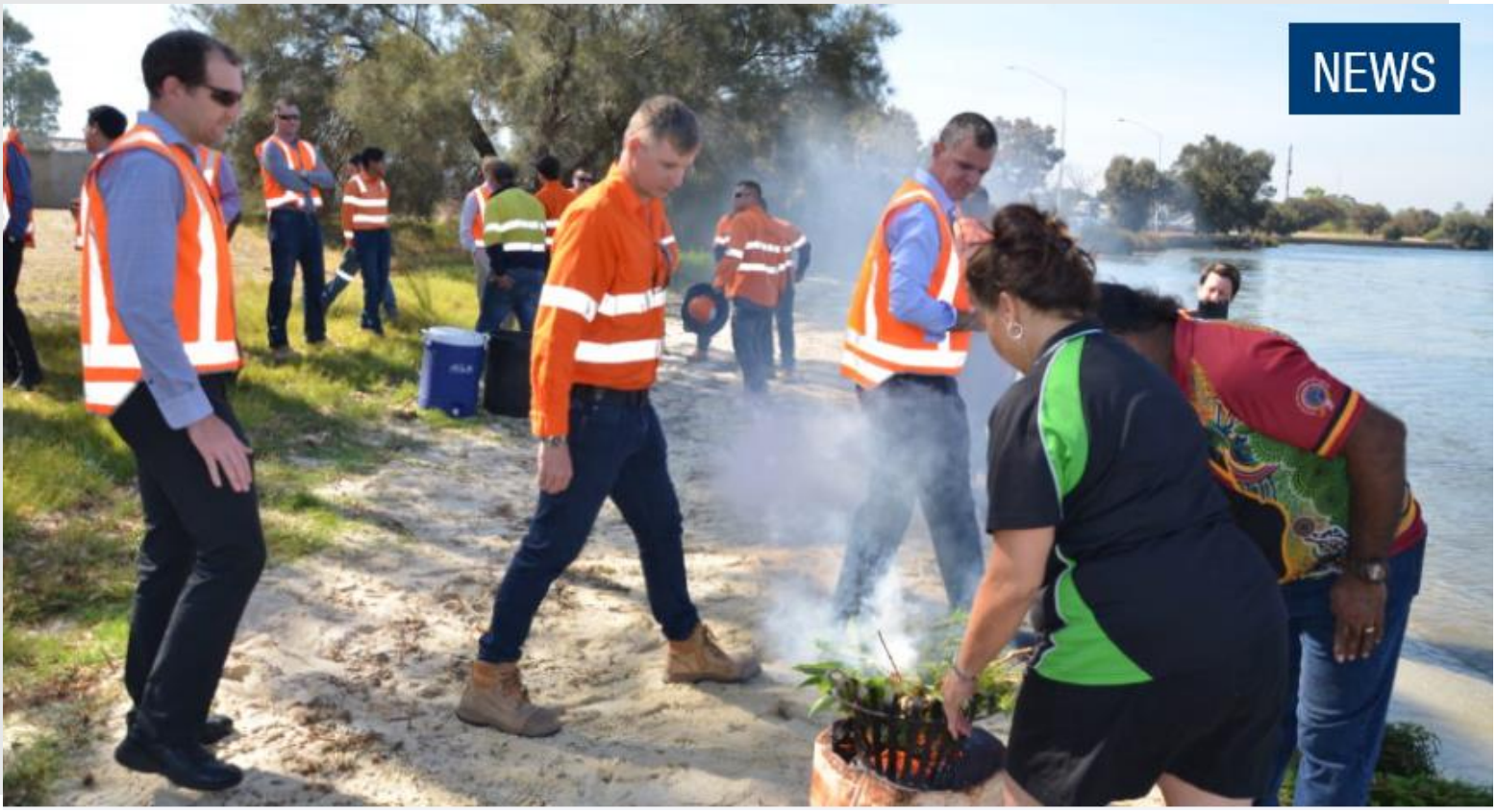
Smart Freeways Kwinana Northbound (Farrington Road to the Narrows Bridge)

Annual Project Sustainability Report 2019



This annual report covers the period from 15 July 2018-15 July 2019.

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About this Report

This report has been prepared by the SmartWays Alliance (BMD Constructions, Ventia, Arup and Main Roads Western Australia) project team on behalf of Main Roads Western Australia. This report forms part of Main Roads' annual sustainability reporting which is integrated into its Annual Report. The report content is prepared in accordance with GRI principals. Main Roads processes determine which aspects are Material and to be reported on by the project.

Introduction

The Smart Freeways Project is an initiative to reduce northbound congestion on the Kwinana Freeway between the Roe Highway Interchange and the Narrows Bridge. The project is the first of its kind in Western Australia and includes a combination of Civil, Structural and Intelligent Transport Systems (ITS) delivery.

The delivery of the Smart Freeways Project includes for the following:

- The creation of a fourth traffic lane between Canning Highway and the Narrows Bridge using existing pavement from the emergency stopping lane (on the left-hand side) and the existing bus lane (within the median), including resurfacing, line marking and barrier upgrades;
- Improved incident management and safety through the complementary addition of a Lane Use Management System (LUMS) that includes Variable Speed Limit (VSL) capability and the creation of Emergency Stopping Areas;
- Deployment of Coordinated Ramp Signals on five ramps between Farrington Road and Cranford Avenue to assist full productive use of the Freeway between Leach Highway and Canning Highway;
- Introducing new emergency stopping bays at regular intervals equipped with roadside assistance phones;
- Comprehensive CCTV coverage linked to the Main Roads' Road Network Operations Centre; and
- Improved driver information through electronic message signs on gantries and at freeway access points.

The importance of the Project, and its impact on sustainability, is best summarised in the Project Objectives which are:

- Travel Reliability – Greater reliability of travel times and throughputs supporting the reliable movement of people and freight;
- Efficiency – Greater efficiency of vehicle movements through improved operational control and optimised installation of ITS, resulting in reduced journey times;
- Safety – Improvement in safety through the implementation of solutions with a proven record in congestion management;
- Enhanced Driver Information Services – Provision of appropriate, clear and timely information to road users enabling informed and reliable decision making; and
- Exemplar – Provide a successful example for future Smart Freeway initiatives.

The Vision for the SmartWays Alliance is to construct a safe and efficient Intelligent Transport System that provides a perfect, predictable travel journey and sets the benchmark for future Smart Networks.

The Purpose of the Alliance is to develop innovative and sustainable solutions to the current Perth Network that achieves the Project Objectives and delivers a world class, state of the art Smart Network.

Highlights

Some of the key sustainability targets include:

- The overall project will involve the implementation of variable speed limits, lane use management, and ramp signalling, to improve the throughput of the Kwinana Freeway and to manage congestion thereby reducing overall greenhouse gas emissions.

Some of the key metrics that can be used to determine the success of working towards the sustainability goals on the project include:

- Payment of Contractors within 42 days as per the statutory requirements. The overall performance of the project to date has been payment of subcontractors within 14 days.
- At least 10% of the Alliance's Total Work Hours are undertaken by Aboriginal Persons; for this month the total was 12%, and the total for the project is 7.6%
- The overall % of remnant native vegetation cleared for the project to be under 0.17ha – so far project has not cleared any remnant native vegetation. Any vegetation cleared will be offset as per clearing permit conditions.

Overview

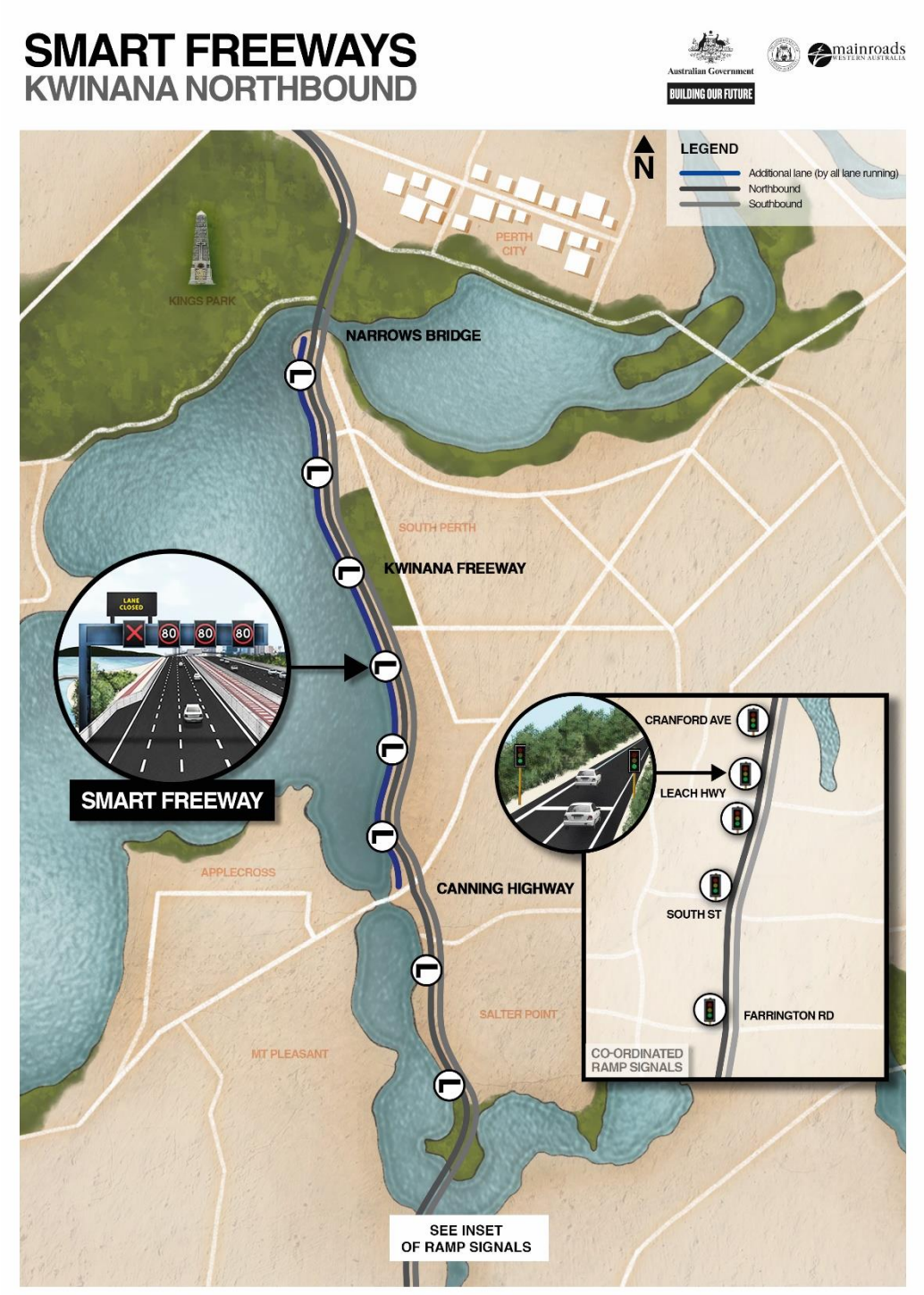
The Kwinana Smart Freeways project is part of Transforming Perth's Freeways Strategy. The strategy involves introducing the use of Smart Freeway technology to manage the performance of traffic along with widening works to provide additional capacity and reduce the need for merging by closing gaps within the freeway network. The Smart Freeways project will involve implementing a number of congestion management measures along the Kwinana Freeway Northbound between Farrington Road and the Narrows Bridge, including:

- The construction of an additional lane between Canning Highway and the Narrows Bridge by using the emergency stopping lane as a full-time running lane known as All Lane Running (ALR). This will utilise existing pavement from the emergency stopping lane and the existing bus lane and include resurfacing, line marking and barrier upgrades.
- Improved incident management and safety through the complementary addition of a LUMS that includes Variable Speed Limit (VSL) capability and the creation of Emergency Stopping Areas.
- Deployment of Coordinated Ramp Signals on five ramps between Farrington Road and Cranford Avenue to assist full productive use of the freeway between Leach Highway and Canning Highway.
- Introducing new emergency stopping bays at regular intervals equipped with roadside assistance phones.
- Comprehensive CCTV coverage linked to the Main Roads' Road Network Operations Centre.
- Improved driver information through electronic message signs on gantries and at freeway access points.

The Project scope comprises the design, construction and implementation of an integrated Smart Freeway system that includes:

Modifications to the existing Kwinana Freeway Northbound carriageway from Canning Highway to the Narrows Bridge to allow for all lane running; Emergency stopping bays at regular intervals throughout the all lane running section; Coordinated ramp signals between Farrington Road and Canning Highway; and Overhead electronic signs to inform road users and support the management of the freeway.

The project has been funded with 28.7m$ to date and has a total value of $48 million. As the figure below shows, the project runs from Canning to Narrows, plus Farringdon to Canning Northbound on ramps.



The project is scheduled to run from 3 July 2018 – with an extended date of 17th March 2020 for Project Completion. The Smart Ways Project Alliance includes: MRWA, BMD, Ventia and Arup.

See below Project Objectives.

The project objectives are:

- to be able to provide measurable Network Performance Improvement on Kwinana Freeway between Roe Highway and the Narrows Bridge relating:
    - Journey times
    - Reliability
    - Productivity
- To have high levels of system availability for safety critical and operational elements
- To be able to operate combinations of all lane running, variable speed limits and coordinated ramp signalling 24/7 whilst minimising safety risks
- TO provide augmented Driver information Services 24/7 through the provision of appropriate, clear and timely information to road users enabling informed and reliable decision making; and
- To be exemplar – Providing a successful example for future Smart Freeway initiatives in terms of engagement, collaboration, design, implementation, commissioning, subsequent operation and maintenance.

- **Key stakeholders to the project:**
    - The Premier, the Hon. Mark McGowan, MLA
    - The Minister for Transport, the Hon. Rita Saffioti, MLA
    - WA Police – and the WA Police Union
    - Department of Fire and Emergency Services – and the United Firefighters Union of WA
    - St Johns Ambulance
    - RAC WA
    - Department of Biodiversity, Conservation and Attractions
    - The City of South Perth
    - The City of Perth
    - The City of Melville
    - The City of Canning
    - The City of Cockburn
    - Scouts WA
    - AAAC Towing
    - The Minister for Police; Road Safety, the Hon. Michelle Roberts, MLA
    - The Minister for Emergency Services, the Hon. Fran Logan, MLA
    - WestCycle
    - Department of Transport
    - Public Transport Authority
    - Road Safety Commission
    - Committee for Perth
    - State Emergency Management Committee

- Link to project website for further information https://project.mainroads.wa.gov.au/home/smartfreeways/Pages/default.aspx

Overall approach to Sustainability

BMD is committed to incorporating Sustainability into all aspects of the overall Kwinana Smart Freeways project. BMD's corporate sustainability policy is publicly available on its website and outlines the corporate sustainability goals. The SmartWays Alliance has a specific Alliance Sustainability Policy Statement which is consistent with MRWA:

SmartWays Alliance Sustainability Policy Statement

The Smart Freeways – The SmartWays Alliance (SWA) is committed to delivering a transport network that maximises social, economic and environmental outcomes through the integration of sustainability principles through the design and construction phase.

Currently the project has two trained ISAPs (The Environmental and Sustainability Manager and Project Engineer) who are actively involved in driving the sustainability goals and ensuring that the project is able to achieve the minimum contract requirement of a self-assessed ISCA score of at least 50 using the ISCA version 1.2. A more detailed table stipulating roles and responsibilities is shown below:

Role	Responsibilities
Project Delivery Manager	• Central responsibility for delivering sustainability through the appointment of appropriate resources and direction for the implementation of the Sustainability Management Plan. • Management of resources required to implement the Sustainability Management Plan.
Environmental Manager	• Provides sustainability advice and leadership to the AMT and project delivery teams. • Fully integrates within the delivery teams to ensure sustainability is considered and incorporated at all stages of the Project. • Responsible for the implementation of the IS Rating Tool framework, and submission of the Design and As Built rating submission. • Manages the implementation and review of this SMP and associated systems. • Monitors, reviews and reports on sustainability performance. • Trained as an IS Accredited Professional.
Design Leads	• Drive sustainability within design teams. • Identify sustainability initiatives and innovations during the design and ensure significant design decisions are considered against the project decision-making process. • Consider and include sustainability within the Design Reports. • Ensure significant design decisions are recorded and detailed in Design Reports.
Construction Manager	• Drive sustainability within the construction teams. • Provide adequate resources to implement the requirements of this SMP during the construction phase. • Ensure that construction planning and decision-making considers environmental, social and economic aspects. • Ensure that sustainability requirements are considered during the procurement process and monitor the performance of suppliers/sub-contractors. • Report on progress of sustainability initiatives and accomplishments on site.
Project / Site Engineers	• Responsible for achieving relevant sustainability credits under the ISCA rating scheme and for recording and reporting on the evidence collected for these targets.

	• Ensure that construction activities are planned, procured and delivered in a manner that minimises environmental and social impacts. • Monitoring and reporting on the performance of suppliers and sub-contractors.

The project has developed a project specific Sustainability Management Plan outlining the project specific targets, initiatives and overall method for managing Sustainability on the project.

Sustainability Management Plan:
This Sustainability Management Plan (SMP) provides the overarching strategy of SmartWays Alliance's approach to sustainability during the Smart Freeways - Kwinana Northbound project. The SMP I identifies the project specific resources, procedures and practices that will be implemented to ensure that sustainable outcomes are achieved and support the successful design, construction and commissioning of the Project.
The SMP is aligned to the Infrastructure Sustainability Council of Australia's (ISCA) Infrastructure Sustainability (IS) Rating scheme to enable the Alliance to measure sustainable outcomes on the Project and obtain design and as-built IS ratings for the Project.
This SMP establishes the strategies for the management of climate change risks, water use, material use and energy and greenhouse emissions, incorporating sustainable thinking across the Design and Construct (D&C) phase of the Project.
The Project will be a sustainable, high quality and transformational project for the commuters and general public in Perth and Western Australia. Exhibiting innovative design, it will be sensitively integrated into the natural and built environment, help build communities and contribute to the future liveability of Perth.

The following sustainability commitments have been set for the Project:

- Sustainability leadership and improvement;
- A balanced consideration of the whole-of-life environmental, social and economic costs and benefits during decision making;
- Proactively manage adverse environmental, social and economic impacts;
- Restorative actions to be undertaken;
- Maximise equitable training and employment opportunities; and
- Environmental, social and other aspects to be considered during the procurement process for suppliers and subcontractors.

- The Alliance has set a minimum requirement of 50 ('Excellent' rating) for the project in both phases. The project is still in the initial stages and construction has only just commenced. The following sustainability outcomes have been completed:

- Weightings Assessment completed.
- Climate change risk assessment workshop completed.
- ISCA initiatives register compiled.

The project has commenced writing up Credit Summary forms and the Base Case and will be in a position to submit a round 1 assessment in the next couple of months.

Environmental Aspects Performance

At a glance

Aspect	Year to 30 June	Total for Project
Clearing planned (ha)	0.0382ha	0.17ha
Actual clearing to date (ha)	0.0382ha	0.0382ha
Rehabilitation/revegetation planned (ha)	0	0.006
Actual rehabilitation/revegetation to date (ha)	0	0
Environmental offset via Monetary contribution actual ($)	0	0
Total Water Consumption to date (kL)	7978.5	7978.5
Total GHG emissions (scope 1 & 2) to date (t CO_2-e)		
Total energy consumption to date (mj)	22328.4L	22328.4L
Total quantity of recycled content used in project (t)	653	653
Total imported materials used in project (t)	2677.89	2677.89
Total waste generated by project (t)	5.485	5.485

Environmental context

The Project Area lies within the Swan Coastal Plain IBRA region, and on a finer scale, within the Perth subregion. The Swan Coastal Plain is a low lying coastal plain, covered mainly with woodlands dominated by Banksia or Tuart (*Eucalyptus gomphocephala*) on sandy soils. It is composed of colluvial and aeolian sands, alluvial river flats, coastal limestone, heath and/or woodland of Tuart on limestone, Banksia and Jarrah (*Eucalyptus marginata*) - Banksia woodlands on Quarternary marine dunes of various ages, Marri (*Corymbia calophylla*) on colluvial and alluvials, and includes a complex series of seasonal wetlands (McKenzie et al., 2002).
The Project Area is located within the two vegetation associations of the Bassendean Botanical Subdistrict, as described by Beard (1981); as listed below:

Table 3 Beard Vegetation Association occurring within the Project Area (AECOM, 2017)

6	Medium woodland; Tuart and Jarrah	Kwinana Freeway from to Canning Highway to the Narrows Bridge and Cranford Avenue entry
1001	Medium very sparse woodland; Jarrah, with low woodland; Banksia and Casuarina	Leach Highway South Street, Farrington Road and Roe Highwayentry

Vegetation Clearing

Up to 0.198129 ha of native vegetation will be cleared for the Project. No Threatened or Priority flora species or ecological communities were recorded within the Project Area. Therefore, no conservation significant flora or vegetation is expected to be impacted by the Project.

Environmental Sensitive Areas

A portion of the Swan River Environmentally Sensitive Area (ESA) is located within the western side of the Project Area (Figure 2d). This ESA is associated with the Swan River Estuary Conservation

Category Wetland (CCW) (UFI 13316) and its buffer. A portion of the ESA site occurs within the Project Area boundary. Of this, 0.0014 ha is native vegetation, the remainder is planted vegetation or already cleared (AECOM, 2017).

The Milyu Nature Reserve is located along the western edge of the Project Area (Canning Highway to Narrows Bridge) between Lyall Street and South Terrace (Figure 2c). The Swan Estuary Marine Park is located adjacent to the Milyu Nature Reserve to the west of the Project Area (Canning Highway to Narrows Bridge) (Figure 2c). The stretch of native vegetation along the Canning Highway to Narrows Bridge is associated with the Milyu Nature Reserve. However, the area within the nature reserve is already cleared of any vegetation (AECOM, 2017).

Surface Water

Between Canning highway to Narrows Bridge the Swan River is located on the western side of the project area. There are no surface water features located within the five on-ramps of the Project area, however, the Canning River is located immediately west of the proposed gantry locations between Canning Highway and the Mount Henry Bridge. The Canning River is located approximately 250 m to the east of the Cranford Avenue on-ramp, 500 m east of the Leach Highway on-ramp (eastbound) and 500 m to the northeast of the Leach Highway on-ramp (westbound).

An un-named surface water feature is also situated approximately 40 m to the east of the Leach Highway on-ramp (eastbound).

Widening of the road reserve within the Canning Highway to Narrows Bridge section of the Project Area partially encroaches into the Swan River Trust (SRT) Development Control Area (DCA) (Figure 2e). Smart Ways Alliance will undertake works in accordance with the conditions within the Department of Biodiversity, Conservation and Attractions (DBCA) Permit P12170.
There is one Conservation Category Wetland (CCW) located within the Project Area (Figure 2d). The Swan River runs along the entire western side of the Project Area between Canning Highway and Narrows Bridge. A total of 0.12 ha of this CCW occurs within the Project Area boundary. Of this, 0.001 ha is native vegetation, the remainder is planted Casuarina woodland and already cleared areas.

Acid Sulphate Soils:

The majority of the Project Area was identified to have a moderate to low risk of acid sulphate soils (ASS). This includes Canning Highway to Narrows Bridge, South Street on-ramp, north of South Street and the Farrington Road on- ramp (Figure 2a). There is also a small section of Project Area located surrounding Leach Highway and Farrington Road that has a high to moderate risk of ASS (Figure 2a). The management of ASS is detailed within the ASSDMP.

The project is not impacting any significant areas of high biodiversity and it is unlikely to cause any major impacts to significant flora or fauna species.

No Threatened or Priority flora species or ecological communities were recorded within the Project Area. Therefore, no conservation significant flora or vegetation is expected to be impacted by the Project.

There is one significant water body in close proximity to the project named the Swan River. However, this water body will not be impacted by the project.

Water for construction purposes will be accessed through a combination of sources. Dewatering from drainage works will be used for dust suppression around the site. Mains water will be used for the operation of offices, crib rooms and toilets.

Key Environmental Legislation
The following pieces of environmental legislation apply directly to project works:

Commonwealth Government
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- National Environmental Protection Council Act 1994

• National Greenhouse and Energy Reporting Act 2007
• National Greenhouse and Energy Reporting Regulations 2008
State Government
• Aboriginal Heritage Act 1972
• Biosecurity and Agriculture Management Act 2007
• Conservation and Land Management Act 1984
• Contaminated Sites Act 2003
• *Environmental Protection Act 1986 (EP Act)*
• Heritage of Western Australia Act 1990
• Metropolitan Water Supply Sewage and Drainage Act 1909
• Rights in Water and Irrigation Act 1914
• Swan and Canning Rivers Management Act 2006
• Swan and Canning Rivers Management Regulations 2007
• *Wildlife Conservation Act 1950.*
• Environmental Protection (Unauthorised Discharges) Regulations 2004
• Environmental Protection (Controlled Waste) Regulations 2004
• Bush Fires Act 1954
• Dangerous Goods Safety Act 2004 (WA) and Regulations
• Environmental Protection (Noise) Regulations 1997
• Landfill Waste Classifications and Waste Definitions 1996 (as amended 2018)
• Waste Avoidance and Resource Recovery Ac 2007
• Waste Avoidance and Resource Recovery Levy Act 2007
• Litter Act 1979
Local Council
• Planning and Development (Local Planning Scheme) Regulations 2015

Environmental Management

The SmartWays Alliance has developed a Construction Environmental Management Plan (CEMP) and a series of associated Sub-plans. The CEMP is written in accordance with BMD Environmental Management System which is accredited to the ISO14001 Standard.

The primary purpose of the CEMP is to describe the management systems and procedures which will be adhered to in achieving project environmental objectives and goals. The CEMP is the overarching project reference for environmental management throughout the construction phase. It describes how SmartWays Alliance propose to manage and control environmental aspects and potential impacts of the project, through both project-wide and element-specific approaches. The CEMP prescribes all applicable procedures, processes and practices to be undertaken by SmartWays Alliance and subcontractors in order to manage environmental risks, effectively minimise impacts on the surrounding environment, and ensure compliance with regulatory and other obligations throughout project delivery.
The CEMP is a standalone plan within the project Integrated Project Management Plan (IPMP), and is supported by the environmental Sub-Plans listed below:

- Acid Sulfate Soils and Dewatering Management Plan (ASSDMP)
- Stormwater Management Plan (SWMP)
- Landscaping Rehabilitation Plan (LRP)
- Noise and Vibration
- Out of Hours Work
- Asbestos
- Air Quality
- Vegetation Management Plan (VMP)

A construction risk review was undertaken in the initial stages of the project to identify environmental key risks. Key risks were identified, and appropriate control measures formulated to reduce the potential during the construction phase. The specific control measures are listed in the CEMP and Sub-plans.

The project has not been referred to the EPA. However, Part of the Project Area lies within the Swan River Trust Development Control Area (DCA). The Project required an approval under the Swan and Canning Rivers Management Act 2006. MRWA has obtained Department of Biodiversity, Conservation and Attractions (DBCA) Permit P12170 for the Project Works
within the DCA area.

When working in the Swan River Trust Development Control Area (DCA), construction activities will need to be undertaken in accordance with Permit P12170. The SmartWays Alliance is required to Implement DBCA approved EMPs and associated Sub-plans including:
• Acid Sulfate Soils Investigation and Management Plan
• Landscaping Rehabilitation Plan
• Stormwater Management Plan.
• Dewatering Management Plan.

DBCA has approved the sub-plans listed above.

Ecology Initiatives

- The project has been involved in a revegetation planting day at Myalup Reserve. This provided an opportunity for the project to enhance this important ecological area whilst assisting community and the environment.

- Installation of fauna habitat features such as Hibernacula's (log piles) to provide refuge for fauna species in rehabilitated areas.

Water Management

Reducing water consumption and protecting water quality are key objectives for the project, especially considering the drying climate of the Perth region. To the maximum extent feasible, the project has reduced the need for water by increasing efficiency. Once efficiency that has been optimized, is the reuse of dewatering effluent for dust suppression. Dewatering between Canning Bridge to Narrows Bridge is being undertaken on the project due to the shallow water table and excavation works associated with drainage installation. The intercepted water is being utilised around the site for dust suppression via water carts. Another example of water management is the water supply to the spheres associated with the dewatering for drainage works. This water used to pump the spheres is supplied by the dewatering itself which is a form of reuse.

Other key strategies to reduce water include:

- Reducing the need for potable water and reusing groundwater – thereby reducing energy
- Preference for procurement of products that have less water intensive processes e.g. in concrete.
- The preference of non-potable water over potable water

Water usage has been managed through the Construction Environmental Management Plan. As part of the procurement process engineering teams are encouraged to preference products that use less water or have reduced water rates as part of the manufacture of these products.

Monitoring of water used during construction will be continually tracked and reported using the Monthly Sustainability Management Report to demonstrate performance relative to modelled figures provided in the Water Balance Calculations.

Source	Year to 30 June	Total for Project
Water purchased from the scheme in litres	0	0
Water pumped from bores in litres	35800	35800
Water pumped from rivers, lakes or harvested in litres	7919000 (dewatering effluent)	7919000 (dewatering effluent)
Recycled or waste water use (typically from another industry) in litres	0	0

Carbon Emissions & Energy

The project is of a small size and unlikely to generate significant greenhouse gas emissions and consume large amounts of energy. However, the SmartWays Alliance is committed to reducing carbon emissions on the project.

Major sources of greenhouse gases include use of plant and equipment on construction sites, operation of offices and crib rooms, etc. One strategy to reduce this emission total by reducing the total number of traffic management events by coordinating and combining after hours work activities where possible.

The project will require the use of electronic signs to control traffic associated with the new lane opening between Canning to Narrows Bridge. Electronic signs will be supplied by state-of-the-art LED lights; 4 discreet colours evolved to allow for colour mixing; and electronic signs to mimic static signs. The LED's associated with these signs will use much less energy in comparison to conventional lights.

Source	Year to 30 June	Total for Project
Energy usage by source in mega joules	857029.090	857029.090
From fuel use (mj)	857029.090	857029.090
From electricity (mj)	These figures cover the office and are unable to be accessed at this point in time.	These figures cover the office and are unable to be accessed at this point in time.
Energy saved (mj)	0	0

Materials & Recycling

The project is still considering several products for use that utilise recycled products. One example is for the realignment of the Principal Shared Use Path using RAP. The SmartWays Alliance has investigated a recycled asphalt & Seal package (includes recycled asphalt, plastic bottles, car tyres & glass bottles) using a Boral Mix. The project is still working the procurement process of this product.

Material and Waste Statistics

Imported Materials	Year to 30 June	Total for Project
Sand (t)	581	581
Gravel (t)	0	0
Limestone (t)	500	500
Crushed Rock (t)	35	35

Aggregate (t)	0	0
Asphalt (t)	0	0
Concrete (t)	153.64	153.64
Steel (t)	0	0
Reinforced concrete (t)	0	0
Emulsion (t)	0	0
Bitumen cutter (t)	0	0
Bitumen (t)	0	0
Other (t)	0	0

Waste	**Year to 30 June**	**Total for Project**
Unsuitable fill moved offsite (t)	0	0
Landfill (t)	3.835	3.835
Sewage (t)	0	0
Concrete rubble (m^3)	0	0
Pavement rubble (m^3)	0	0
Unsuitable material (m^3)	0	0
General/Green Waste (t)	1.65	0
Unsuitable fill used for rehabilitation purposes (t)	0	0
Recycled (t)	1673.225	1673.225

Imported recycled content	**Year to 30 June**	**Total for Project**
Sand (t)	491	491
Road Base (t)	0	0
Asphalt/Profiling (t)	0	0
Steel (t)	0	0
Concrete (t)	0	0
Other (t)	162 (Limestone)	162

Noise & Vibration

As part of the construction works the following key activities may generate noise and vibration:

- Pilling for gantries
- Resurfacing and line markings
- Excavation of gully pits and manholes
- Installation of crash barriers
- Installation of cabling
- Installation of new cabinets and IT devices

- The following locations have been identified as sensitive locations that require management during the course of the project:
  - Residents on properties located along the Kwinana Freeway.
  - Fiona Stanley Hospital.
  - Swan River Cycling/pedestrian path.

- To minimise the impact of noise and vibration associated with construction activities the Noise and Vibration Management Plan (NVMP) will be implemented. Mitigation Measures for this will include various measures including the following:

- Sensitive Receivers located in proximity to the proposed works will be regularly consulted with and given advance warning of any out of hours or high-risk work activities.
- Specified work hours to be strictly adhered to throughout project delivery.
- Plant, equipment and machinery will be serviced as per manufacturer's recommendations to ensure good working order.
- Plant, equipment or machinery emitting excessive noise levels will be removed from site until repaired, or silencing/baffling device installed.
- Noise and /or vibration monitoring will be carried out in response to a complaint or where a construction activity may cause environmental nuisance, or as directed by the Superintendent or Regulatory Authority.

It is anticipated that the implementation of the additional lane coupled with the ITS system will result in a much less congested freeway. From an operational perspective this will result in less vehicle time on the freeway for cars and a reduction in the overall operational noise from vehicle use.

Discharges & Spills & Pollution

With the Swan River in close proximity to the project boundary, work activities have been carefully planned to prevent the risk of spills and subsequent pollution. The CEMP sets out control measures which will be implemented to avoid discharge events and subsequent pollution.

Light spill

It is unlikely that the project will result in significant light spill during the construction phase as all works are on the edge of the freeway where there are already operational lights to allow safe use of the freeway.

Economic Aspects Performance

At a glance

Economic Aspect	Year to 30 June	Total for Project
Funding	$15.4m	28.7m
No. of vehicles per day		
Travel Time Saving		
Increase of vehicle capacity		
Workforce and Supply Chain		
Number of people employed by supply chain at various stages of project	35	50
Total number of suppliers engaged	75	100
Total number of Indigenous Enterprise	6	7
Total number of Disability Enterprise	0	0
Buy Local Spend (to date)	15.4	28.2

Economic context

The Kwinana Freeways Project introduces the concept of an Intelligent Transport System to Perth. Due to the Narrows Bridge located to the north and the proximity adjacent to the Swan River there is only limited capacity for increasing lanes to handle increased traffic volume anticipated in the northbound approaches to the city. The ITS system aims to improve traffic flow without the need for additional freeway widening.

The project will provide a funding injection into the WA economy of over $28m. In addition, funding will be paid into a dedicated project bank account, allowing early payment of suppliers and contractors where possible to improve liquidity for contractors and suppliers. Industries benefitting from the work includes designers, construction.

Implementing ITS technology by local businesses means that the skills will stay within the state and will facilitate future implementation of state-of-the-art traffic management throughout the state's freeway network.

The project is targeting 96% Western Australian content, with less than 1% of materials imported from foreign manufacturers. The project will target 10% of work to be undertaken by aboriginal persons. Where possible aboriginal owned businesses will be afforded the opportunity to participate.

Climate Change Assessments

A climate change risk assessment for the project was undertaken on the Thursday the 11 of July 2019.

Sustainable Transport

The project will involve improvements to the Principal Shared Path between Narrows to Canning Bridge which will be rebuilt to accommodate the new traffic lane and emergency bays in this area. This PSP was in quite poor condition already and the new path will result in a rejuvenation and realignment of this piece of infrastructure.

Social Aspects Performance

At a glance

Social Aspect	Year to 30 June	Total for Project
Community Satisfaction to Project	N/A	N/A
No. of complaints	27	28
No. of traffic safety incidents within project boundary		
% of women in workforce		
% indigenous in workforce		
LTIFR		
No. of hours training during project		
No. of development employees and apprentices on the project		
No. of employees (FTEs) sourced from local community		

Social context

The Alliance is committed to effective stakeholder engagement as a means of building better relationships with the community in which it operates and raising awareness of the project. This is evidenced by ongoing webpage updates, regular email blasts to subscribed stakeholders,

In addition, the Alliance aims to provide timely communications to any potential affected party when construction activities may impact them and adjust methodology where possible to minimise these impacts.

- **Community stakeholders to the project:**

Main Roads:

Executive Director, Infrastructure Delivery, Leo Coci
Project Director, Ilario Spagnolo
Project Manager, Michael Delpach
A/Strategy & Communications Executive Director, Alan Colegate
Strategic Communications Manager, Yolanda Vos
Manager Executive & Corporate Communications, Steve Potter
Manager Media Relations, Dean Roberts
Project Strategic Communications Specialist, Cass De Wind
Road Network Operations Centre (RNOC)
Customer Information Centre (CIC)

Other State Government:

Premier
Minister for Transport
Minister for Police, Road Safety
Minister for Emergency Services
Local Members of Parliament (MLAs/MLCs)

Department of Transport
Public Transport Authority
Transperth
Department of Biodiversity, Conservation and Attractions, including Swan River Trust
Department of Water and Environmental Regulation
Department of Planning, Lands and Heritage
Road Safety Commission

Federal Government:

Department of Infrastructure, Regional Development & Cities

Local Government:

City of South Perth (primary)
City of Melville (primary)
City of Cockburn (secondary)
City of Canning (secondary)
City of Perth (secondary)

Residents and businesses in the following suburbs:

South Perth
Como
Applecross
Salter Point
Mount Pleasant
Brentwood
Bullcreek
Bateman
Murdoch
Leeming

Adjacent venues, including:

South Perth Zoo
Royal Perth Golf Club
Aquinas College, Salter Point
South Metropolitan TAFE, Murdoch Campus
Fiona Stanley Hospital
Scout Water Activity Centre

Freight industry, including:

Fremantle Port
Freight operators

Emergency services:

St John Ambulance
DFES
WA Police
WA Police Union
United Firefighters Union of WA
State Emergency Management Committee

Incident response services:

RAC
AAAC Towing and other towing companies
Main Roads Incident Response Service (operated by DM Roads)

Public Transport:

Taxis
Rideshare operators (Uber/Shofer etc)

General community:

Road users

PSP users, including cycling groups & pedestrians

Safety improvements/outcomes: The Smart Freeway project will create an additional lane between Canning Highway and the Narrows Bridge by utilising the emergency stopping lane as a full-time running lane known as All Lane Running (ALR). This is considered the best approach for constrained areas that do not allow for traditional widening. In order to safely implement an ALR environment, Main Roads will use two smart technology concepts known as Lane Use Management System (LUMS) and Coordinated Ramp Signals (CRS).

  - Community Amenity – reduced travel times = more family time, reduced pollution from stop/start conditions,

- Approach to stakeholder engagement for the project

  Main Roads and the Alliance have joint responsibility for stakeholder engagement associated with this project. Main Roads has overarching responsibility for a community education campaign associated with the implementation of the new Smart Freeway, while the Alliance has responsibility for stakeholder engagement related to construction and delivery impacts.

  Stakeholders are kept up to date with regular email blasts, project website updates and

- Key topics or concerns raised

  PSP detours, including inconvenience to cyclists and pedestrians and safety concerns.

- Opportunities given to stakeholders to influence the project

  High level stakeholders, including RAC, emergency services and police, were involved in the early planning and development of the project. During delivery, stakeholders have the opportunity to raise concerns/enquiries related to details of the project design and delivery. The Alliance is committed to closing out enquiries within 4-5 days as part of its KRA reporting (this would be 'Business as Usual'). To date, the Alliance is closing out enquiries within an average of 2-3 days, which is registering as 'High' or a score of 120%.

Community & Stakeholder Engagement

The overarching communications and stakeholder engagement objectives for this project are as follows:

- Ensure consistent and accurate information
- Proactively address impacted stakeholder concerns
- Engage with Main Roads and Transport portfolio partners to build advocacy
- Minimise disruption during construction phase.

The key communications and stakeholder objectives for the design and construction phase include:

- Proactively keep nearby residents and stakeholders informed during the construction phase
- Address and monitor any community concerns or issues relating to construction
- Address specific concerns from directly affected landowners and stakeholders
- Communicate road closures and other construction impacts to road users and stakeholders in a timely manner using a variety of communication channels
- Keep key stakeholders informed on the progress of construction.

Addressing community concerns

- **Targets and performance in engagement for the project** – KRA is based on number of days to close out enquiries or complaints
- **Targets an performance in community satisfaction for the project-** Community engagement survey on the project webpage to determine understanding of the project and satisfaction with overall project engagement
- **Method of management i.e. plan, objective or KPI –** Stakeholder Engagement Management Plan and KPI based on enquiry management
- **Give an example of engagement on the project** – worked closely with the City of South Perth, Department of Transport and other stakeholders to plan the most effective way to close and detour the PSP, which is the busiest section of shared path in the metropolitan area. Resulted in a reduced detour timeframe for the busiest section closest to the city.

Report stakeholder engagement outcomes the project has achieved – As above – reduced the timeframe of the second phase of the PSP detour

Addressing community concerns

Community enquiries or complaints are captured and tracked in Main Roads' CRM, CONNECT. This enables all team members to view, edit and action these enquiries and provides a basis for ongoing reporting. The primary topic of concern, to date, has been the detour of the PSP.

- **Targets and performance in minimising and addressing concerns from the community**
- **Methods available for the community to communicate their concerns –** Main Roads' Customer Information Centre open 24/7 for phone, email or web enquiries, which are then redirected to the Alliance as appropriate.
- **Method of management i.e. plan, objective or KPI**
- **Give an example of addressing community concerns on the project –** a number of suggestions for improving the PSP detour were implemented in response to community/cyclist feedback

Heritage

There are no known listed heritage sites within the project boundary.