Smart Freeways Kwinana Northbound (Farrington Road to the Narrows Bridge) Annual Project Sustainability Report 2020

This annual report covers the period from 15 July 2019 to 15 July 2020.

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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 principles. Main Roads processes determine which aspects are material and to be reported on by the project.

Introduction

The Smart Freeway – Kwinana Northbound project is a Main Roads initiative to reduce northbound congestion on the Kwinana Freeway between the Roe Highway interchange and the Narrows Bridge. The project was the first of its kind in Western Australia and included a combination of civil, structural and Intelligent Transport Systems (ITS) delivery.

The importance of the project and its impact on sustainability is best summarised by the following project objectives:

- 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.

SmartWays Alliance's vision was to construct a safe and efficient Intelligent Transport System (ITS) that provided a predictable travel journey and sets the benchmark for future Smart Freeway networks.

Its purpose was to develop innovative and sustainable solutions to the current Perth network that achieved the project objectives and delivered a world class, state-of-the art Smart Freeway.

Highlights

One of the key sustainability targets for the project was:

- Reducing overall greenhouse gas emissions by managing congestion and freeway throughput through the implementation of variable speed limits, lane use management and ramp signalling.

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

- Payment of contractors within 42 days as per the statutory requirements. The overall performance of the project was payment of subcontractors within 14 days.
- At least 10% of the Alliance's total work hours were undertaken by Aboriginal people
- The overall % of remnant native vegetation cleared for the project was to be under 0.17ha. As of project completion, the Alliance had not cleared any remnant native vegetation.

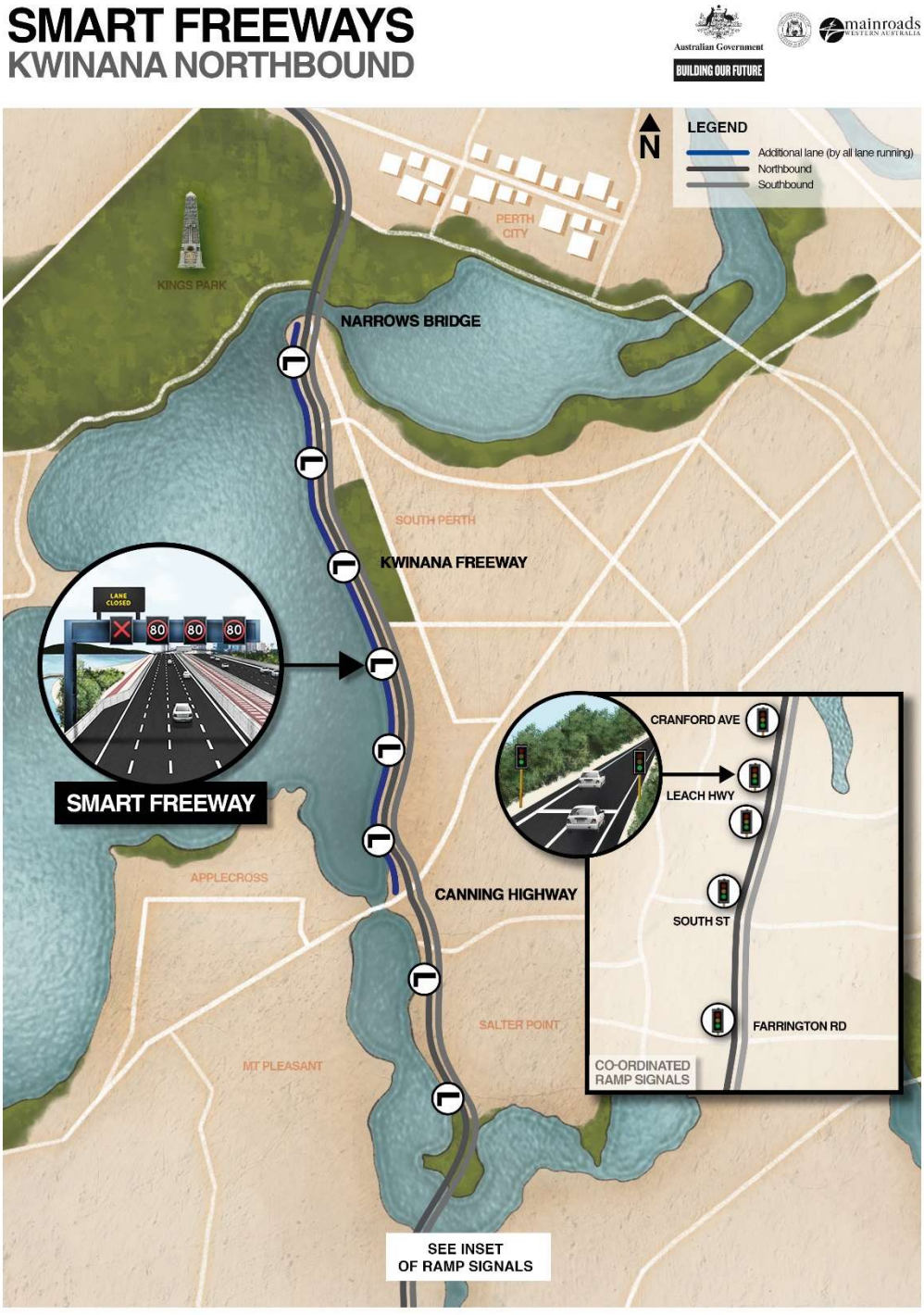
Overview

The Smart Freeways – Kwinana Northbound project is part of Main Roads' Transforming Perth's Freeways strategy. This strategy introduces the use of smart 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 delivery of the $47million Smart Freeways project included 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;
- Deployment of coordinated ramp signals on five ramps between Farrington Road and Cranford Avenue to manage traffic flow onto the freeway between Leach Highway and Canning Highway;
- New emergency stopping bays at regular intervals, equipped with roadside assistance phones;
- Comprehensive CCTV coverage linked to Main Roads' Road Network Operations Centre and;
- Improved driver information through electronic message signs on gantries and at freeway access points.

The figure below illustrates the basic project scope, as outlined by Main Roads. The new section of Smart Freeway opened to traffic on Saturday 22 August 2020.


SMART FREEWAYS
KWINANA NORTHBOUND
Australian Government
BUILDING OUR FUTURE
mainroads
WESTERN AUSTRALIA
N
LEGEND
Additional lane (by all lane running)
Northbound
Southbound
PERTH CITY
KINGS PARK
NARROWS BRIDGE
SOUTH PERTH
KWINANA FREEWAY
LANE CLOSED
80
80
80
SMART FREEWAY
CRANFORD AVE
LEACH HWY
SOUTH ST
FARRINGTON RD
CO-ORDINATED RAMP SIGNALS
APPLECROSS
CANNING HIGHWAY
SALTER POINT
MT PLEASANT
SEE INSET OF RAMP SIGNALS

SmartWays Alliance Objectives

- Provide measurable Network Performance Improvement on Kwinana Freeway between Roe Highway and the Narrows Bridge relating to:
    - 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 – provide a successful example for future Smart Freeway initiatives in terms of engagement, collaboration, design, implementation, commissioning, subsequent operation and maintenance.

Key project stakeholders

- 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 John 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

Overall approach to sustainability

The SmartWays Alliance is committed to incorporating sustainability into all aspects of the Smart Freeways – Kwinana Northbound project. The SmartWays Alliance has a specific Alliance Sustainability Policy Statement which is consistent with Main Roads' guidelines.

SmartWays Alliance Sustainability Policy Statement

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.

The team included two trained ISAPs (the Environmental and Sustainability Manager and Project Engineer) to drive the sustainability goals and ensure that the project achieved a self-assessed ISCA score of at least 50 using the ISCA version 1.2. A more detailed table outlining 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. • 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 Alliance also developed a project-specific Sustainability Management Plan outlining the project specific targets, initiatives and overall method for managing sustainability during delivery.

Sustainability Management Plan

This Sustainability Management Plan (SMP) provided an overarching strategy for SmartWays Alliance's approach to sustainability during the Smart Freeways - Kwinana Northbound project. The SMP identifies the project-specific resources, procedures and practices to be implemented to ensure that sustainable outcomes were achieved and supported the successful design, construction and commissioning of the project.
The SMP was aligned to the Infrastructure Sustainability Council of Australia's (ISCA) Infrastructure Sustainability (IS) Rating scheme to enable the Alliance to measure sustainable outcomes and obtain design and as-built IS ratings for the project.
It established 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 has clearly demonstrated it is sustainable, high quality and transformational for commuters and the general public in Perth and Western Australia. Exhibiting innovative design, it has been sensitively integrated into the natural and built environment, and makes a significant contribution to the future liveability of Perth.

The following sustainability commitments were 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 set a minimum requirement of 50 ('Excellent' rating) for the project in both phases. The project has now opened to traffic and construction is largely complete. The following sustainability outcomes have been completed:

- Weightings Assessment completed.
- Base Case completed.
- Climate change risk assessment workshop completed.
- Energy, Materials and Water Modelling complete.
- ISCA initiatives register compiled.

The Alliance is now finalising its Credit Summary forms and will be submitting the ISCA Scorecard for both 1st round and 2nd round verification by the end of September 2020.

Environmental Aspects Performance

At a glance

Aspect	to 30 June 2020	Total for Project
Clearing planned (ha)	0.198129 ha (remnant native vegetation)	0.198129 ha (remnant native vegetation)
Actual clearing to date (ha)	0.40589ha (planted vegetation)	0.40589ha (planted vegetation)
Rehabilitation/revegetation planned (ha)	0.4748	0.4748
Actual rehabilitation/revegetation to date (ha)	0.4688	0.4688
Environmental offset via Monetary contribution actual ($)	38481	38481
Total Water Consumption to date (kL)	61913.2	81717.7
Total GHG emissions (scope 1 & 2) to date (t CO_{2}-e)	713.36	713.36
Total energy consumption to date (mj)	82287	82287
Total quantity of recycled content used in project (t)	13833.9	13833.9
Total imported materials used in project (t)	18461.59	18461.59
Total waste generated by project (t)	18613.95	18613.95

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, Banksia woodlands on Quarternary marine dunes of various ages, Marri (*Corymbia calophylla*) on colluvial and alluvial sands, 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)

Vegetation association number	Description	Location
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 Highway entry

Vegetation Clearing

Approximately 0.40589ha of planted vegetation was cleared for the project. No threatened or priority flora species or ecological communities were recorded within the project area. Therefore, no conservation of significant flora or vegetation were impacted by the project.

Environmentally Sensitive Areas

A portion of the Swan River Environmentally Sensitive Area (ESA) is located within the western side of the project area . This ESA is associated with the Swan River Estuary Conservation Category Wetland (CCW) (UFI 13316) and its buffer. A portion of the ESA site is 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 the Narrows Bridge is associated with the Milyu Nature Reserve. Neither of these areas were impacted as a result of the project.

Surface Water

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

An unnamed 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 encroached into the Swan River Trust (SRT) Development Control Area (DCA). SmartWays Alliance undertook works in accordance with the conditions imposed by the Department of Biodiversity, Conservation and Attractions (DBCA) Permit P12170.

There is one Conservation Category Wetland (CCW) located within the project area (Figure 2d). A total of 0.12 ha of this CCW sits within the project area boundary. Of this, 0.001 ha is native vegetation, the remainder is planted Casuarina woodland and already cleared areas. Neither of the surface water areas noted above have been impacted from the project.

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 was a small section of the project area surrounding Leach Highway and Farrington Road that was identified as having a high to moderate risk of ASS. SmartWays Alliance’s management of ASS was detailed within its Acid Sulfate Soils and Dewatering Management Plan (ASSDMP).

The project did not impact any significant areas of high biodiversity nor 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 significant flora or vegetation was impacted by the project.

There is one significant water body in close proximity to the project, namely the Swan River. This water body was not impacted by the project.

Water for construction purposes was accessed through a combination of sources. Dewatering from drainage works was used for dust suppression around the site.

Key Environmental Legislation

The following pieces of environmental legislation applied directly to the 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

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

The primary purpose of the CEMP was to describe the management systems and procedures to achieve project environmental objectives and goals. The CEMP was the overarching project reference for environmental management throughout the construction phase. It described how SmartWays Alliance managed and controlled the environmental aspects and potential impacts of the project, through both project-wide and element-specific approaches. The CEMP prescribed 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 was a stand-alone plan within the Integrated Project Management Plan (IPMP), and supported by the environmental sub-plans listed below:

- Acid Sulphate 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. Appropriate control measures were then formulated to reduce the potential during the construction phase. The specific control measures are listed in the CEMP and sub-plans.

The project was not referred to the EPA. However, as part of the project area lay within the Swan River Trust Development Control Area (DCA) it required approval under the Swan and Canning Rivers Management Act 2006. MRWA obtained a 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 were undertaken in accordance with Permit P12170. SmartWays Alliance also implemented DBCA-approved EMPs and associated sub-plans including:
• Acid Sulphate Soils Investigation and Management Plan
• Landscaping Rehabilitation Plan
• Stormwater Management Plan.
• Dewatering Management Plan.

Ecology Initiatives

- The project team were involved in a revegetation planting day at Myalup Reserve. This provided an opportunity for the Alliance to enhance this important ecological area whilst assisting the community.
- The landscape design has been revised so that it is specific to actual areas of disturbance and so that the species mix is consistent with the Kwinana Freeway Foreshore Management Plan.
- The Alliance installed approx. 180m of wind fence to allow better plant establishment in a very harsh river environment.
- The Alliance installed 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 were key objectives for the Alliance, especially considering the drying Perth climate. To the maximum extent feasible, the project reduced the need for water by increasing water use efficiency. Dewatering was undertaken between Canning Bridge and the Narrows Bridge due to the shallow water table and excavation works associated with drainage installation. The intercepted water was then utilised around the site for dust suppression via water carts. Another example of responsible water management was the water supply to the spheres associated with the dewatering for drainage works. The water used to pump the spheres was supplied by the dewatering itself, which is another innovative example of reuse.

Other key strategies to reduce water included:
- Reducing the need for potable water and reusing groundwater, thereby reducing energy
- Preference for procurement of products with less water-intensive processes e.g. in concrete
- The preference of non-potable water over potable water

Water usage was managed through the Construction Environmental Management Plan. As part of the procurement process, engineering teams were encouraged to preference products that used less water or had reduced water rates as part of their manufacturing process.

Monitoring of water used during construction was continually tracked and reported using the Monthly Sustainability Management Report. This demonstrated 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	45.2	332.8
Water pumped from bores in litres	13913	16913.45
Water pumped from rivers, lakes or harvested in litres		91616 – dewatering effluent
Recycled or waste water use (typically from another industry) in litres	116	773.7

Carbon Emissions & Energy

Greenhouse gas emissions associated with the construction were low given the size of the project and the Alliance kept its energy consumption to a minimum by reducing the total number of traffic management events by coordinating and combining after hours work activities where possible.

The project required the installation of overhead electronic signs to control traffic between Canning Highway and the Narrows Bridge. These signs are fitted with state-of-the-art LED lights and 4 discreet colours have been included to allow for colour mixing. The LEDs use much less energy in comparison to conventional lights.

Source	Year to 30 June	Total for Project
Energy usage by source in mega joules	3109	85396
From fuel use (mj)	61543	61543
From electricity (mj)	42566.4	42566.4
Energy saved (mj)	292.79tCO2e	292.79tC02e

Materials & Recycling

The project investigated the use of several products that utilised recycled products. One example was for the realignment of the Principal Shared Use Path using RAP. Further to this, the SmartWays Alliance investigated a recycled asphalt & seal package (includes recycled asphalt, plastic bottles, car tyres & glass bottles) using a Boral mix. This was, unfortunately, unable to be implemented due to the high-risk location of where this product was proposed to be used (Kwinana Freeway northbound between Canning Highway and the Narrows Bridge).

Material and Waste Statistics

Imported Materials	Year to 30 June	Total for Project
Sand (t)	243	243
Gravel (t)	0	0
Limestone (t)	2195.26	2195.26
Crushed Rock (t)	748	748
Aggregate (t)	32	32
Asphalt (t)	88.26	88.26
Concrete (t)	353.4	353.4
Steel (t)	0	0
Reinforced concrete (t)	88.9	88.9
Emulsion (t)	1440	1440
Bitumen cutter (t)	0	0
Bitumen (t)	2536	2536
Other (t)	80.88	80.88

Waste	Year to 30 June	Total for Project
Unsuitable fill moved offsite (t)	874	874
Landfill (t)	3.835	3.835
Sewage (t)	1738.91	1738.91
Concrete rubble (m^3)	3347.61	3347.61
Pavement rubble (m^3)	0	0
Unsuitable material (m^3)	0	0
General/Green Waste (t)	20.55	20.55
Unsuitable fill used for rehabilitation purposes (t)	0	0
Recycled (t)	13833.99	13833.99

Imported recycled content	Year to 30 June	Total for Project
Sand (t)	491	1443
Road Base (t)	717 717	717
Asphalt/Profiling (t)	314.27	314.27
Steel (t)	100	100
Concrete (t)	911.2	911.2
Other (t)	4032.37 (Limestone)	4032.37

Noise & Vibration

Noise and vibration may have been generated as part of construction works for the following key activities:

- 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 were identified as sensitive locations that required management during project construction:
    - Residents on properties located along the Kwinana Freeway.
    - Fiona Stanley Hospital.
    - Swan River Cycling/pedestrian path.

- To minimise the impact of construction activities, the Noise and Vibration Management Plan (NVMP) was implemented. Mitigation measures for this included the following:
    - Sensitive receivers located in proximity to the proposed works were regularly given advance warning of any out of hours or high-risk work activities.
    - Specified work hours strictly adhered to throughout project delivery.
    - Plant, equipment and machinery was serviced as per manufacturer's recommendations to ensure good working order.
    - Plant, equipment or machinery emitting excessive noise levels was removed from site until repaired, or silencing/baffling device was installed.
    - Noise and /or vibration monitoring was carried out in response to any significant complaints during the project.

Early feedback indicates that the operating of the additional lane, coupled with the state-of-the-art ITS system, has resulted in a much less congested freeway and significantly reduced travel times. From an operational perspective, this means vehicles are spending less time in congestion on the freeway, therefore reducing the overall operational noise from vehicle use.

Discharges & Spills & Pollution

With the Swan River near the project site, work activities were carefully planned to prevent the risk of spills and subsequent pollution. The CEMP set out control measures to be implemented to avoid discharge events and subsequent pollution.

Light Spill

The project did not cause any significant light spill during the construction phase, given that all works were within the freeway reserve and already well-lit by street lighting. However, a complaint about light spill as a result of new street lighting was investigated by the Alliance and a change was made to the angle of the luminaires to address this complaint to the satisfaction of the nearby residents.

Economic Aspects Performance

At a glance

Economic Aspect	Year to 30 June	Total for Project
Funding	65.5$m	65.5m
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	200	200
Total number of suppliers engaged	86	136
Total number of Indigenous Enterprise	8	11
Total number of Disability Enterprise	0	0
Buy Local Spend (to date)	99	98

Economic context

The Smart Freeway – Kwinana Northbound project introduced the concept of an Intelligent Transport System to Perth. Due to the constraints of the Swan River and PTA rail median, there was limited capacity for additional lanes to handle traffic growth on the northbound approach to the city. The ITS system was the best way to improve traffic flow without the need for additional freeway widening.

The project provided a funding injection into the WA economy of over $47m. Payments to the Alliance were made by Main Roads to a dedicated project bank account, allowing early payment of suppliers and contractors where possible to improve liquidity.

ITS technology was supplied by local businesses, where possible, ensuring that the skills and investment remained within Western Australia. This will facilitate future implementation of state-of-the-art traffic management throughout the state's freeway network, enhancing knowledge-sharing among future projects.

The project had an Indigenous spend target of $1,000,000 and this target was achieved with $3,650,000 spent to date.

Climate Change Assessments

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

Sustainable Transport

The project included improvements to the Principal Shared Path between Canning Highway and the Narrows Bridge, to accommodate the new traffic lane and emergency bays in this area. This PSP was deteriorating and the new path includes significant areas of resurfacing to rejuvenate and realign this heavily-trafficked infrastructure. Other improvements, determined in consultation with WestCycle, were also included on the PSP where possible to improve the journey for cyclists.

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	57	98
No. of traffic safety incidents within project boundary	25	43
% of women in workforce	4	5
% indigenous in workforce	10	10
LTIFR		
No. of hours training during project	18	28
No. of development employees and apprentices on the project	9	11
No. of employees (FTEs) sourced from local community	2	2

Social context

The Alliance was committed to effective stakeholder engagement as a means of building better relationships with the community in which it operated and raising awareness of the project. The process for this, as well as a comprehensive list of stakeholders, was outlined within the Community and Stakeholder Engagement Plan and a comprehensive record of key engagement activities was maintained throughout the project.

Safety improvements/outcomes

The Smart Freeway project has created 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 was considered the best approach for a constrained area that did not allow for traditional widening. In order to safely implement an ALR environment, Main Roads used two smart technology concepts known as Lane Use Management System (LUMS) and Coordinated Ramp Signals (CRS).

Overall approach to stakeholder engagement

Main Roads and the Alliance had joint responsibility for stakeholder engagement associated with this project. Main Roads retained overarching responsibility for engaging with agency-level stakeholders and developing a community education campaign associated with the implementation of the new Smart Freeway, while the Alliance had responsibility for stakeholder engagement related to construction and delivery impacts.

The Alliance's key communication methods included ongoing webpage updates and regular email blasts to subscribed stakeholders and identified stakeholders, as well as individual engagement with local government and key stakeholders to address specific project issues. These included the location of key infrastructure and the redevelopment of the PSP near the Sea Scouts' Water Activity Centre in Como.

In addition, the Alliance provided relevant and timely communications to parties susceptible to construction impacts (e.g. after hours works), adjusting its methodology where required to minimise these impacts.

The overarching communications and stakeholder engagement objectives for the Alliance were defined as:

- Ensure consistent and accurate communication of project 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 included:

- 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
- Early communication of road closures and other construction impacts to road users and stakeholders using a variety of communication channels
- Keep key stakeholders informed on construction progress

Opportunity for Stakeholder Influence on the Project

High level stakeholders, including the RAC, emergency services and police, were involved in the early planning and development of the project as led by Main Roads. During delivery, stakeholders had the opportunity to raise concerns/enquiries related to details of the project design and delivery.

Addressing community concerns

The Alliance made a commitment to close out enquiries within 4 to 5 business days as part of its KRA reporting (this would be 'Business as Usual'). At the conclusion of the project, the Alliance had maintained an average of 2 to 3 days to close out enquiries, which is a score of 'High' or 120%.

- **Targets and performance in engagement for the project** – KRA is based on number of days to close out enquiries or complaints
- **Targets in 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, WestCycle 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 an improved surface at completion of the project.
- **Report stakeholder engagement outcomes the project has achieved –** reduced the timeframe of the second phase of the PSP detour and improved interaction with vehicles due to assistance from the City of South Perth.

Addressing community concerns

Community enquiries or complaints were captured and tracked in Main Roads' CRM, CONNECT. This enabled all CSE team members to view, edit and action these enquiries and provides a basis for ongoing reporting. The primary topic of concern was the detour of the PSP, as this was the greatest disruption.

Heritage

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