total operational savings over a 15-year design life. This investigation will help inform the decision-making process and ensure sustainability is considered when approving high impact areas like lighting design.

H2H's will work with suppliers to manage any poor sustainability performance or non-compliance identified during delivery of contracted scope of works.

Materials & Recycling

H2H ensures all material is kept to a minimum through proper planning of work, selection of economical construction methods and purchasing of materials in lot sizes, which are sufficient for the works.

H2H will apply the principles of reduction, reuse and recycling of resources generated by its activities and by ensuring the following controls are implemented:

- Liquid and solid waste materials generated on site will be adequately stored to prevent any adverse impacts on the environment

- Adequate bins will be made available on site to prevent littering, all food scraps, cigarette butts and other waste
- Waste will be stored in secured storage containers to prevent access from native and introduced fauna
- Waste scheduled for removal off site will be appropriately classified prior to disposal in accordance with the Landfill Waste Classification and Waste Definitions 1996
- General waste will be disposed of at an appropriate landfill site (Richardson Rd) in accordance with waste regulation
- Hazardous Waste will be disposed of by an appropriately licensed H2H Controlled Waste and Dangerous Goods subcontractor at regular intervals to minimise waste accumulation
- Contaminated materials will be suitably stored in bunded area
- Contaminated materials include, but are not limited to fuel and hydrocarbons used in construction and earthmoving equipment
- Maximising resources use by means of minimising, reusing, recycling, recovering, and disposing of material wherever practicable
- Waste identified post construction will be removed and
- Waste management and hazardous waste areas will be inspected at establishment and annually in April, and within 24 hours of major storm events or 48 hours if over a weekend.

The Circular Economy supports equity, transparency, and resilience which aligns with H2H's sustainability goals. H2H will apply the principles of the Circular Economy where possible when managing resources:

- Materials are cycled at continuous high value
- All energy is based on renewable sources
- Biodiversity is supported and enhanced through human activity
- Human society and culture are preserved
- The health and wellbeing of humans and other species are structurally supported
- Human activities maximize generation of societal value and
- Water resources are extracted and cycled sustainably.

Materials and waste will be managed through the resource efficiency management plan and the creation of SMART targets. Options for optimal resource efficiency are currently being investigated for office waste and on-site recycling and reuse methods and through optimisation in design.

Case Study

Although the Project is still in the early stages of design, resource efficiency options are currently being investigated. Office waste recycling initiatives are underway, with designated bins for landfill, cardboard and general recycling. The Containers For Change program is also underway at the site office.

An investigation into the use of recycled noise walls is also currently underway. The assessment provided the Project with three options including recycled plastic and hollow core noise walls. All of these options have the potential to greatly reduce the amount of materials used on the Project, as well as reducing H2H's carbon footprint.

Economic Aspects Performance

At a glance

Table 4 Economic Aspects

Economic Aspect	Year to 30 June	Total for Project
Funding	\$2,552,499.00	\$2,552,499.00
No. of vehicles per day	190,000	190,000
Travel Time Saving	n/a	n/a
Increase of vehicle capacity	n/a	n/a
Increase in cycling and pedestrian facilities (i.e. increase in PSP length)	0	0
<i>Workforce and Supply Chain</i>		
Number of people employed by supply chain at various stages of project	n/a	n/a
Total number of suppliers engaged	58	58
Total number of Indigenous Enterprise	2	2
Total number of Disability Enterprise	0	n/a
Buy Local Spend (to date)	\$1,158,561.30	\$1,158,561.30

Economic context

The H2H approach to industry sustainability is founded on two key aspects - Opportunity (via procurement) and Development. H2H recognises the significant barriers to entry for inclusion and sustainable growth for many small businesses across the civil construction industry - particularly for those who have traditionally not supplied to the public infrastructure industry. The Sustainable Industry Blueprint underpins the approach to local industry development. The vision for the Sustainable Industry Blueprint is based on three inter-related dimensions for ISO20400: Sustainable Procurement: Social, Environmental and Economic. These dimensions' drive development of regional capacity and capability with an emphasis on skills development and local jobs to maximise the impact

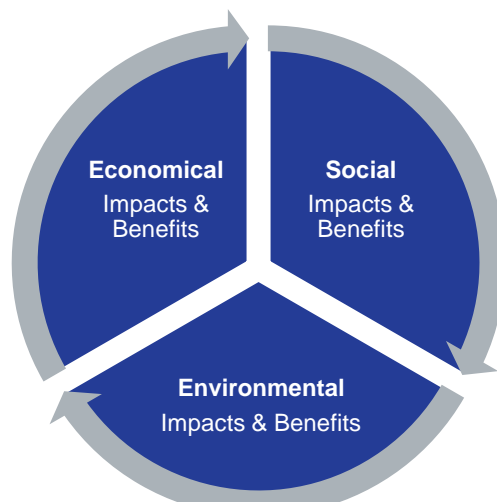


Figure 3 Approach to Industry Sustainability

and benefit of the Project. A bespoke and holistic approach is designed to deliver direct and indirect outcomes with results derived through the procurement activities and the initiatives of the people delivering the Project.

The procurement process and opportunity analysis will work with local suppliers, subcontractors and aboriginal businesses, conducting assessments of capacity and capability. This will inform development support and guidance services provided by the Project. This support includes direct support from:

- H2H
- WA Chamber of Commerce and Industry
- Noongar Chamber of Commerce
- Civil Contractors Federation WA
- Other appropriate agencies including LGA initiatives.

Aboriginal businesses will be sourced through existing corporate databases, Supply Nation, and the Noongar Chamber of Commerce and Industry. In ensuring that a culturally sensitive workplace is developed the Project will develop and implement an Aboriginal Participation Plan guided by the WBHO and NRW Reconciliation Action Plans.

Growing the Australian Aboriginal business sector has significant, measurable and positive impacts on Aboriginal and Torres Strait Islander communities. Research shows that Aboriginal businesses not only deliver innovative products and services but also employ Aboriginal people, reconnecting them to their culture, instil pride and aspiration in indigenous communities and invest back into communities.

The engagement of Aboriginal businesses is uniquely tied to the Aboriginal Employment Target of at least 8 Full Time Employees (FTE) and at least \$2 million of works or services as outlined in the Aboriginal Engagement Management Plan.

Key Economic Outcomes

H2H's key economic outcomes interface include:

- The creation and support of more than 500 direct and indirect jobs
- To provide long-term solutions to transport requirements for the booming northern suburbs
- The guarantee of work for local trades and keeping money flowing through local businesses throughout the construction phase and beyond
- To improve the overall safety and capacity of Perth's freeway system
- To ease congestion to save WA commuters and businesses precious time and money

Sustainable Procurement and Buy local

The specific objectives, strategies and deliverables required to deliver the procurement benefits are outlined in Table 5 which follows.

Table 5 Procurement objectives, strategies and deliverables

Objectives	How we can meet the expectation (minimum requirement)
Increase local employment and local industry participation	Purchase from WA companies (local content) Maximise local employment and maximise local skills development
Prioritise procurement of goods or services that improve local or social outcomes	Compile data base of local businesses Prioritise procurement from Aboriginal businesses suppliers Include local industry development requirements/targets in our purchasing contracts.
Raise awareness with supply chain partners and industry	Supplier questionnaire Guidance/Toolkit for suppliers and subcontractors.
Ensure local procurement strategy is sustainable	Inclusion of local and local industry development requirements/targets in our purchasing contracts Training of staff around social, economic and environment impact/benefits Collaboratively working with other local / Gov't projects.
Build capacity of local and Aboriginal businesses	Facilitate access and opportunity to tender on work packages Provide open and honest feedback around our tendering process Strategically develop the capability and capacity to supply for local businesses.

Appendix 4 – Local Industry Development Opportunities Identified identifies initial local industry development procurement opportunities. H2H recognises the importance and value that major infrastructure projects provide to the local economy. A key aspect of the Project is the maximised resource reuse which provides significant investment potential and capacity growth for the sector. Areas include:

- Provision of limestone subbase materials. Several local limestone quarries exist in the area and have capacity to manufacture subbase including from suitable material which is excavated in the course of the Project. This material may be backloaded to the quarry for processing or stockpiled on site for use. Established quarry product suppliers for Main Roads projects will be encouraged to partner with the smaller local quarries to assist with their development into a sustainable, quality assured production facility for this Project and future industry supply.
- Similarly, limestone block manufacturers and suppliers exist in the area and similar to subbase manufacture, opportunities will be investigated to assist these businesses with sustainable growth through partnerships and exploring opportunities through the Project for value adding to the services they provide.

Climate Change Assessments

A climate change risk assessment and workshop will be undertaken in July 2021. The Climate Change and Natural Hazards Risk Assessment is based on readily available and current natural hazard data and climate change projections considering the optimal scale and timing, and costs and benefits. The assessment is to be undertaken with a multidisciplinary internal team, government representatives and the asset operator. The process aims to provide adaptation options to all very high, high and >50% of medium climate change risks. Sustainable Transport

The widening of Mitchell Freeway aims to improve the transport and connectivity of the fast-growing northern suburbs of the Perth metropolitan area. The road currently carries some of the highest traffic demands in Perth - up to 180,000 vehicles per day. Widening the road and reducing key bottlenecks will improve traffic flows and increase efficiencies. The 10km PSP upgrade will improve the accessibility within the area, supporting sustainable movement and travel.

Social Aspects Performance

At a glance

Table 6 Social Aspects

Social Aspect	Year to 30 June	Total for Project
Community Satisfaction to Project	TBC	TBC
No. of Stakeholders engaged with during project development	1128	1128
No. of complaints	13	13
No. of legacy commitments	2	2
No. of heritage sites in project vicinity	2	2
No. of heritage sites significantly impacted	0	0
No. of traffic safety incidents within project boundary	0	0
% of women in workforce	<5%	<5%
% indigenous in workforce	<2%	<2%
LTIFR	0	0
No. of hours training during project	104	104
No. of development employees and apprentices on the project	0	0
No. of employees (FTEs) sourced from local community	18	18

Social context

The Project is occurring against a backdrop of potential roadworks fatigue in the northern suburbs; a traffic load of 60,000 vehicles a day on the Mitchell Freeway southbound; a high density residential area; connections to major arterial roads; and community expectations in relation to noise mitigation. Effectively communicating the complexities of the Project's scope is critical for the community and stakeholders to fully understand the Project rationale and benefits.

The expected social outcomes for the Project include:

- Improved safety, leading to more reliable journey times and provide congestion relief to more than 60,000 motorists per day that use Mitchell Freeway southbound.
- Combined with travel time savings of up to 7 minutes already being experienced as a result of the recently completed Cedric to Vincent Street upgrade, people living and working in the northern suburbs would enjoy travel time savings of up to 14 minutes travelling southbound on Mitchell Freeway from Hodges Drive to Vincent Street during the morning peak period compared to 2017.
- The WA Government's WA Recovery Plan is the next important step in WA's COVID-19 journey that will help drive economic and social recovery across the State and create a pipeline of jobs for Western Australians.
- Sustainability and development by increasing efficiencies to residential and business growth areas in the northern suburbs.
- Both new and upgraded shared paths will be constructed to create a high standard route between Ocean Reef Road to Warwick Station with minimal interruptions and separation from vehicular traffic.

Community & Stakeholder Engagement

H2H will liaise closely with local stakeholders and the community throughout the construction process. This includes residents directly bounding the freeway reserve, as well as relevant business owners, amenity groups and neighbouring landowners. Broadly, the key issues for this Project relate to construction impacts and perceived impacts on future amenity for adjacent residents.

H2H has outlined key targets and commitments for the Project in our Community and Stakeholder Management Plan as well as within the Sustainability Management Plan. These plans will enable H2H to actively manage and monitor stakeholder satisfaction on the project. The overarching approach to stakeholder and community engagement will be to provide accurate, timely and relevant information to all stakeholders, to ensure maximum awareness and understanding of the project, its aims and benefits. Some of our objectives relating to engagement include:

- Meet and/or exceed community and stakeholder expectations in relation to engagement
- Proactively share information with the community and stakeholders – a ‘no surprises’ approach
- Minimise the risk of issues escalating via early issue identification and mitigation
- Generate awareness of and support for the project, including its core objectives
- Understand stakeholder and community aspirations, opportunities, issues and concerns associated with the project
- Obtain community buy-in to the project development and design and construction methodology, ensuring where possible that the project reflects the wishes of the community
- Ensure that works can be undertaken with the least amount of impact as possible and;
- Build strong, ongoing relationships with the local community, improving levels of trust and confidence in Main Roads and its vision for the road network, especially as it interfaces with businesses, schools and residential areas.

Targets for stakeholder engagement include:

- Engagement with 100% of residents and road users falling within the project boundary.
- Timely resolution of complaints
- 100% awareness of complaints and queries mechanism
- Highest impacts relate to improvements to the area

Research shows that H2H are reaching their targets in the area of stakeholder engagement with the majority of residents being aware of the Project engagement system and therefore reaching targets in timely response and awareness about the Project. Overall, 2 in 3 residents and road users are aware of Project ongoing along the Mitchell Freeway. H2H’s research also outlines that 3 in 4 feel that the information they have received is useful and relevant while around 2 in 3 find the information to be honest and provided in a timely manner. The general public also has the ability to influence the Project through surveys, community engagement groups and through the Project’s contact phone line.

At this stage, around half of residents feel that the concerns they have with the Mitchell Freeway projects have been considered or addressed. This was slightly higher among male and younger

residents (17-34 years old).

Notably however, only 1 resident has currently had any personal contact with a member of the Smart Freeway Mitchell Southbound Project team. Importantly, the resident had a positive experience with this team member as they were satisfied with all aspects of the project communication, project team and felt that their concerns were addressed.

Heritage

H2H recognises the importance of protecting indigenous heritage sites and understands that it is an offence to interfere with a registered site without the consent of the Western Australian Minister of Aboriginal Affairs. Heritage requirements will be included in the H2H Project induction to ensure all personnel are aware of the cultural significance of those sites and what they mean to the Aboriginal people. In the event that an indigenous site (as defined in the *Aboriginal Heritage Act 1972*) is identified in an area undergoing disturbance, H2H has an unexpected finds procedures and systems in place to ensure the matter is dealt with swiftly and carefully.

Road Safety

The 2015 Australian Infrastructure Audit projected that the Mitchell Freeway would become the most congested corridor in Australia, with demand expected to exceed capacity well before 2031. While recent modelling scales back the projected rate of population growth in the region compared to the rate used in the Audit (reflecting the slower rate of growth in Western Australia following the mining boom) growth in the region will still increase congestion along the corridor.

Congestion is currently characterised by frequent stop–start conditions that are directly contributing to an increasing number of rear-end crashes and compromising road safety. The travel time delays associated with these events will increasingly result in nationally significant losses to productivity. The Project will improve traffic conditions and road user safety and will take into account the communities and organisations that may warrant separate treatment for road safety.

The Project's traffic management plan considers relevant risks associated with the works and surrounding communities including schools, road users, Project staff and businesses. The plan also considers road weather conditions and other hazards that may impact the Project, ensuring these are managed effectively.

Traffic Management / Community Safety

The traffic management plan will be reviewed and updated to ensure any potential risks are mitigated. Traffic Management Planners will undertake hazard identification and risk assessments which will consider all impacts to work personnel and motorised and non-motorised road users including delays, traffic accidents and road conditions.

Workforce Safety

All H2H management and supervisors will foster a complete safety culture which impacts on all aspects of project planning and implementation. H2H's Total Safety Culture focuses on the three elements of People, Behaviour and Environment. This shall be maintained through the Project.



Figure 3 Safety Culture

A “safe system of work” requires all three elements to be deployed effectively. Of the three areas, the behaviour of people, while working in a given environment can have a significant influence on the level of risk for any given task. It is through developing a total HSE awareness culture that we can focus on achieving our goal of an incident free workplace. In particular, by focusing on management leadership and employee involvement, H2H will be able to better manage HSE issues, as well as the other key focus areas of Workmanship, Schedule and Cost.

All personnel on this Project will always strive to improve the work environment and remain vigilant to hazards and risks.

H2H Total Safety Culture can be measured by:

- An increase in the number of Hazard Observations reported
- Number of observations conducted
- Percentage safe versus at-risk behaviour performed
- Number of employees-led safety meetings
- Percentage of participation in observations process
- Frequency of peer coaching.

H2H has in consultation with its workforce identified 4 Critical Risks (CRITRISK). These are Not Negotiable controls have been put in place and communicated to the workgroups. These are detailed further in *Figure 4*



Figure 4 H2H Critical Risks

All construction activities are covered by safety legislation and everyone involved has an obligation to maintain health and safety in the workplace. The general duty of care is a basic concept concerning the overriding responsibilities of employers and employees. Legislative duties of employers and employees are communicated to personnel as part of the site-specific induction process.

Workforce Development

All sub-contractors and suppliers must maintain records of any sustainability management training, skill assessments and evaluation undertaken as part of contract delivery. H2H will refer to training evaluation and feedback as evidence within the IS Rating submission and will use this information to improve the quality of sustainability training delivered on the Project. All personnel, sub-contractors,

suppliers and visitors must also undergo an induction before commencing work on-site. The induction will address Project-specific sustainability issues, including the Sustainability objectives and targets as well as the Sustainability expectations of employees, sub-contractors and suppliers

Through targeted, consistent, and interactive communication at every stage of the Project, sustainability will be embedded into the culture and performance of the Project team; this includes the establishment of sustainability leadership meetings which will begin in June 2021. Sustainability awareness education for the Project and design team has commenced and will continue through the design and delivery using several forums. We will introduce systems for tracking, monitoring and assessing sustainability metrics and initiatives and will ensure the outcomes of these systems inform Project activities. The Environment and Sustainability Team will drive sustainability initiatives on the ground through continuous engagement with the Project team, design team, construction workforce, subcontractors and suppliers.

Appendix 1 – Project Policies and Commitments

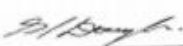



Mitchell Freeway Southbound Upgrade – Hodges Drive to Hepburn Avenue


Environment and Sustainability Commitment Statement


As a project Team, to achieve our environmental and sustainability objectives we will:

- Comply with all environmental and legal requirements and approval conditions applicable to the project.
- Promote the efficient use of resources through the reduction of energy, materials and water used, by reducing demand, using lower impact alternatives and offsetting residual impacts where viable.
- Consider environmental & sustainability issues in our project's biggest risks and opportunities and integrating them in key decisions for the delivery of the project.
- Select suppliers and sub-contractors with a strategic approach to procurement, that considers environmental and sustainability performance and pioneering initiatives in sustainable design, process and advocacy.
- Engage with the relevant stakeholders and community representatives to build strong relationships and ensure input & inclusion on negotiable issues.
- Provide training and feedback to all employees and subcontractors to ensure they understand WBHO's policies and procedures for the preservation of the environment.
- Develop local industry skills, including by implementing suitable training and recruitment programs, promoting a constructive and positive workplace culture for all people involved with the project, and building a diverse and inclusive workforce.
- Adopt best practice urban and landscape design, pursuing opportunities to achieve green infrastructure, ecological enhancement, heritage interpretation, water quality improvement, flood mitigation and community well-being.
- Meet and exceed the project objectives for restoration and enhancement of the site and manage temporary impacts on local water, noise, vibration, air quality and light receptors.
- Ensure our solution contributes over the long term towards greater local and regional resilience, including in relation to natural hazards and climate change.

Signed:  Date: 27.04.21
Stuart Douglas
H2H Project Manager

Signed:  Date: 27.04.21
Tierney McCourt
H2H Project Sustainability Lead

Signed:  Date: 27.04.21
Patrick Illot
H2H Project Sustainability Manager

Signed:  Date: 27.04.21
Peter Galloway
H2H Environmental Manager



We care, Integrity, Collaboration, Excellence

SUSTAINABILITY POLICY

WBHO Infrastructure Pty Ltd (WBHO-I) recognises that its activities can have significant and long term effects on the environment and social aspects within the communities in which we live. WBHO-I applies a holistic approach to sustainability by integrating the concept into our core business strategy.

Sustainability has been embraced by WBHO-I as "business as usual". This is achieved by focusing on the dedication of resources to manage our business along with the commitment both internally and externally to operating in a sustainable manner.

At WBHO-I we are committed to the following sustainably practices:

- Providing safe communities and positive workplaces for our employees and subcontractors.
- Preventing and mitigating pollution and degradation, and anticipating and adapting to climate impacts, we avoid potential operational delays, remediation costs, fines and legal fees, and enhance our relationships with the communities and markets in which we operate;
- Actively being involved with the communities in which we work by seeking local participation in our workforce and supporting community events.
- Acting with integrity, honestly and respectfully in all relationships with our stakeholders.
- Nurturing a united and collaborative culture within the business to ensure all our employees are supported to achieve excellence and integrate governance, economic, environmental and social considerations into their roles.
- Innovation is seen as a key to success and allows the company to deliver services that satisfy the governance, economic, environmental and social needs of our clients.
- Using resources efficiently by minimising waste and promoting the delivery of environmentally and socially responsible projects.

WBHO-I has developed Core Values which is communicated to its workforce, these are the values that all WBHO-I and our subcontractors are expected to uphold while working on any WBHO-I project.

WE CARE

About the safety and wellbeing of everyone we work with, our families and our future
About the sustainability of our environment
About the communities in which we work

INTEGRITY

Deliver on our commitments
Be honest and forthright
Do the right thing even when no one is watching

Policy Number: HSE-POL-022
Date Reviewed: 13/10/2020
Next Review Date: 31/03/2022





We care, Integrity, Collaboration, Excellence

COLLABORATION

Engage and communicate proactively, effectively and positively
Value relationships and mutual respect
Collectively align what we do for the purpose of achieving our common goals

EXCELLENCE

Take ownership and pride in what we do
Provide quality and sustainable outcomes
Encourage a culture of continuous improvement



Will Grobler
Executive General Manager

Policy Number: HSE-POL-022
Date Reviewed: 13/10/2020
Next Review Date: 31/03/2022





We care, Integrity, Collaboration, Excellence

CLIMATE CHANGE POLICY

WBHO Infrastructure Pty Ltd (WBHO-I) is an infrastructure company conducting business in the civil, roads and earthworks sector. WBHO-I understand that global warming results in changes to the planet's general weather patterns and understands that the risk is greenhouse gases (GHG's) that are emitted by human activities. The greenhouse effect is the problem caused by increased quantities of gases such as carbon dioxide in the air. These gases trap the heat from the sun, and cause a gradual rise in the temperature of the Earth's atmosphere. As such WBHO-I fully acknowledges that climate change has a negative effect on sustainability and we have to make a concerted effort to conduct our business in a more energy efficient and sustainable manner by implementing a balanced and cost-effective approach to limit climate change.

WBHO-I recognises that climate change has the following effects:

- Higher average global temperatures - more intense and longer droughts and heatwaves, resulting in water shortages.
- Ecosystems - through temperature rises, water shortages, increased fire threats, drought, weed and pest invasions, intense storm damage and salt invasion
- Rises in sea levels - Increased ocean temperatures are melting glaciers and ice caps all over the world
- Ocean Warming - The oceans are absorbing most of the extra heat and carbon dioxide (CO2) so far – more than the air – making the seas both warmer and more acidic.
- Species - one in six species are at risk of extinction because of climate change. To survive, plants, animals and birds confronted with climate change have two options: move or adapt
- Changes in average rainfall patterns and frequency of rainfall
- Extreme weather events such as bushfires, cyclones, droughts and floods.
- Erosion - Rising sea levels and more frequent and intense storm surges will see more erosion of Australia's coastline, wearing away and inundating community and residential properties.
- Health - Increasingly severe and frequent heat waves may lead to death and illness, especially among the elderly. Higher temperatures and humidity could also produce more mosquito-borne disease.

WBHO-I has identified possible climate change objectives and targets:

- Energy efficient installations and site establishment – LED lights, solar power etc
- Energy conservation by using electricity efficiently - sensor lights, computer power saving modes etc.
- Waste Management programs including recycling

Policy Number: HSE-POL-023
Date Reviewed: 09/06/2020
Next Review Date: 30/06/2022





We care, Integrity, Collaboration, Excellence

HEALTH, SAFETY AND ENVIRONMENT POLICY

WBHO Infrastructure Pty Ltd (WBHO-I) is dedicated to protecting the health and safety of its employees, and to the protection of the environment throughout its business processes.

To achieve this, management will:

- Comply and continually review all applicable legal and other requirements and fulfill all compliance obligations.
- Establish and continually review measurable objectives and targets to ensure continual improvement aimed at the prevention of environmental pollution and work related injury and illnesses.
- Ensure continual improvement strategies are implemented and actively maintained.
- Provide training and education to all employees and subcontractors to ensure they understand the company's policies and procedures for the preservation of health and the environment.
- Actively encourage consultation and communication with the workforce and other stakeholders in regards to environmental protection and occupational health and safety matters.
- Setting a measurable example of leadership in the field of our Occupational Health Safety and Environmental Management.

These actions are an expression of WBHO-I's commitment to the Health, Safety and Welfare of its employees and the communities in which we work, and to the sustainable development of our environment.

To effect this policy WBHO-I has undertaken to develop, establish and maintain integrated Health, Safety, Environmental and Quality Management Systems based on ISO 45001:2018, AS/NZS 4801:2001, ISO 14001:2015, ISO 9001:2015 and the Government Building and Construction WHS Accreditation Scheme.

Will Grobler
Executive General Manager

"Be Safe-We Care"

Policy Number: HSE-POL-001
Date Reviewed: 16/03/2020
Next Review Date: 31/03/2022



Appendix 2 - List of Protected Areas Project interfaces with:

ASPECT	Existing Environment	Potential Impacts	Further Action/Management
Aboriginal Heritage	<p>Four registered Aboriginal heritage sites intersect or are adjacent to the project footprint (Figure 2):</p> <ul style="list-style-type: none"> Site 3533 Bonorin Hill (intersects project area) Site 3505 Joondalup Drive Trees (adjacent to project area) Site 16273 Scarred Trees, Joondalup (adjacent to project area) Site 17590 Edgewater Burial Site (adjacent to project area) 	<p>No Aboriginal heritage sites will be impacted and no further Aboriginal heritage investigations are required. The project area intersects the buffer of Site 3533 Bonorin Hill but the actual site is well to the west of the freeway and will not be impacted (Appendix D).</p>	<p>No further survey required.</p>
Historic Heritage	<p>No sites on the State Heritage register or the local government municipal inventory are located within the project footprint (Figure 2).</p> <p>Four sites on the City of Joondalup's municipal inventory are in close proximity to the footprint, but outside of the road reserve:</p> <ul style="list-style-type: none"> Pinaroo Valley Memorial Park Cemetery (Place no 9497) Shepherds Bush Reserve (Place no 9487) Hepburn Heights (Place no 4522) Burial Site (Place no 8898) – corresponds with registered Aboriginal Site 17590 	<p>Unlikely to be any impact on any historic heritage site.</p>	<p>No further action required</p>
Acid Sulphate Soils (ASS)	<p>The SLIP/ASRIS database indicates that the area is classified as low risk of containing ASS. The line of lakes 2.5km east of the project (including Lake Joondalup and Lake Goolelal) is mapped as a "High to Moderate" risk of encountering ASS.</p>	<p>No impact on or due to ASS</p>	<p>Not required</p>
Air quality	<p>Perth's air quality is considered relatively clean. A large proportion of this is due to the ability for pollutants to disperse due to the strong prevailing winds.</p> <p>Air quality is well below the National Environmental Protection Measure (NEPM) Ambient Air Quality standards for all criteria pollutants, other than particulate matter (PM₁₀ and PM_{2.5}).</p> <p>Perth experiences a number of exceedances of the PM₁₀ and PM_{2.5} standards annually. This varies due to location, but is attributed to:</p> <ul style="list-style-type: none"> Vehicle emissions Wood fired heaters Industrial emissions Bushfires <p>The Duncraig air quality monitoring station is the closest Department of Water and Environmental Regulation (DWER) monitoring site. This site monitors Carbon Monoxide (CO), Nitrogen Dioxide (NO₂) and particulate matter as PM₁₀ and PM_{2.5}. The site is 200m west of the Mitchell Freeway, adjacent to the project area. Only two exceedances of the NEPM standard were recorded at Duncraig in 2018 – one each of PM₁₀ and PM_{2.5} on 17 November 2018 (DWER, 2019).</p> <p>Highest readings at Duncraig in 2018 (DWER, 2019):</p> <ul style="list-style-type: none"> CO (8 hour) – 1.5 ppm (NEPM standard 9.0 ppm) NO₂ (1 hour) – 0.038 ppm (NEPM standard 0.12 ppm) NO₂ (annual) – 0.005 ppm (NEPM standard 0.03 ppm) PM₁₀ (24 hour average) – 61.3 µg/m³ (NEPM standard 50 µg/m³) PM₁₀ (annual) – 15.1 µg/m³ (NEPM standard 25 µg/m³) PM_{2.5} (24 hour) – 48.6 µg/m³ (NEPM standard 25 µg/m³) PM_{2.5} (annual) – 7.7 µg/m³ (NEPM standard 8 µg/m³) 	<p>The additional lane on the freeway has the potential to increase the volume of traffic using the freeway due to the increase in available capacity. Additional vehicles using the freeway may then have an adverse impact on air quality, even though the widening works will result in better traffic flow in the short term until road capacity is reached. It is unlikely that this will be a significant impact.</p> <p>Ambient air quality is expected to improve rapidly with distance from the freeway. Ambient air quality will likely be back to background levels at 100 m from the freeway.</p> <p>Some adjacent residents may perceive that the widening will have an adverse impact on air quality, in particular by increasing diesel particulates from heavy vehicles.</p>	<p>Conduct an air quality assessment.</p>
Contamination	<p>The majority of the project area was remnant bushland prior to the construction of the freeway and the railway in the 1980's and 1990's and had no prior land use. Some quarrying for limestone occurred in the road reserve near Hodges Drive.</p> <p>It is unlikely that the road alignment is contaminated by a previous land use.</p>	<p>It is unlikely that any contamination occurs within the project area, other than fly-tipped ACM or contaminated fill. ACM has the potential to cause human health impacts if not handled correctly and disposed of appropriately.</p>	<p>Recommend within the EMP that the Construction Contractor develops an Asbestos Management Plan in order to manage incidental finds of ACM within the project area.</p>

ASPECT	Existing Environment	Potential Impacts	Further Action/Management
	<p>It is likely that fly-tipping has occurred in the road reserve on the verge. Asbestos containing materials (ACM) may be present within the fly tipping. The adjacent suburbs are relatively young, most being developed in the 1980's and 1990's, which reduces the likelihood of ACM being present.</p> <p>A disused sewer pressure main made of asbestos cement lies in the road reserve to the east of the freeway (outside of this project area).</p> <p>Several contaminated or remediated sites (as assessed under the <i>Contaminated Sites Act 2003</i>) occur adjacent to the project area (Figure 3):</p> <ul style="list-style-type: none"> • Craigie Water Treatment Plant – Remediated Restricted Use <ul style="list-style-type: none"> ◦ ACM are present in soils within the site ◦ Minor amounts of historical waste water treatment plant residues may be buried on the site. • Part of Lot 1 on Plan 75381 Joondalup Drive, Edgewater – Remediated Restricted Use <ul style="list-style-type: none"> ◦ Hydrocarbon contamination may be present in groundwater • 29 and 1006 Joondalup Drive, Edgewater – contaminated restricted use <ul style="list-style-type: none"> ◦ Hydrocarbons from transformer oil are present in soils beneath buildings and storage areas (historical substation location) • Lot 1001 Winton Road Joondalup – "Joondalup Bus Depot" (adjacent to Hodges Drives) <ul style="list-style-type: none"> ◦ Hydrocarbon (such as from diesel) contaminated groundwater is present as a plume in groundwater moving in a westerly direction. ◦ Hydrocarbons detected at the surface of the groundwater in 2016 at 36m below ground level <p>The DWER "Basic Summary of Records" for these sites are included at Appendix F</p>	<p>Considering the works occur in a controlled space – either the median of the freeway or the rail corridor – where there is extremely little public access, it is unlikely that fly-tipping will occur. It is therefore extremely unlikely that any ACM will be encountered, except in contaminated fill.</p>	
Declared plants (weeds)	<p>Several common weed species are located throughout the project area. The area is highly disturbed with no remnant vegetation.</p> <p>Astron (2020) recorded the following weed species in the vicinity of the project area:</p> <ul style="list-style-type: none"> • <i>Moraea flaccida</i> (One-leafed Cape Tulip) – declared pest s22(2) • <i>Lantana camara</i> (Lantana) – declared pest s22(2) (C3) • <i>Asparagus asparagoideus</i> (Bridal Creeper) – declared pest s22(2); Weed of National Environmental Significance (WONS) 	<p>Unlikely to be a significant impact.</p>	<p>Weed control to be incorporated as part of the contractual landscaping requirements</p>
Dieback	<p>There is no remnant vegetation and only a limited amount of planted vegetation within the project area.</p> <p>Due to historical disturbance in the area, it is likely that soils have been exposed to dieback.</p>	<p>Dieback may be present within the project area, but without indicator species it is difficult to determine if it is present.</p> <p>Dieback may be introduced to the project area by project activities. Conversely, dieback may be exported from the project area to uninfested areas.</p>	<p>Treat the entire site as "dieback uninterpretable" and take appropriate precautions to avoid introducing dieback to the site, or spreading from the site to other area. Precautions include:</p> <ul style="list-style-type: none"> • All vehicles and plant are to arrive on site clean and free of vegetative material and soils • All vehicles and plant are to leave site clean and free of vegetative material and soils
Dust	<p>Dust is likely to be a minor issue during earthworks. A number of sensitive receivers are located adjacent to the proposed works.</p>	<p>Dust has the potential to cause nuisance impacts on nearby sensitive receivers unless managed appropriately.</p>	<p>Standard dust mitigation measures are to be in place for a large metro project including:</p> <ul style="list-style-type: none"> • Active dust monitoring using both visual observation • Develop and implement a dust management plan • Dedicated dust complaints procedure

ASPECT	Existing Environment	Potential Impacts	Further Action/Management
Groundwater	<p>The project area lies within the Perth Coastal and Gwelup Underground Water Pollution Control Area (UWPCA) a Priority 3 water catchment area. A groundwater production bore is located adjacent to the Hodges Drive off ramp</p> <p>The project area is located in a Groundwater Proclamation Area.</p> <p>Depth to groundwater: Hodges Drive – 48.8 m bgl (3.5 m AHD) Ocean Reef Road – 21.7 m bgl (4 m AHD) Whitfords Avenue – 16 m bgl (4 m AHD) Hepburn Avenue – 14 m bgl (4 m AHD)</p>	<p>A licence is required to take groundwater and/or to construct or alter a well or bore within the Groundwater Proclamation Area.</p> <p>Consultation with Water Corporation is recommended prior to works within the protection zone around the bore at Hodges Avenue.</p>	
Hazardous substances	<p>Only common substances, such as fuel, oil and bitumen, will be used and works will adhere to Main Roads standard management actions and Safety Data Sheets.</p>	<p>The project area lies within the P3 Perth Coastal and Gwelup UWPCA, including a well head protection zone near Hodges Drive. Any spills need to be contained and remediated efficiently to ensure that there is no potential to contaminate groundwater.</p>	
Land Vesting	<p>All land in this assessment is designated road reserve, within the Metropolitan Region Scheme zoning of "Primary Regional Roads".</p>		
Noise and vibration	<p>Many sensitive receivers are adjacent to the Mitchell Freeway in the suburbs of Woodvale, Kingsley and Greenwood. Most sensitive receivers are located between Ocean Reef Road and Hepburn Avenue.</p> <p>Currently there is very little noise mitigation protecting residential receivers in these suburbs. A noise wall does currently exist along Trailwood Drive in Woodvale, from Camarino Drive to Whitfords Avenue.</p>	<p>The addition of a third lane will increase the capacity and speed of road traffic on the Mitchell Freeway. This will result in an increase in road traffic noise above the existing traffic noise.</p> <p>Out of hours construction work has the potential to adversely impact the amenity and health of residents.</p> <p>Vibration during construction will have a nuisance effect on the amenity of adjacent residents. If not managed appropriately, vibration has the potential to damage buildings and other structures.</p>	<p>A traffic noise assessment is required in accordance with the provisions of State Planning Policy 5.4 "Road and Rail Traffic Noise" SPP 5.4.</p> <p>The construction contractor is to develop and implement a "Construction Noise and Vibration Management Plan" (CNVMP) for construction works in accordance with the requirements of the <i>Environmental Protection (Noise) Regulations 1997</i> and the vibration elements below:</p> <ul style="list-style-type: none"> • Peak particle velocity for vibration is not to exceed 5mm/s at any structure • Vibration is to be monitored in real time by the construction contractor • Any complaints regarding vibration and/or noise are to be addressed within 24 hours and logged in a dedicated register • Dilapidation surveys for all structures within 100 m of the site are to be undertaken prior to works and at the commencement of works.
Reserves / Conservation areas	<p>A number of Bush Forever sites lie adjacent to the project area (Figure 3):</p> <ul style="list-style-type: none"> • Bush Forever site 407 (Woodvale Nature Reserve) • Bush Forever site 303 (Craigie Bushland) <p>One Department of Biodiversity, Conservation and Attractions (DBCA) reserve lies adjacent to the project area – Woodvale Nature Reserve, part of Bush Forever site 407 (Figure 3). This is a gazetted nature reserve under Section 5(1)(h) of the <i>Conservation and Land Management Act 1984</i>.</p>	<p>No Bush Forever site or nature reserve will be directly or indirectly impacted by this project.</p>	
Surface water/drainage	<p>No surface water drainage features occur within the project area.</p>	<p>No surface water features or drainage will be impacted by the proposal.</p>	

ASPECT	Existing Environment	Potential Impacts	Further Action/Management
	This is typical of the western side of the Swan Coastal Plain in the northern metropolitan area. The fast draining Spearwood sands rarely have any stream flow. Even lakes and wetlands are rare to the west of Lake Joondalup and Lake Goollelal.		
Visual amenity	The project area consists of a vacant road shoulder adjacent to the Butler railway line. The site has little visual amenity.	Visual amenity will not be impacted by the project activities.	
Wetlands	There are no wetlands within the project area.	Wetlands will not be impacted by the project.	
Vegetation	Astron (2020) conducted a flora and vegetation survey of the project area and the verge on the eastern side of the freeway between Hodges Drive and Hepburn Avenue. Within the project area all vegetation was determined to have been planted/landscaped, except for two remnant Tuart trees south of Hepburn Avenue (adjacent to the Hepburn Avenue southbound on-ramp to Mitchell Freeway). All other vegetation within the median is non-native.	Some planted vegetation may need to be pruned or cleared in order to allow the construction of the new safety barrier. Clearing of planted vegetation will not exceed 1 ha.	
Biodiversity	<p>Threatened and Priority Flora:</p> <ul style="list-style-type: none"> No State or EPBC listed threatened or priority flora species occur within the project area. Several records of the P4 <i>Jacksonia sericea</i> occur within 1 km of the project area <p>Threatened and Priority Ecological Communities (TEC/PEC):</p> <ul style="list-style-type: none"> No State or EPBC listed TEC or PEC occurs within the project area Tuart Woodlands of the Swan Coastal Plain TEC (EPBC) occurs in the verge on the eastern side of the Mitchell Freeway (Astron, 2020) There are several Tuarts in the median just north of the Whitfords train station. However these planted specimens do not constitute the Tuart Woodland TEC. Banksia Woodland of the Swan Coastal Plain TEC (EPBC) occurs in the verge on the eastern side of the Mitchell Freeway (Astron, 2020), in the Craigie Bushland to the west of the freeway and in Woodvale Nature Reserve <p>Threatened and Priority Fauna (excluding black cockatoos – see below):</p> <ul style="list-style-type: none"> Priority 4 <i>Isodon obesulus fusciventer</i> (Quenda, Southern Brown Bandicoot) was recorded by Astron (2020) through diggings and a deceased individual. Priority 3 <i>Neelaps calonotos</i> (Black-striped snake) has been previously recorded in the study area, but not for 30 years. Historical records of the Western Brush Wallaby (<i>Macropus irma</i>) Priority 4 occur within 2 km of the project area, however the species is unlikely to have persisted since the area was developed in the 1970's to 1990's. <p>Black Cockatoos:</p> <ul style="list-style-type: none"> Both the Endangered Carnaby's Cockatoo (<i>Calyptorhynchus latirostris</i>) and the Vulnerable Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>) are known to utilise habitat around the project area. There is no high quality foraging habitat in the project area. Astron (2020) recorded a number of Tuarts in the median just north of the Whitfords train station that are low value foraging habitat for the species and have a Diameter at Breast Height (DBH) of >500 mm. These trees are fairly young, having been planted in the mid-1990's and are unlikely to be suitable for developing hollows for several decades. 	<p>There will be no direct or indirect impact on State or Commonwealth listed Threatened or Priority Flora, as there are none in the project area.</p> <p>There will be no direct or indirect impact on State or Commonwealth listed Threatened or Priority Fauna in addition to the existing risks from road mortality, as there is no suitable habitat within the project area.</p> <p>Carnaby's Cockatoo (<i>Calyptorhynchus latirostris</i>) and the Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>) habitat will not be impacted.</p> <p>No State or Commonwealth listed TEC or PEC occurs within the project area. Therefore there will be no impact on any TEC or PEC.</p>	

Appendix 3 - Protected fauna and flora species and habitat

A Detailed biological survey of the area (survey area wider than the current project area) was undertaken in 2019³. A summary of the findings from the survey are presented below.

Vegetation

Five remnant native vegetation types were defined and included:

- One Banksia Woodland
- Two *Eucalyptus marginata* (jarrah) woodlands and
- Two *Eucalyptus gomphocephala* (tuart) forests.

Remnant vegetation types were mapped across 6.4 ha (19 %) of the survey area. The remaining 27.6 ha of the survey area was either cleared (3.0 ha, 9 %) or planted vegetation (24.6 ha, 72 %).

Remnant vegetation in the survey area was in Good to Completely Degraded condition, with the majority considered Completely Degraded as it consisted of scattered remnant species only. It is expected that quality of these remnants has been declining over time due to significant edge effects.

Vegetation inferred to represent the EPBC Act listed 'Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' TEC was recorded within the survey area, with 2.93 ha within the project area.

Vegetation inferred to represent the EPBC Act listed 'Banksia Woodlands of the Swan Coastal Plain' TEC was recorded within the survey area, across 1.4 ha near Hodges Drive and adjacent to the Woodvale Nature Reserve, but not within the project area.

Vegetation considered to represent the State listed PECs 'Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain' and '*Banksia* dominated woodlands of the Swan Coastal Plain IBRA Region' PEC were recorded within the survey area across 4.7 ha and 1.3 ha respectively. Within the project area 2.40 ha and 0.45 ha exists, respectively.

Flora

- A total of 207 vascular flora species, from 47 families and 127 genera, were recorded in the survey area. No EPBC Act or State listed threatened flora were recorded, one priority flora species of significance was recorded: *Jacksonia sericea* P4.
- The survey area has considerable disturbance and limited floristic diversity which further limits the potential for any threatened or priority flora species to occur.
- Sixty-three weed species were recorded within the survey area, accounting for 30% of the species recorded. Three are listed as WoNS (Australian Weeds Committee 2012) (*Asparagus asparagoides*, *Lantana camara* and *Genista linifolia*) and three are declared pest plants in Western Australia under the BAM Act (Department of Agriculture and Food Western Australia 2016).

Fauna

³ Astron (2020). Mitchell Freeway Widening Biological Survey. Unpublished report by Astron Environmental Pty Ltd for Main Roads Western Australia.

- 24 conservation significant vertebrate species were identified in the desktop assessment, and three species (quenda, Carnaby's cockatoo and forest red-tailed black cockatoo) were recorded within the survey area, one species were considered to have a 'moderate' likelihood and 20 species were considered to have a 'low' likelihood of occurrence.
- Based upon the current distributions for the three threatened species of black cockatoo, only the Carnaby's cockatoo (*Calyptorhynchus latirostris*) and forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) are likely to occur within the vicinity of the survey area.
- 329 black cockatoo potential breeding trees (259 Tuart, 42 Jarrah, 16 dead stags and 12 Marri) with a diameter at breast height of over 50 cm were recorded within the survey area including 15 trees (nine Tuarts and six dead stags) considered to have suitable hollows for Carnaby's cockatoos to breed in.
- Twenty-seven known foraging resource species for the Carnaby's cockatoo and three known foraging resource species for the forest red-tailed black cockatoo were recorded within the survey area; however, only the marri, jarrah and Banksia species are considered key species for foraging Carnaby's cockatoos. Two individual Carnaby's cockatoos were observed foraging on *Banksia prionotes* and jarrah within the survey area.
- One individual quenda roadkill and multiple diggings in the same area were recorded within the survey area. The sighting was recorded 228 m south of the Woodvale Open Space, and it is likely that this individual was from of a larger quenda population within Woodvale Open Space.

Appendix 4 – Local Industry Development Opportunities Identified

Product/Service/Activity	Identified Potential Suppliers (TBC)	Benefit Type
Asphalt/Surfacing		
Concrete Barrier		
Lighting/ITS		
PSP Subcontract	GARLI	Local SME and Aboriginal business
Noise Wall Installation	Melchor	Local business within 10kms
Dilapidation Survey		
Safety Barriers		
Limestone Retaining Walls		
Service Location		
Balustrades/Monowills		
Pavement Performance Testing		
Fencing	DK Kaartdijin	Aboriginal business
Clearing		
Kerbing	Kerbing West	Local business within 15kms
Rockpitching, Brick Paving		
Anti Graffiti		
Materials Testing		
Sign Installation		
Public Art		Aboriginal business
Traffic Management		
Rail Safety	Switch Rail	Local business within 10kms

Product/Service/Activity	Identified Potential Suppliers (TBC)	Benefit Type
Underboring Freeway		
Line marking		
Landscaping		