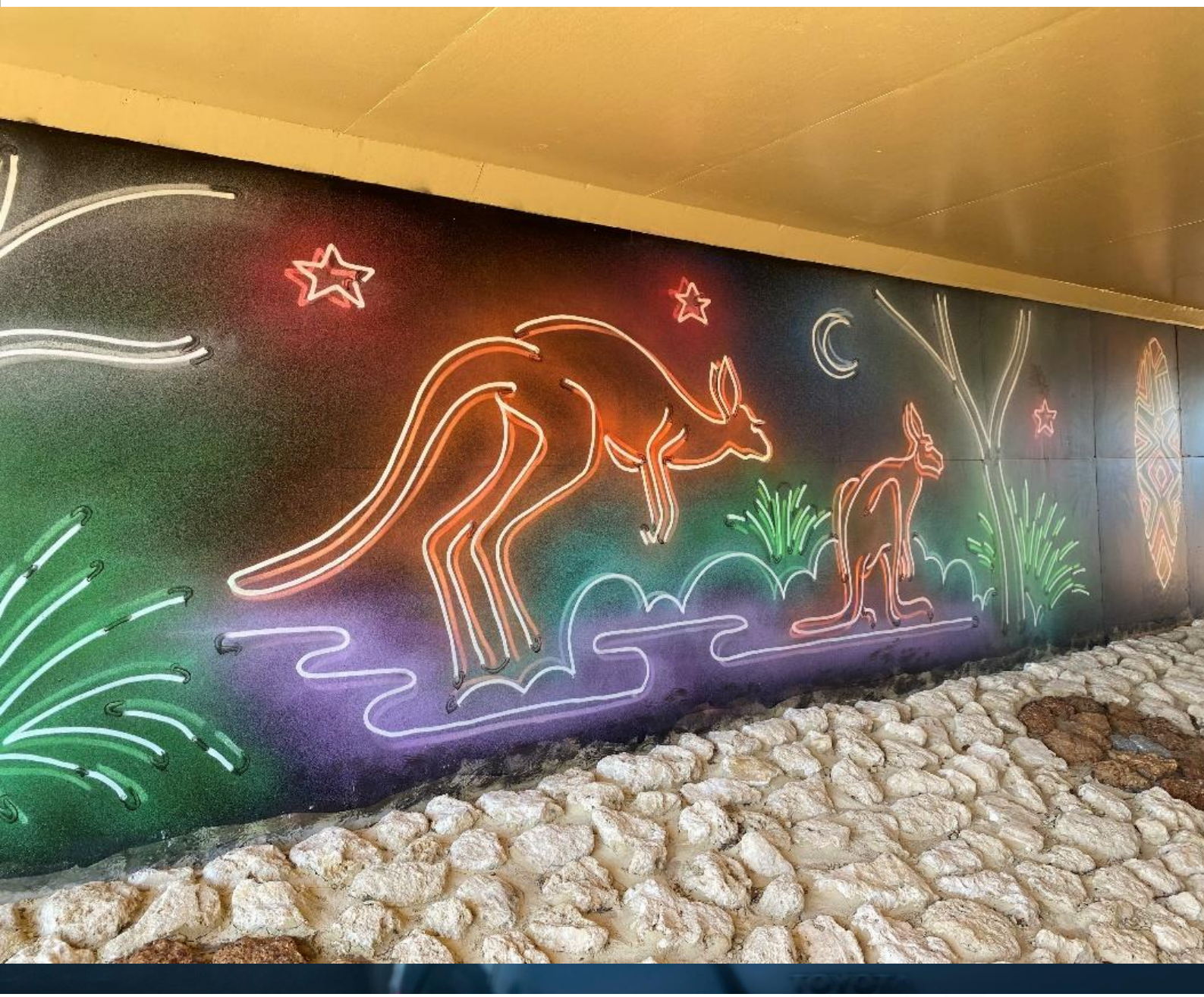

EastLink WA: Annual Project Sustainability Report 2022

This annual report covers the period from October 2021 to the completion of IPT design in May 2023. One previous annual sustainability report has been prepared for the project.

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About this report

This report has been prepared by the EastLink WA Integrated 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 Global Reporting Initiative principals in that material topics reported in this report have been determined through a materiality process that adheres to the Infrastructure Sustainability Council (ISC) scheme.

This annual report covers the period from October 2021 to finalisation of Ultimate Design in April 2023. The previous report for the period March 2021 to October 2021 was published in March 2022 and can be accessed here. Since the previous annual report the timeframe for completion of this project phase has been brought forward to mid 2023, with completion of the Ultimate Design. Accordingly, this reporting period has been extended to accommodate this change.

The EastLink WA project is aligned with the Infrastructure Sustainability (IS) version (v) 2.0 Planning rating scheme.

Introduction

EastLink WA is a culmination of more than 40 years of road planning activities for the north-eastern corridor of the Perth metropolitan area and Wheatbelt region. It will provide a safer, more efficient route between Perth and Northam, to cater for a future increase in regional and interstate freight movement and projected growth in local population.

The 80-kilometre project (shown in Figure 2 and Figure 2) comprises:

- Reid Highway upgrades between Tonkin Highway and Great Northern Highway
- Roe Highway upgrades between Great Northern Highway and Clayton Street in Bellevue
- Perth Adelaide National Highway (PANH) (also referred to as the Orange Route) between Roe Highway / Toodyay Road intersection and Great Eastern Highway at the town of Clackline
- PANH section of Great Eastern Highway between Clackline and the town of Northam.

The project team is committed to delivering a project that achieves positive environmental, social and economic outcomes. This commitment is reflected in the project's sustainability vision:

We are undertaking an outcomes study, not a technical study. We are trying to achieve social economic benefits. We are not just building a road.

Highlights

Sustainability highlights to date include:

- Development of a Program rating model for its ISv2.0 Planning rating. This is an Australian first – prior to this, no Program rating framework had been developed for Planning ratings with ISC. This efficient, more strategic process for the rating aims to provide the delivery phase with a sound foundation for improved sustainability outcomes from an early project stage, including development and adoption of Sustainability Focus Areas which reflect project sustainability priorities
- The first package has been submitted to the Infrastructure Sustainability Council (ISC) for verification and a Silver rating verified. This submission includes several credits that have been verified at the Program level that will carry over into Packages 2 & 3. These Packages have been submitted for verification, with a final rating expected around July or August 2023.
- Completion of sustainability documentation for handover to tenderers for the first delivery package (Reid Highway Grade Separations).
- The Development of a Program level Resource Efficiency Strategy and an Aboriginal Engagement Strategy to guide future project phases.
- Stakeholder consultation and environmental surveys.
- Sharing knowledge and lessons learned with the wider industry on embedding sustainability in decision making, and on the benefits of the Program Planning Rating in the approach to sustainability. The project team has presented to WestPort, the ISC WA Symposium and to the Main Roads Delivery Directorate Sustainability session.

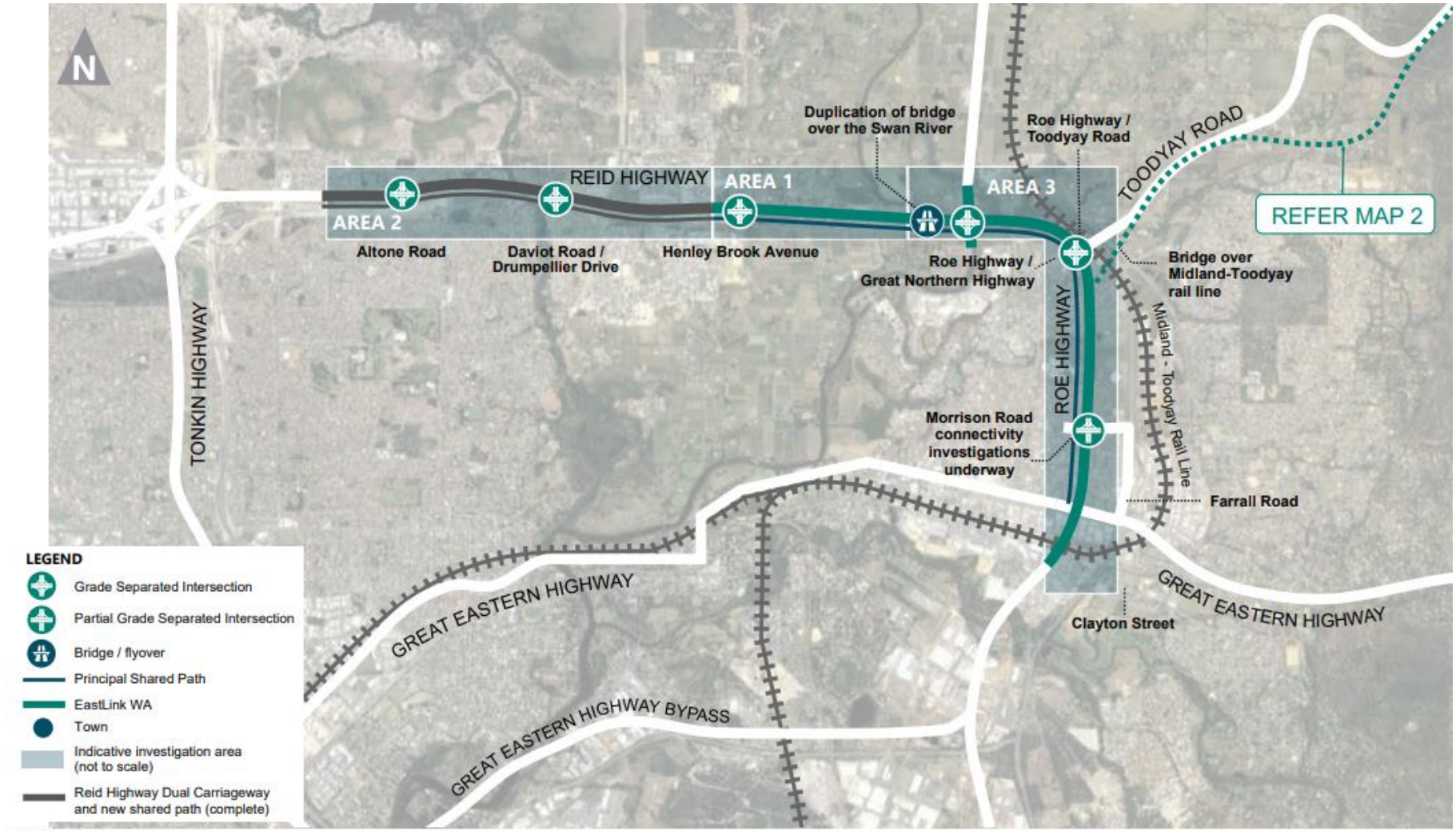

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Figure 1 EastLink WA project overview (Map 1)

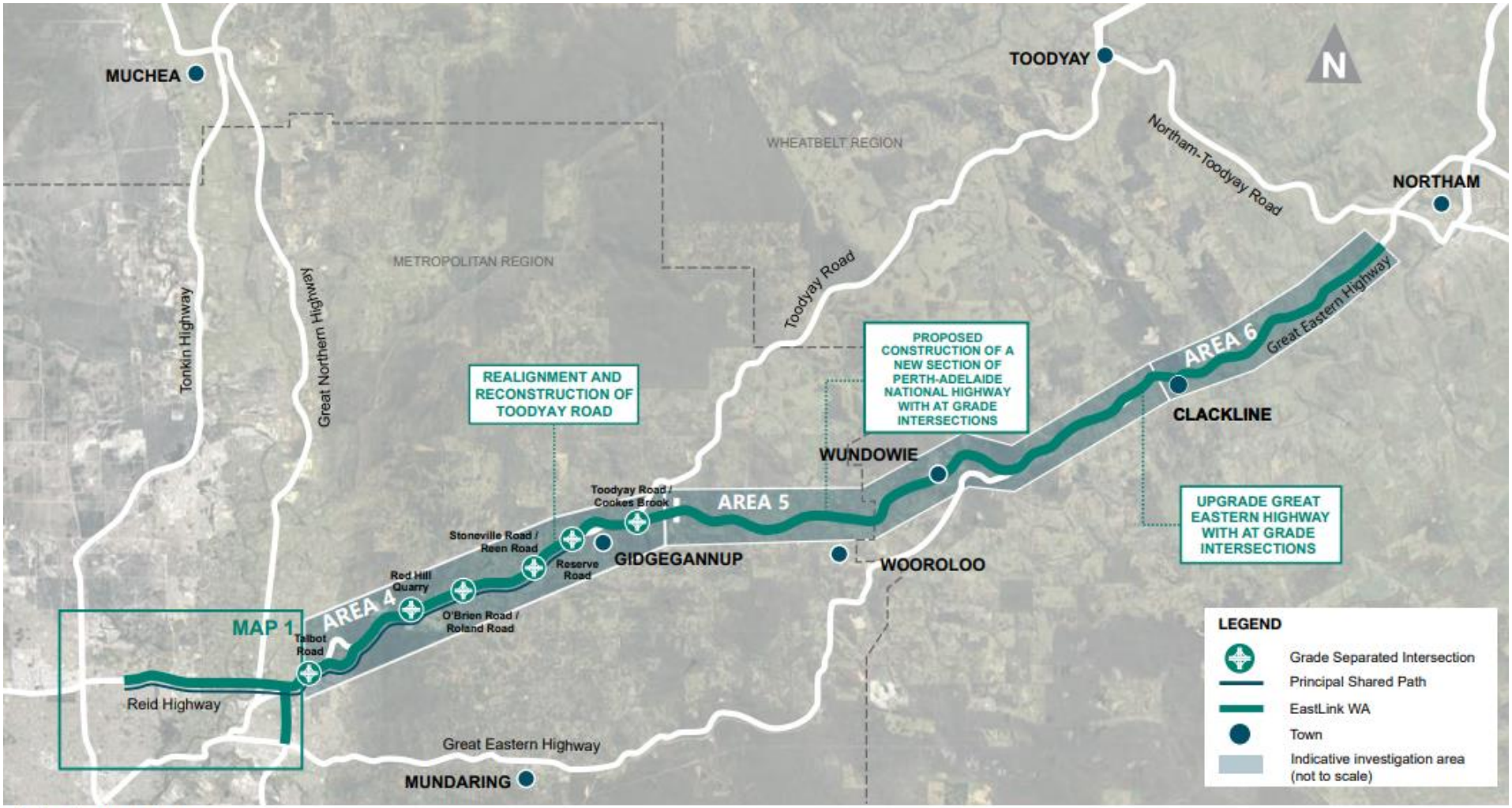

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Figure 2 EastLink WA project overview (Map 2)

Overview

The EastLink WA planning and development project is being delivered by an Integrated Project Team (IPT) comprised of Main Roads and industry Joint Venture partners, GHD, BG&E and subconsultants. This Joint Venture commenced in February 2021 and comprises several consulting specialist firms and subconsultants that cover engineering, planning, environment and heritage, stakeholder engagement, and sustainability disciplines.

The State and Federal governments have funded the planning and development phase of EastLink WA. Reid Highway upgrades for the Altone Road, Daviot Road / Drumpellier Drive and Henley Brook Avenue (currently West Swan Road) grade separations are fully funded for construction. There are currently no funding commitments for construction beyond this.

Key EastLink WA stakeholders include State and Federal governments and government agencies, local governments, landowners, residents and businesses, and all road users including the freight industry. A comprehensive list of stakeholders is provided in Appendix 1.

The project website can be accessed via the following link: https://www.mainroads.wa.gov.au/eastlinkwa.

Overall Approach to Sustainability in Project Development

Main Roads requires Eastlink WA to achieve a rating under the IS v2.0 scheme. Due to the scale of the project and long timeframe, the project is pursuing the rating as a program of three separate packages. In this report Package 1 covers Areas 1 and 2 (shown in Figure 1); Package 2 covers Areas 3, 4 and 5 (see Figure 1 and 2); and Package 3 covers Area 6 (see Figure 2).

The IPT has developed a Sustainability and Innovation Management Plan that provides a framework for the implementation of sustainability into all project activities and a pathway to achieve an IS rating. A Bronze rating award (20-39.9 points) is being targeted.

The project has a Sustainability Coordinator who is an Infrastructure Sustainability Accredited Professional (ISAP). The Sustainability Coordinator is part of the IPT Management Team and is supported by a team of sustainability professionals.

The project approach to sustainability is to:

- develop vision, focus areas and strategy.
- develop and implement processes and action plans.
- develop a foundation for sustainability initiatives to be included in delivery of the asset.

Sustainability in the Planning Phase

EastLink WA IPT includes sustainability initiatives in the project office. Activities to date have included:

- Knowledge sharing sessions and workshops to include sustainability considerations in decision making.
- Consulting with community and stakeholders on aspects of sustainability such as sustainability focus areas, urban design, project carbon emissions.
- Development of a framework for Aboriginal engagement across the full extent of the project throughout the project lifecycle.

Material Sustainability Issues

'Material' sustainability issues to the project can be defined as issues that:

- have the most impact
- are of most interest to stakeholders and Main Roads.

Understanding which issues are material to the project can guide where effort and resources are best placed to achieve sustainable outcomes.

Stakeholder consultation and workshops with the IPT, Main Roads and external stakeholders have informed the project's material issues. The materiality assessment was undertaken to identify and prioritise the sustainability topics for inclusion in the sustainability targets. Project issues were mapped against the United Nations (UN) Sustainable Development Goals (SDGs) to enable all sustainability aspects to be considered (Appendix 2).

Based on the outcomes of this process, the IPT has developed Sustainability Focus Areas and goals (Figure 4), and targets (Appendix 3) for the EastLink WA project to guide sustainability efforts. Sustainability targets can also be accessed via the above project website link. The IPT has reported quarterly to the project's senior advisory group within Main Roads on progress towards targets.

Focus area	Problem / Opportunity	Goal	Solution
How can we minimise the footprint of this infrastructure	Materials, water and energy from fossil fuels are finite resources.	Improve whole of life resource efficiencies (materials, water and energy). Increase demand for alternative materials.	Reduce the quantities we require of each resource. Work with suppliers to reduce impacts. Use waste as a resource.
How do we protect the environment in the project area	Environmental values can be impacted by infrastructure.	Identify, protect and enhance the environment through the design and options assessment process.	Protect environmental processes. Find opportunities to improve landscape quality and/ or linkages.
How do we value people and place	The project will alter places that our stakeholders value.	Maintain connectivity for communities and users. Create a sense of place that respects cultures. Build relationships with key stakeholders to collaboratively achieve social outcomes.	Incorporation of local knowledge. Design for the needs of all users.
How do we design for the future	Infrastructure is in place for future generations.	Improve resilience for communities to bushfire events and other shocks. Ensure long-term benefits from the project.	Understand the drivers for change. Ensure balanced and informed decision making. Consider how the road will be used today and in the future. Plan for how technology might influence current and future needs.
How do we leverage economic development	Jobs and business opportunities created through infrastructure projects can grow market capability and benefit regional economy.	Determine ways to enable capacity building for individuals and businesses.	Enable local and Aboriginal participation. Create links to training and education opportunities. Plan for local procurement.

Figure 3 EastLink WA Sustainability Focus Areas and goals

Environmental Aspects

Photo: Marion Dalton

Environmental Context

The EastLink WA project occurs within the Swan Coastal Plain, Jarrah Forest and Avon Wheatbelt Interim Biogeographic Regionalisation for Australia (IBRA) regions. The project will intersect key environmental values including:

- Conservation areas – a Bush Forever site (Site 302) within the Perth metropolitan area, the John Forrest National Park on the Darling Scarp, the Clackline Nature Reserve and the Woondowing Nature Reserve.
- Wetlands and waterways – the Swan River and Jane Brook on the Swan Coastal Plain and various waterways to the east within the Swan and Avon catchment areas.
- Threatened flora and fauna – surveys recorded both threatened flora and fauna along the alignment. Recorded locations will inform final design, impacts and mitigation strategies. Additional targeted surveys may be required to confirm extent both within and outside of the final footprint prior to construction.
- Threatened ecological communities – present on the Swan Coastal Plain and from Clackline to Northam. Recorded locations and extents will inform final design, impacts and mitigation strategies.

Additional targeted surveys may be required to confirm extent both within and outside of the final footprint prior to construction.

Potential project impacts to environmental aspects including water quality, noise, vibration, air quality and light will most likely be related to the construction phase and will be managed through management plans (to be developed during the environmental approvals process). Following construction, the project will increase noise and light levels along the alignment, which is anticipated to have more social than environmental impacts.

Preliminary Environmental Impacts Assessments (PEIAs) and Environmental Impact Assessments (EIAs) were undertaken to evaluate the existing environment and the potential impacts of the project on environmental aspects. Environmental surveys including flora and fauna surveys were undertaken in late 2021 to inform the State and Federal regulatory environmental assessment and approvals process.

The project has considered ways to minimise impacts on sensitive environments, source materials, water and energy, as well as the use and disposal of these resources during construction and operation. Opportunities to reduce impact have been incorporated into the project design. Delivery phase opportunities have been captured in registers that will be available to the next project phase. For example, sourcing of local materials from the Eastern Metropolitan Regional Council (EMRC) Red Hill facility, for pavement, fill and sub-base, represents an opportunity to minimise use of virgin materials and minimise the embodied carbon in materials.

The Sustainability Focus Areas relating to environmental aspects include:

- *minimise footprint of infrastructure*
- *how we protect the environment in the project area*.

Water Use

Water requirements are generally most significant during construction and opportunities will be explored to minimise water use and optimise water re-use at all phases of the project.

Dependence of water varies across the Eastlink WA project. The Perth Basin is the largest and most important groundwater resource in the region and across the Swan Coastal Plain. A large part of that is the Gnangara groundwater system, which in addition to supplying around 36% of Perth's drinking water is also in great demand for self-supply use by agriculture and irrigation of recreational areas and domestic gardens. In future phases the project will need to consider over-allocated groundwater reserves in the Swan Coastal Plain area and find opportunities to minimise further impact.

Hydrology is complex on the Darling Scarp, where landowners rely on dams, springs and rainwater to supply water for domestic and agricultural needs. Central Wheatbelt regions are reliant, in part, on the Goldfields Water Supply Scheme that transports its supply 560 km east from Mundaring Weir, located 40km north of Perth. The Goldfields and Agricultural Region Water Supply Scheme (GAWS) consists of 9,601 kilometres of water mains and services more than 100,000 customers, farms, mines and other enterprises. The main conduit remains one of the longest freshwater pipelines in the world. Due to lower groundwater availability in the Wheatbelt and agricultural demand, and drought conditions the scheme is heavily relied upon. In future phases the Project will need to seek alternative water sources to minimise impacts to existing users of the GAWS, this may include:

- Blended water – increasing application of non-potable water by blending it with potable water
- Investigating opportunities for desalination of brackish groundwater

- Alternative construction methodologies and water storage options.

Carbon Emissions & Energy

EastLink WA will require energy throughout the project lifecycle, with the construction and operation phases being the most energy intensive. The *Western Australian Climate Policy*, developed by the Department of Water and Environmental Regulation was released in November 2020. This policy outlines priorities for WA to transition towards a low carbon and climate resilient economy. The aspiration of Net Zero emissions by 2050 is keystone to the policy.

The EastLink WA project has undertaken preliminary calculations of energy requirements for the construction and operation phases. There are still many uncertainties regarding project design and delivery, however understanding the main likely contributors to Scope 1 and Scope 2 emissions and the Scope 3 emissions from embodied carbon has informed decisions in the design phase. Opportunities have been developed for consideration during design and construction, with a view to influencing the built infrastructure.

Estimates have used available project designs and assumptions to calculate emissions from vegetation clearing as well as from construction fuel use, electricity consumption and embodied energy (that is, the carbon emitted during manufacture of different materials).

The sources expected to contribute most to the project's carbon footprint include:

- Asphalt (in the sections where full depth asphalt is used)
- Concrete – both precast and in-situ, for example in structures, road safety barriers and noise walls
- Metals, for example in reinforcing and road safety barriers
- Land clearing, and the associated loss of carbon sink.
- Operational lighting, noting that technology changes are reducing the proportion contributed by lighting. For example, a switch from the older High Pressure Sodium lighting to LEDs, and anticipated shift to renewable electricity grid in coming decades.

Materials & Recycling

The project will require the use of materials for road construction and maintenance. Under the *Waste Avoidance and Resource Recovery Strategy 2019*, Main Roads has committed to reduce the use of virgin materials in road construction. State Planning Policy (SPP) 2.4 *Basic Raw Materials* also outlines the need to 'reduce future demand on sand, limestone, gravel and rock' in all types of construction. In future phases the EastLink WA project will need to further develop how it will avoid and minimise the use of virgin materials, where possible, by considering recycled materials. Table 1 outlines examples of substitute (recycled) materials for traditional construction materials.

Table 1 Examples of substitute materials for traditional construction materials

Traditional construction material	Road layer	Substitute material	Potential benefits of substitute
Sand, fill, gravel, aggregate	Subgrade	Crushed recycled glass	Enhance the WA recycled glass market, reduce land needed on project to stockpile
Aggregate	Subbase	Excess site-won fill	Cost savings, preserve raw resources, reduce

Traditional construction material	Road layer	Substitute material	Potential benefits of substitute
			waste, enhance circular economy
Crushed limestone	Subbase under full depth asphalt	Crushed Recycled Concrete (CRC)	Strong, durable product, self-cementing, reduced greenhouse gas (GHG) emissions
Crushed aggregate, sand	Basecourse/embankment	Mining overburden	Reduce gravel/borrow pit material use
Asphalt (aggregate, bitumen, sand)	Wearing/intermediate Course	Reclaimed Asphalt Pavement (RAP)	Preserve raw resources, reduce waste, enhance circular economy.
Asphalt (aggregate, bitumen sand)	Wearing/asphalt seal	Crumb rubber	Preserve raw resources, reduce waste, enhance circular economy Increase durability, resistant to cracking, oxidation, and ravelling
Limestone blocks	Road structures and furniture	Reconstituted structural blocks	Use of recycled materials, high quality and consistency compared to limestone
Cement	Road structures and furniture	Low carbon cement	Improve durability, less maintenance

Material volumes have been estimated to gauge the greatest potential impacts on raw material sources. As with energy calculations, these calculations have a degree of uncertainty, as the next stage of design for Packages 2 and 3 will refine the balance of cut to fill, once more detailed geotechnical information becomes available.

Materials are likely to be required in significant quantities for the following project elements:

- Embankment construction – general fill
- Subgrade – fine aggregates
- Subbase – crushed limestone
- Basecourse crushed rock

- Full depth asphalt, Open grade asphalt and Dense grade asphalt

Noise

EastLink WA will generate noise emissions during the project's construction phase and may result in increased noise levels during operation along some sections of the road. The project will adhere to SPP 5.4 *Road and rail noise*, which aims to:

- protect the community from unreasonable levels of transport noise
- protect strategic and other significant freight transport corridors from incompatible urban encroachment
- ensure transport infrastructure and land-use can mutually exist within urban corridors
- ensure that noise impacts are addresses as early as possible in the planning process
- encourage best practice noise mitigation design and construction standards.

In future phases noise assessments will be conducted to model current and operational noise emissions from the project.

Economic Aspects

Photo: Marion Dalton

Economic Context

Reid Highway, Roe Highway and Great Eastern Highway form part of Perth's Principal Road Freight Network. The Great Eastern Highway also forms the western portion of the PANH that connects Perth to Kalgoorlie and the eastern states, meaning that the EastLink WA project is strategically significant at a State and national level.

State and Federal governments have committed to funding for the construction of grade separations along Reid Highway at the intersection of Altone Road, Daviot Road / Drumpellier Drive (currently being procured for delivery by Main Roads) and Henley Brook Avenue / West Swan Road.

The delivery phase for these sections provides opportunities for local and Aboriginal businesses as well as for employment and training.

The Sustainability Focus Areas relating to economic aspects include:

- *design for the future*
- *leveraging economic development*.

Key Economic Outcomes

The project will improve connectivity between Perth and Northam, resulting in a forecasted off-peak travel time saving of 13 minutes and peak travel time saving of 33 minutes. Improvements to freight efficiency are also expected by allowing access for RAV 7 heavy vehicles (36.5m combinations) between Perth and Northam. The project is also expected to improve the service life of existing arterial roads by reducing the number of trucks having to use these routes and reducing maintenance costs. These improvements may also translate to benefits for air quality and carbon emissions from road users.

Options Assessment

Decisions made during the project planning and development phase can influence the whole of project life. It is therefore important to consider whole of life sustainability outcomes when identifying and assessing project options. The EastLink WA IPT process for options assessment is guided by a decision making framework that requires evaluation of environmental, economic, social and technical elements to enable multiple perspectives to be considered in decision making.

Aboriginal Engagement

The scale of the EastLink WA project presents significant opportunities to develop capabilities across regional communities, as well as metropolitan Perth. Stakeholders have told us they want to see opportunities created for regional Aboriginal businesses and job seekers.

An Aboriginal Engagement Framework has been developed covering the whole EastLink WA alignment, through all project phases. The framework provides a roadmap for timely and meaningful influence to ensure Main Roads and the Aboriginal community can achieve positive outcomes from this project. It outlines Main Roads' commitment to the Aboriginal community to engage in an authentic and meaningful way.

The framework is built around genuine partnerships with Aboriginal people, strong accountability, and a desire to leave a legacy of Aboriginal empowerment long after the EastLink WA project is completed.

Social Aspects

Photo: Marion Dalton

Social context

The project will occur in metropolitan, urban and regional landscapes and traverses the Whadjuk and Ballardong language groups, and with strong links to the Yued language group. Aboriginal, European and natural heritage sites occur along the alignment and represent potential project constraints. The project is located within the City of Swan, Shire of Mundaring and Shire or Northam Local Government Areas (LGAs).

Stakeholder consultation undertaken during 2022 has helped to inform the social context of the project area. Stakeholder input has been sought on access and connectivity to the highway, and on the Kep track heritage trail which is affected by the proposed alignment in some locations between Wundowie and Clackline.

The Sustainability Focus Areas relating to social aspects include:

- *people and place*
- *design for the future*.

Community & Stakeholder Engagement

Stakeholder consultation is recognised as a key component to the development of the project. Based on

stakeholder engagement activities and community surveys, key community and stakeholder values in the project area include:

- Environment and heritage
- Social surrounds – noise, pollution, visual amenity and rural character
- Directly affected properties and impact to local businesses
- Ultimate planning, size and scale of the project
- Heavy vehicles and road safety
- The possibility of investment in options other than the proposed project.

Community and Stakeholder Engagement (CSE) principles and objectives are outlined in Table 2.

Table 2 CSE principles and objectives

Principles	Objectives
Transparent communication builds trust and reduces conflict	Relationships with stakeholders and the community are built through timely and open communication. Commitments throughout the project are followed through efficiently and effectively.
Informed and diverse participation leads to meaningful input	Processes are designed to allow for difference and a diverse range of stakeholder and community members to participate.
Meaningful community and stakeholder input increases the quality of decisions	Input from engagement activities are incorporated into the final decision to the maximum extent possible. Decisions deliver a high value to the public.
Engagement is enabled by leadership at all levels	Systems, culture and decision-making supports quality engagement planning, delivery, evaluation and continuous improvement.
Planning and resourcing supports engagement	Appropriate time, finances and people are all allocated to projects to manage engagement activities and ensure quality outcomes.

Stakeholder consultation is being undertaken with:

- State and Federal governments
- State government agencies
- Local governments
- Environmental regulators
- Industry bodies
- Landowners, residents and businesses
- Traditional Owners

- Road users
- Freight industry
- Emergency services.

A comprehensive list of stakeholders is provided in Appendix 1.

Heritage

The project intersects Aboriginal, European and natural heritage sites, including the Swan River, the John Forrest National Park and the Goldfields Water Supply Scheme pipeline. In future phases of the project heritage assessments and consultation with Traditional Owners will be undertaken to determine the location and extent of additional heritage sites in the project area. Management actions will be informed by the outcomes of the assessments and regulatory heritage approvals.

Road Safety

The EastLink WA project will improve safety for road users by removing a significant number of trucks from the Perth Hills residential areas along Great Eastern Highway. Improvements to safety on the Perth Adelaide National Highway are also anticipated by providing verge and median barriers to reduce the incidence of head on crashes. The project will improve safety and urban amenity for residents and tourists through bridged intersections at two of the worst crash locations in WA – Reid Highway and West Swan Road / Henley Brook Avenue and Roe Highway and Morrison Road.

Community Amenity

The EastLink WA project will improve access for visitors into the Swan Valley and destinations in and around Gidgegannup, Mundaring and Northam. The project will also enable access to current and future development areas in Gidgegannup and Mundaring. Extension of Principal Shared Paths (PSPs) to Gidgegannup are anticipated to improve amenity for residents and cyclists / runners. Improvements to amenity for the communities of Mundaring and surrounds are also anticipated through reduced traffic along Great Eastern Highway.

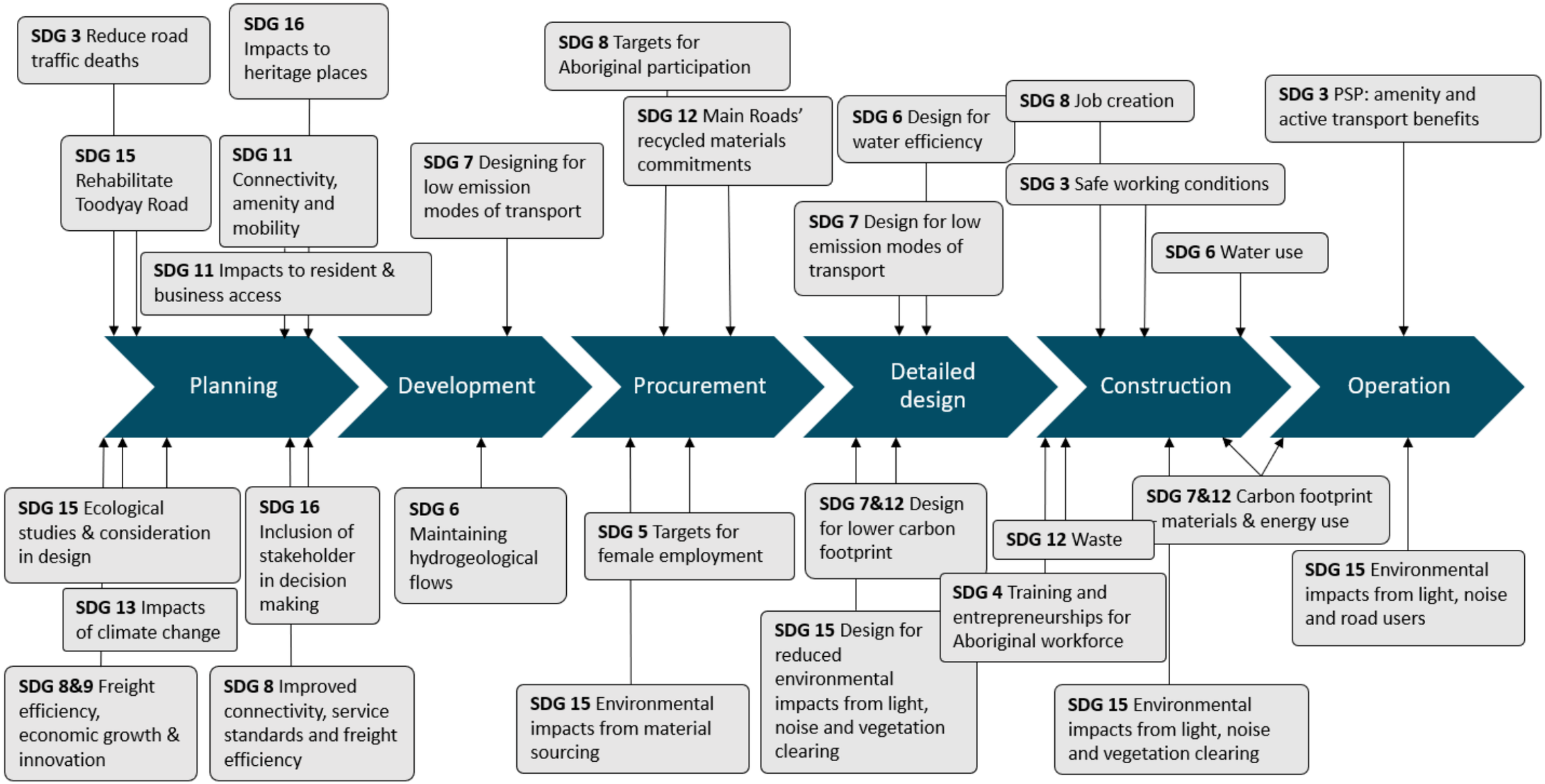
Projects of this type also have impacts that can reduce amenity in some areas, and these potential impacts need to be understood and mitigated where possible. For example, height of structures, noise and severance can cause issues in some areas.

Stakeholder consultation has been undertaken to understand amenity and incorporate knowledge into design considerations. Future phases will build on consultation done to date and will need to undertake further consultation to inform the design.

Appendix 1 – List of Stakeholders to the Project

- Federal Government
  - Federal Minister for Infrastructure, Transport and Regional Development
- State Government
  - Minister for Transport
- WA Federal Members
- State Local Members
- State Government Agencies
  - Department of Transport (DoT)
  - Department of Planning, Lands and Heritage (DPLH)
  - Department of Biodiversity, Conservation and Attractions (DBCA)
  - Department of Water and Environmental Regulation (DWER)
  - Environmental Protection Authority (EPA)
  - Perth Transport Authority (PTA)
  - Water Corporation / Service Providers
- Federal Government Agencies
  - Department of Agriculture, Water and Environment (DAWE)
- Emergency Services
  - Department of Fire and Emergency Services (DFES)
- Service providers (gas, electricity, broadband, water)
- Local Governments
  - City of Swan
  - Shire of Mundaring
  - Shire of Northam
- Regional Government
  - EMRC
- Businesses
  - Local Businesses
  - Construction-related Businesses
  - Aboriginal Businesses
- Local Residents
- Local Communities
  - Sporting Groups
  - Schools
  - Prisons
  - Cycling groups
- Road Users
- Aboriginal stakeholders
    - Elders
    - Stakeholder organisations

Appendix 2 – Project Value Chain Mapping against the UN SDGs



Appendix 3 – Sustainability Targets

Focus Area and relevant UN SDGs	Target	Status
Minimise footprint of infrastructure 	Identify priority materials for resource efficiency for each of the 3 Packages, based on material's lifecycle impacts, and considering direct and indirect impacts.	Preliminary lifecycle assessment complete to identify priorities. Resource efficiency opportunities identified for reference in future phases.
	Set SMART targets for at least 3 of the following: geopolymer concrete (by structural/ non-structural), binder, crushed recycled concrete as sub-base construction and demolition waste, single use plastic, diesel, glass cullet, food organics and garden organics. Incorporate into a plan for Delivery.	SMART targets handed over to Main Roads to progress in delivery of Area 2 (shown in Figure 1).
	Incorporate the following Main Roads sustainability requirements in the preliminary pavement designs for the Metropolitan area: • ≥ 50% of pavement utilises crumb rubber modified (CRM) open-graded asphalt; (OGA); and • ≥ 50% of pavement utilises Level 2 (11-25%) reclaimed asphalt pavement (RAP) 20 mm asphalt intermediate course	SMART targets handed over to Main Roads to progress in development for delivery of Area 2.
	For each of the 3 Packages, identify and quantify at least 3 energy/ carbon reduction initiatives to be handed over to the Delivery team for implementation in delivery phase.	Preliminary lifecycle assessment complete to identify priorities. Energy efficiency opportunities identified for handover to Main Roads to progress in future phases.
	Identify 3 opportunities to minimise or avoid water use during construction and operation, and incorporate into a plan for Delivery phase.	Water efficiency opportunities identified for handover to Main Roads to progress in future phases.
Environmental services and impacts 	Investigate at least 2 opportunities to protect ecological value on the project to be handed over to the Delivery team for implementation in delivery phase.	Opportunities adopted in design.
	Investigate at least 2 opportunities for ecological enhancement on the project to be handed over to the Delivery team for implementation in delivery phase.	Opportunities adopted in design.
People and place 	Urban design vision, objectives and strategy directly inform at least one design decision in each Package	Opportunities adopted in design.
	Investigate at least 2 opportunities to protect Aboriginal and historical heritage value on the project to be handed over to the Delivery team for implementation in delivery phase	Opportunities dependent on more detailed heritage surveys in future phases.
	Investigate at least 2 opportunities for Aboriginal and historical heritage enhancement on the project to be handed over to the Delivery team for implementation in delivery phase	Opportunities dependent on more detailed heritage surveys in future phases.
Design for the future 	Prepare a resilience report and accompanying Interdependent asset register with proposed treatment options.	Assessment of resilience risks and proposed treatments has been completed for handover to Main Roads to progress in future phases.

	Stakeholders in each Package are given the opportunity to comment on sustainability focus areas.	Completed as part of stakeholder engagement activities for the project.
Leveraging economic development 	Investigate at least 3 existing capacity building initiatives across the project for implementation in either Project Development or Delivery.	Initial opportunities identified for handover to Main Roads to progress in future phases. Further work will be required as delivery funding is confirmed.
	Develop a decision-making framework with guidance on how to identify and assess significant decisions.	Framework in place and has been in use for project decisions.

Appendix 4 – Glossary of Terms

Term	Definition
CRC	Crushed Recycled Concrete
CSE	Community and Stakeholder Engagement
EMRC	Eastern Metropolitan Regional Council
GHG	Greenhouse gas
IBRA	Interim Biogeographic Regionalisation for Australia
IPT	Integrated Project Team
IS	Infrastructure Sustainability
ISAP	Infrastructure Sustainability Accredited Professional
ISC	Infrastructure Sustainability Council
IS Rating Scheme	Infrastructure Sustainability (IS) rating scheme comprises; • The IS rating tools for Planning, Design & As Built and Operation • ISC education and training programs (including the IS Accredited Professional program) • Working and Advisory Groups.
IS rating tool	The IS rating tool is the tangible part of the scheme used to undertake assessment. It comprises: • The IS Technical Manual • IS rating tool scorecard (IS Scorecard) • IS Materials Calculator – a calculator used to measure performance in the Materials category (Design & As Built and Operation only).
Main Roads	Main Roads Western Australia
Objective	The desired result or outcome that the project is trying to achieve.
PANH	Perth Adelaide National Highway
PEIA	Preliminary Environmental Impact Assessment
PSP	Principal Shared Path
RAP	reclaimed asphalt pavement
RAV	Restricted Access Vehicle
Recycled	A used item is processed into a new product via an energy consuming process.
SPP	State Planning Policy
UN SDGs	United Nations Sustainable Development Goals
Vision	A sentence or short paragraph describing the aspirations for the project that underpin strategic planning.