

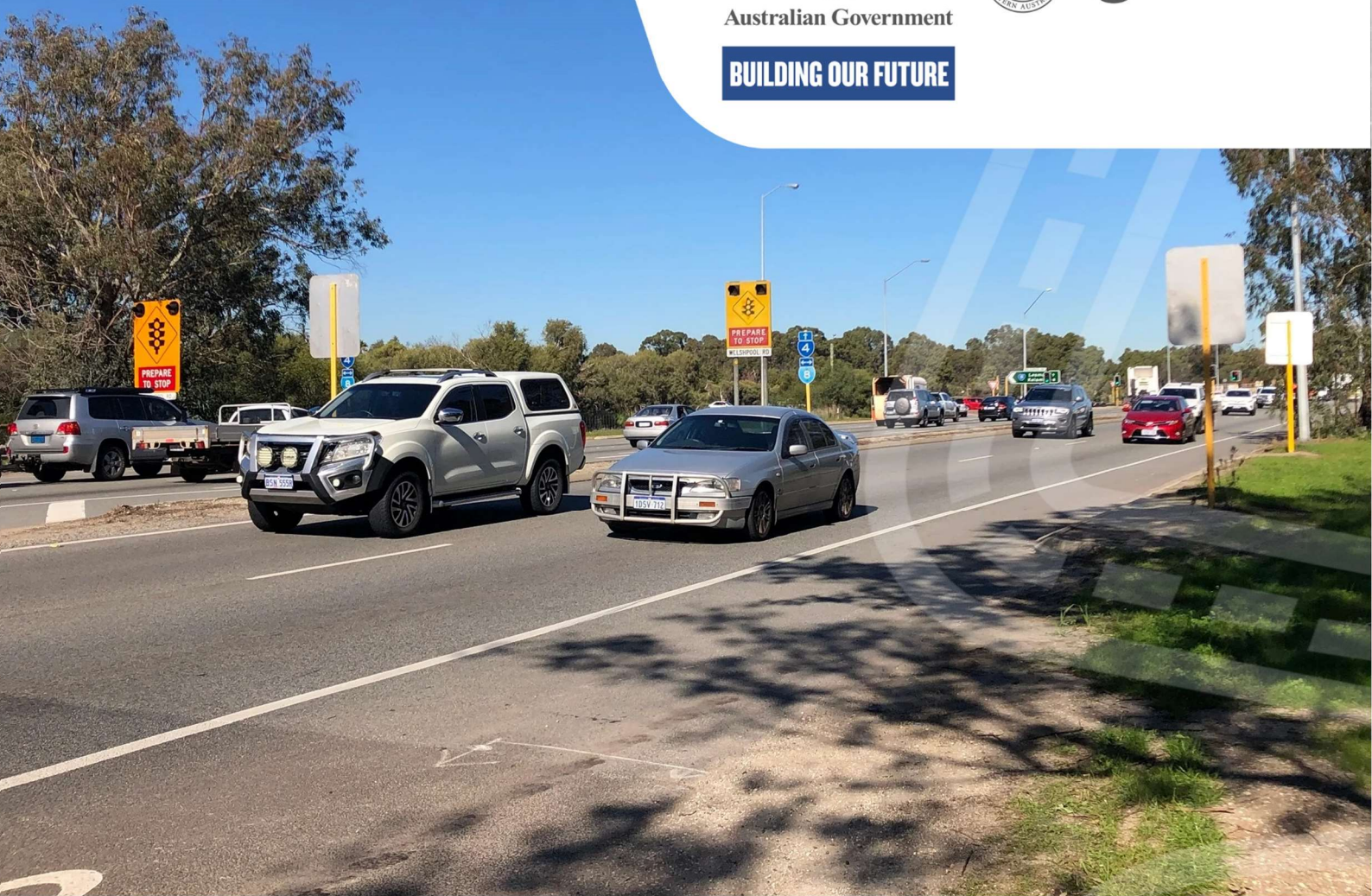


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Tonkin Highway Corridor Upgrade: Annual Project Sustainability Report 2020

This annual report covers the period from January 2020 to November 2020.

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About this Report

This report has been prepared by the *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* 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 Global Reporting Initiatives (GRI) principles. Material topics reported in this report have been determined through a materiality process that adheres to the Infrastructure Sustainability Council of Australia (ISCA).

The *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project is aligned with the ISCA Planning rating framework (version 2.0).

Introduction

Tonkin Highway forms a key road corridor that currently stretches from Reid Highway to Thomas Road. It forms a crucial artery in servicing key economic areas around the Perth metropolitan area including Perth Airport, as well as the Malaga, Collier Road and Kewdale industrial estates. This project is part of the \$1.2 billion Tonkin Highway Transformation Project, which also includes Tonkin Gap and Tonkin Extension.

The *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project is upgrading 6.2 km of Tonkin Highway to improve connectivity and alleviate congestion between Roe Highway and Kelvin Road.

The project team's vision is for **"a sustainable transport network that meets social, economic and environmental needs"**. The team is committed to delivering a project that achieves the best sustainable outcome that aligns with the United Nations Sustainability Development Goals (UN SDGs) and provides a positive social, environmental and economic legacy for future generations.

Highlights

Sustainability highlights to date:

- Ongoing community and stakeholder engagement,
- Sustainability Management Plan in development,
- Material UN SDGs identified,
- Urban Landscape Design Framework and Green Infrastructure Plan in development,
- Water quality monitoring and testing underway,
- Greenhouse Gas Assessment underway,
- Resource Efficiency Strategy in development,
- Soil sampling for detection of acid sulfate soils conducted,
- Resilience Plan in development,
- Climate Change and Natural Hazard assessment underway, and
- Sustainability related risks and opportunities identified and assessed.

Overview

The objective of the *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project is to upgrade a 6.2 km section of Tonkin Highway, from south of Roe Highway to Kelvin Road intersection, while minimising the impact to the environmentally sensitive areas within the project extents. Tonkin Highway (H017) is a key north-south artery that connects into some of Perth’s most important corridors such as Reid Highway, Great Eastern Highway, Leach Highway and Albany Highway. Tonkin Highway is identified as a Primary Distributor, which services key economic areas around the Perth metropolitan area including Perth Airport, as well as the Malaga, Bayswater and Kewdale industrial estates.

Main Roads Western Australia (Main Roads) intends to upgrade the existing Tonkin Highway from SLK 16.25 to SLK 22.40, including grade separation of intersections at Hale Road, Welshpool Road and Kelvin Road. This project interfaces with various current and future projects, which are listed in Appendix 1. The project extents are illustrated in Figure 1 below.

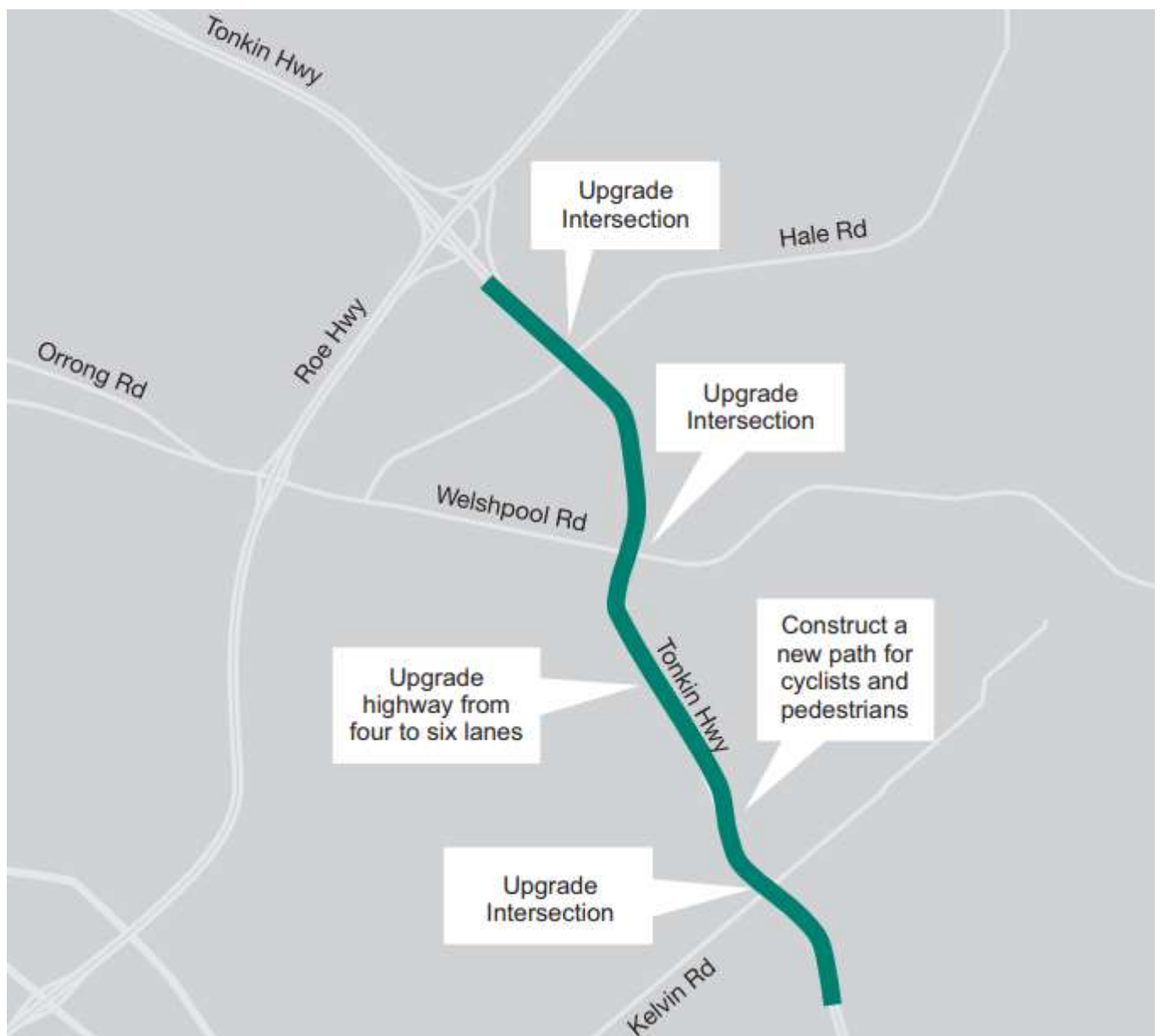


Figure 1: Project Extents

The Hale Road intersection configuration was previously proposed as a flyover; however, this configuration has been revised to include north facing ramps in a half diamond interchange configuration, to improve connectivity. The proposed Welshpool Road configuration is an elongated grade separated roundabout, whilst the previously proposed Kelvin Road grade separated roundabout configuration is undergoing a multi-criteria assessment (MCA) process and is yet to be confirmed.

The *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project will provide 3 lanes in each direction with full width shoulders to enable 4 lanes in each direction to be implemented in future. This will alleviate congestion and improve the economic efficiency in transporting goods. The scope also includes a Principal Shared Path (PSP) that will be located on the eastern side of Tonkin Highway for the full length of the upgraded extents, with lighting and shared path connections to side roads.

The committed project funding is \$366 million, with an 80/20 split between Federal and State funding. Contract award is anticipated in Q4 of 2021 with construction commencement anticipated in 2022.

The project website can be found at:

<https://www.mainroads.wa.gov.au/projects-initiatives/projects/metropolitan/tonkin-highway-corridor/>.

Overall Approach to Sustainability in Project Development

Main Roads has registered the *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project with the Infrastructure Sustainability Council of Australia (ISCA) for a Planning rating under the Infrastructure Sustainability (IS) v2.0 Planning framework. The latest version of the ISCA IS Rating Tool Scorecard has been utilised to demonstrate the level of sustainable practice embedded within the Project Works and deliver IS Planning rating components for the Project.

Main Roads has an integrated sustainability team consisting of Main Roads discipline leads and a number of contributing parties (Arup, Landscape Planners, Syrinx, Lloyd George Acoustics, 360 Environmental, Aurecon, IQE and Archae-Aus) working to deliver ISCA credits with the aim of achieving a Bronze ISCA Planning Rating. This scope of work has also required liaison with specific stakeholders, listed in Appendix 2.

The *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project has developed a Sustainability Management Plan (SMP) aligned with the Main Roads Sustainability Policy. The SMP captures the vision and objectives that set the strategic direction for sustainability for the project and focus on these areas will allow the project to achieve sustainability outcomes beyond business as usual. The Keeping WA Moving strategic objective is “To provide world class outcomes for the customer through a safe, reliable and sustainable road-based transport system.” In the context of the *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project, this requires alignment of all phases of a project’s life cycle with the UN SDGs.

The outcome to be achieved for sustainability is to “*Develop a sustainable transport network that meets social, economic and environmental needs*”. To achieve this outcome the following objectives have been adopted by the Project:

- Improve safety, connectivity and maximise network resilience,
- Enhance biodiversity and maximise positive environmental outcomes,
- Enhance economic growth via improved freight efficiencies and local employment,
- Promote responsible use of resources,
- Minimise impacts on Aboriginal Heritage and European listed heritage, and
- Maximise innovation and challenge beyond business as usual.

Targeted ISCA credits have been progressed throughout the Development Phase of the project, with due consideration to sequencing and schedule to align with objectives and overall intent of the IS rating scheme. As part of the Planning Phase, targets will also be set by the Project.

Material Sustainability Issues

Following the Materiality Assessment undertaken during the Kick-Off Sustainability Workshop for this project on 10 February 2020, the UN SDGs assessed as material that the project contributes towards include:

- UN SDG 3: Good Health and Well-Being
- UN SDG 6: Clean Water and Sanitation
- UN SDG 7: Affordable and Clean Energy
- UN SDG 8: Decent Work and Economic Growth
- UN SDG 9: Industry, Innovation and Infrastructure
- UN SDG 11: Sustainable Cities and Communities
- UN SDG 12: Responsible Consumption and Production
- UN SDG 15: Life on Land
- UN SDG 16: Peace, Justice and Strong Institutions
- UN SDG 17: Partnership for the Goals

It should be noted that omission of the rest of the UN SDGs from the above list will not result in the project neglecting the potential positive impact it can have on achieving those omitted goals, rather they have been assessed to be less material. This assessment feeds directly into the project's Sustainability Management Plan (SMP), which provides guidance on the work to be undertaken during the Project Development Phase, timing and dependencies for facilitating successful integration of sustainability into the design and other activities during project development.

In addition to the materiality assessment, the Kick-off Sustainability Workshop included a risk and opportunities discussion. This enabled internal stakeholders to list direct and indirect governance, economic, environmental and social risks and opportunities throughout the entire project lifecycle. External stakeholder feedback on the identified risks and opportunities will be requested during the Reference Design. For specific aspects of the project, the most material issues currently identified are listed in the table below:

Table 1: Material Project Sustainability Issues

Material Issue	Description
UN SDG 3: Good Health and Well-Being	<ul style="list-style-type: none"> • Consider improved health and wellbeing through upgrading a critical link in the Highway to reduce rates of Killed or Seriously Injured (KSI) road users • Consider improved health and wellbeing through upgrading a critical link in the PSP network to encourage active transport aligned with ULDF, GIP and Long-Term Cycle Network Strategy
UN SDG 6: Clean Water and Sanitation	<ul style="list-style-type: none"> • Consider improved surface and ground water quality through implementation of Water Sensitive Urban Design principles and at source control
UN SDG 7: Affordable and Clean Energy	<ul style="list-style-type: none"> • Consider alternative renewable energy sources to be used in construction and/or operation
UN SDG 8: Decent Work and Economic Growth	<ul style="list-style-type: none"> • Consider improved economic growth through improved freight efficiencies • Creation of jobs throughout project life cycle

Material Issue	Description
UN SDG 9: Industry, Innovation and Infrastructure	<ul style="list-style-type: none"> Consider reduced material energy and carbon emissions, based on reasonable estimates, calculations or predictions of energy use by the project over its life cycle. Consider Scope 1, 2 and 3 emissions estimates and identify any innovations to reduce as part of the greenhouse gas emission assessment
UN SDG 11: Sustainable Cities and Communities	<ul style="list-style-type: none"> Consider requirements to retain connectivity to the surrounding locality around each interchange Consider journeys to local schools/clubs ensuring these are not adversely impacted Consider resilience requirements into the future through climate and natural hazards workshop and collaborative risk and opportunities identification Ensure emergency service access within the project zone of influence in this high-risk bushfire area
UN SDG 12: Responsible Consumption and Production	<ul style="list-style-type: none"> Address material energy and carbon emissions reductions through using local raw material sources, with reduced haulage resulting in lower impact on local traffic network. Highway lighting will be the most significant contribution to GHG emissions during project operation Consider streamlining the design and power source Consideration of transportation of materials to and from site during construction
UN SDG 15: Life on Land	<ul style="list-style-type: none"> Mitigate project impacts through implementation of Green Infrastructure Strengthening ecological linkages through aligned landscape design and offsetting impacts (where required)
UN SDG 16: Peace, Justice and Strong Institutions	<ul style="list-style-type: none"> Minimise impacts on Aboriginal and European heritage listed areas within the project boundary
UN SDG 17: Partnership for the Goals	<ul style="list-style-type: none"> Strengthen partnerships through proactive stakeholder engagement with the multiple impacted and interested parties Identify key issues for external stakeholders (including road user groups, environmental groups, government agencies, local government authorities and community representatives) and adopt collaborative resolution

Urban Landscape and Green Infrastructure

An Urban and Landscape Design Framework (ULDF) has been developed for the project. The ULDF is currently in draft form and will be finalised during the project Planning Phase. The ULDF report details the key planning and design features of the infrastructure and its surrounds. The report includes a site analysis, the project's vision, principles and objectives and the project's identified options and strategies. Objectives within the report relate to:

- Integrating with existing infrastructure and development,
- Urban form,

- Transport,
- Recreation centres and local businesses, and
- Landscape and Green Infrastructure.

A Green Infrastructure Plan (GIP) has been drafted and aims at satisfying the ISCA credit Green Infrastructure (Gre-1) requirements. The plan identifies the ecosystem services to be provided by the project's green infrastructure, forms a basis for establishing targets and identifies green infrastructure opportunities and strategies to achieve these targets. This document will be finalised during the Planning Phase.

Environmental Aspects

Environmental Context



Figure 2: Banksia Woodlands on Swan Coastal Plain

The project is located within the Perth metropolitan area on the eastern side of the Swan Coastal Plain. The project footprint traverses the City of Kalamunda and the City of Gosnells, approximately 12 km south-east of the Perth Central Business District. The project footprint includes the existing Tonkin Highway road corridor, areas cleared for urban development as well as some native vegetation areas within the Hartfield Park Bushland, Clifford Street Bushland and Greater Brixton Street Wetlands Bush Forever Sites.

There are several environmentally sensitive areas located within the project boundary, including:

- Threatened and Priority Ecological Communities (TECs and PECs),
- Bush Forever Sites – Hartfield Park Bushland (Site 320), Clifford Street Bushland (Site 53) and Greater Brixton Street Wetlands (Site 387),
- Threatened and Priority flora,
- Wetlands, and
- Fauna habitat, including habitat for Threatened and Priority fauna.

The project intersects two major tributaries – Woodlupine Brook and Yule Brook. Both these brooks are proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act), listed as Canning River and tributaries. Woodlupine Brook intersects the project boundary north of the Hale Road and Tonkin Highway intersection and Yule Brook intersects north of the Welshpool Road and Tonkin Highway intersection. Woodlupine Brook flows in a south westerly direction before joining Yule Brook and Yule Brook flows in a westerly direction. Field screening tests showed that there are potential acid sulphate soils (PASS) at the Kelvin Road intersection, however the associated risk was determined to be low.

The project intersects several registered Aboriginal heritage sites and cultural heritage sites. Main Roads undertook consultation with representatives of the Whadjuk Noongar Representatives as part of an Aboriginal ethnographic and archaeological site identification survey and no new sites were identified. In order to proceed with the project, application is required for Section 18 consent under the *Aboriginal Heritage Act 1972* (AH Act).

Environmental Management

The following environmental or heritage approvals, permits or licences are needed for implementation of the project:

- *Environmental Protection Act 1986* Section 38 referral to the EPA,
- *Environment Protection and Biodiversity Conservation Act 1999* referral to DAWE,
- AH Act section 18 consent,
- Licences to construct bore and abstract water, and
- Bed and banks permit.

Due to the potential for environmental impacts, the project has been referred to the State and Federal environmental regulators for assessment. Careful consideration has been given to avoiding and minimising impacts to these environmentally sensitive areas in the design process, and the project can't proceed without the appropriate approvals being obtained from the State and Federal environmental regulators.

Water Management

Groundwater levels across the project range from 14 m to 22 m Australian Height Datum (AHD) and the project is not located in a Public Drinking Water Resource Area. To support water efficiency and use of suitable water sources during the Construction Phase, early water source investigation will be undertaken. A desktop review of existing information has been undertaken and water quality testing has commenced (wetlands, groundwater, waterways and drainage). The results of this monitoring will be used to investigate water sources and water use for the project as well as to inform drainage design.

Carbon Emissions and Energy

A Greenhouse Gas (GHG) Assessment has been undertaken between SLK 16.25 and SLK 20.40 (this includes Hale Road and Welshpool Road intersections) to meet an Environmental Protection Authority (EPA) deadline. It is noted that this assessment will be updated to include the full project extents once the Kelvin Road preferred interchange configuration has been confirmed. The assessment predicted the volume of GHG emissions (including scope 1, scope 2 and scope 3 GHG emissions) throughout the project life cycle. The GHG assessment presents the preliminary 'Base Case' emissions, which is based on the current Concept Design for the project and will be compared to the 'Actual Case' (i.e. 100% Design) in the Design Phase.

The GHG assessment of the IS Base Case has been conducted to meet the requirements for the Energy Efficiency (Ene-1) credit for the IS Planning Rating under v2.0 and the EPA standards.

To compile the energy and carbon footprint for the project, the Carbon Gauge tool created by Transport Authorities Greenhouse Group was utilised. The Carbon Gauge is an industry carbon calculator, which is a software implementation of the greenhouse gas calculation methods described in the GHG Assessment Workbook. Carbon Gauge provide a means of estimating the materiality significant whole of life GHG emissions during the major road activities of construction, operation and maintenance calculated over a 50-year infrastructure life.

Based on the assessment, the major sources of greenhouse gas emissions for this project are material production and construction, fuel combustion during construction and vehicle use on the road during

operation. Results of the Greenhouse Gas Assessment will be published in the appendices of the EPA referral, as this is now also an EPA requirement.

It is important to focus on strategies to reduce GHG emissions for this project in order to improve air quality and consequently the health and well-being of the road users and natural environment. The following opportunities have been identified to reduce emissions throughout the project lifecycle and will be investigated in further detail in the Design Phase to determine if they are feasible.

Table 2: Emission reduction opportunities

Opportunity	Impact
Reduce area of vegetation to be removed within the project boundary	Reduction in emissions due to clearing of vegetation whilst also reducing the quantity of lost carbon from removing such vegetation
Vegetation offsets	Replanting the disturbed vegetation and/or planting new vegetation will offset the lost carbon from the vegetation removal
Use warm mix asphalt instead of hot mix asphalt	Reduces greenhouse gas generation during manufacturing
Solar generated power for site offices / general areas	Reduction in fuel combustion from generating electricity to site offices / general areas
Inclusion of laydown electric car charging bays	Promotes the use of automated/electric vehicles within the boundary to reduce vehicle emissions
Solar generated power for streetlights	Reduction in emissions from powering streetlights within project boundary

Materials and Recycling

A Resource Efficiency Strategy (RES) has been prepared based on investigations undertaken for resource use and waste. This strategy outlines the relevant approvals required for the project, resource efficiency goals, resource estimation, key risks and opportunities relating to resource efficiency and potential partnerships that could be beneficial for later stages of the project to assist in achieving the resource efficiency targets.

A multi-disciplinary team were involved in the identification of goal areas and opportunities for resource efficiency as part of sustainability workshop in January 2020. The overarching priority resource efficiency goals that were identified include:

- Developing a design that minimises project waste outputs,
- Optimisation of materials required throughout the project life cycle,
- Utilisation of existing local resources,
- Promoting responsible material sourcing (i.e. minimising haulage of material, sourcing materials from near-by sites),
- Consideration of various drainage designs with regards to pollution control,
- Ensuring a balance of cut and fill material,
- Catering for the future traffic demands, and
- Consideration of alternative barrier systems.

Potential hurdles with pursuing these opportunities that were identified include increased cost, resource availability and complying with current standards.

Whilst all these goals provide opportunity to incorporate sustainable design outcomes within the project, it is important to ensure that these solutions do not impact the accessibility for maintenance nor the longevity of the asset. Main Roads is investigating opportunities to incorporate Crushed Recycled Concrete (CRC) and Crumb Rubber within this project.

Further investigation into how these goals will be achieved will be conducted during the Reference Design stage and the Resource Efficiency Strategy will be updated accordingly.

Emissions

Methods to reduce other adverse impacts including noise, air quality, vibration, light spill and dust mitigation will be investigated further during the Reference Design stage. The emissions listed are all considered within the project's Risk and Opportunity Register that details potential treatment options that will be investigated in detail throughout the Planning Phase.

Acid Sulphate Soils

A desktop risk assessment that identifies acid sulfate soil (ASS) risks has been undertaken and a high acid sulphate soil disturbance risk is expected at the Welshpool Road intersection from the desktop study. Field screening tests were conducted on 30 soil samples for assessment of presence of ASS, with all laboratory results included in the Geotechnical Factual and Interpretive Report. Management actions for delivery will be documented in a project Environmental Management Plan or Acid Sulfate Soil Management Plan (ASSMP).

Economic Aspects

Economic Context

Tonkin Highway is a 44 km north-south highway and partial freeway in Perth. It is part of the National Land Transport Network and links Perth Airport and Kewdale with the city's north-eastern and south-eastern suburbs. The northern terminus is at Reid Highway in Malaga, and the southern terminus is at Thomas Road in Oakford. It connects to Reid Highway and Roe Highway to form part of a critical freight and passenger vehicle orbital around the Perth metro area.

Western Australia's Land Use Planning and Transport Strategies recognise Tonkin Highway as a critical component of the Metropolitan Road Freight Network. As part of this network, Tonkin Highway facilitates movements to and from commercial / industrial zones in Canning Vale, Kewdale, Ashfield, Malaga and Balcatta, and resource sector locations in the north of the State as well as to the Perth and Jandakot Airports. These areas combine to generate some of the highest levels of employment in the Perth metropolitan area. Tonkin Highway therefore serves a critical purpose in facilitating the movement of freight and commuter traffic. It is also a designated Heavy Wide Load (HWL) corridor and requires 10 m vertical x 10m width clearance.

Key Economic Outcomes

The *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project is part of the Tonkin Highway Transformation that sets out to:

- Improve safety,
- Ease congestion and reduce capacity pressures on the wider metro transport network,
- Improve access to Maddington Kenwick Strategic Employment Area (MKSEA), and
- Enable full realisation of benefits of existing infrastructure associated with Gateway and Northlink and future infrastructure and planning initiatives (e.g. Westport and MKSEA).

Resilience

Careful consideration and planning have been conducted to ensure this project contributes towards the resilience of the Perth Metropolitan Region. Through a workshop with key stakeholders (including Main Roads, Arup, the City of Gosnells and the City of Kalamunda), a range of acute shocks and chronic stresses that are likely to impact the functionality of the asset and its service to the community were identified. Interdependent physical assets and services within and surrounding the project extents that are likely to be impacted if the asset lost functionality or operate at minimal capacity were also identified. Treatment options to manage the impact of these shocks and stresses to Tonkin Highway and the interdependent assets were discussed in detail. A report will be prepared to capture the outcomes of the resilience study/work and desktop assessment.

Climate Change Assessments

Climate change and natural hazard risks have been assessed for the *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project using the AS 5334 process for risk assessment. A high-level review of historically recorded climate change and natural hazard events for the project site has been undertaken. In addition, the inherent levels of tolerance to climate change and natural hazards have been investigated. During a workshop with key stakeholders (including Local Government representatives), asset components within the project (e.g. pavement, structures, lighting, etc.) were assessed based on the impact that specific

natural hazards would have on the asset in 2020, 2030 and 2090 using current climate projections. It is noted that ideally this assessment should be done to cover the full design life of the asset (100 years). However, current climate projections only present up to the year 2090 estimates. The natural hazards considered were:

- Heatwave,
- Drought,
- Bushfire,
- Flooding,
- Storm, and
- Cyclones.

Treatment options to mitigate these risks to the asset components were discussed during the workshop and later summarised within the Climate and Natural Hazards Risk Register. A Climate Change Assessment Report discussing the above in detail is to be produced in due course.

Social Aspects

Social Context

The communities surrounding the project area are extremely important stakeholders and create the urban fabric in which the project sits. The surrounding communities are impacted by the changes to the roadway daily, as they live next to, commute on, and move across the highway.

The residential communities immediately surrounding the project include the suburbs of:

- Forrestfield (City of Kalamunda),
- Wattle Grove (City of Kalamunda), and
- Orange Grove (City of Gosnells).

The community facilities and characteristics of the above suburbs are described in detail in the Urban Landscape Design Framework (ULDF).

The suburbs of Maddington (City of Gosnells) and Kenwick (City of Gosnells) are located to the west of the project area, but are less affected by the road as these areas are generally zoned industrial, with the residential areas located further away from the project area to the west of the alignment.

While the additional communities in the hills areas (e.g. Lesmurdie and Kalamunda) are not directly adjacent, it is recognised that members of these communities are commuters through the area.

Within these surrounding communities are the following community facilities:

- Primary schools (Woodlupine, Forrestfield, Wattle Grove and Orange Grove Primary),
- Hartfield Park Recreation Centre/Area (home of Forrestfield Football Club, Netball and Basketball courts, Forrestfield District Bowling Club, Kalamunda Rugby Union Club, Kalamunda Rugby League Club and Hartfield Golf Club),
- Forrestfield Youth Club,
- Discovery Caravan Park,
- Shopping Centres (Forrestfield and Wattle Grove),
- Jehovah's Witness Hall,
- Syrian Church,
- Veteran Car Club, and
- Various local businesses.

These facilities have and will continue to be considered within the Planning Phase to minimise impacts throughout the project's lifecycle.

There are several registered Aboriginal heritage sites within or directly adjacent to the project extents, including Maamba Reserve (which Tonkin Highway runs through). This required consultation with representatives of the Whadjuk Noongar Representatives as part of an Aboriginal Ethnographic and Archaeological Site Identification Survey under the *Aboriginal Heritage Act* to verify extents of registered sites. Efforts will be made to remove or mitigate impacts to these sites. Any confirmed impacts on these registered sites will require a Section 18 approval prior to disturbing during construction.

The expected social outcomes from the project are:

- Improvement of the safety and functionality of the corridor,
- Alleviates congestion and reductions in travel time,
- Create urban design solutions for the project that enhance the project for the surrounding

communities,

- Provide structural forms and ULD solutions that connect communities that are separated by the highway,
- Provide connectivity for public transport within the project interchanges, including adjust facilities outside the project area where required,
- Provide safe cycling and pedestrian routes for the communities across the alignment so facilities can be easily accessed,
- Provide hard and soft landscaping, and
- Mitigate/minimise impacts to Aboriginal Heritage sites.



Figure 3: Surrounding Communities

Community & Stakeholder Engagement

Stakeholder consultation is being undertaken in accordance with Main Roads’ Community and Stakeholder Engagement Strategy (CSES). Ongoing engagement will take place as the project progresses through design and construction phases of this project. The CSES is an evolving document designed to underpin communication and engagement of the Proposal through to the development and delivery of the Proposal and incorporate stakeholder interests via ongoing review or feedback and activities.

The Stakeholder Communication Strategy provides:

- A comprehensive project narrative and messaging around key issues to ensure consistency of communication,
- Identification of key issues, risks and challenges requiring careful management, along with proposed mitigation methods, and
- A summary of Main Roads’ approach to communication and engagement and the tools and methods utilised to maximise community involvement.

Addressing Community Concerns

In line with the CSE strategy, which has identified potential issues and engagement requirements, Main Roads has commenced the consultation process. Main Roads has a corporate target of providing responses within 10 days to queries (the project team has a target to provide immediate responses where possible).

Key activities held throughout 2019 included:

- A stakeholder engagement resource allocated to manage community queries via email, website and phone,
- Project page uploaded to the Main Roads website,
- Briefings with the two local government authorities – the City of Gosnells and the City of Kalamunda to discuss the project with technical staff and seek feedback,
- Meetings with communications managers at the Cities of Gosnells and Kalamunda to discuss the project and seek advice and collaboration for community engagement,
- Engagement with local environment groups,
- Letters to nearby residents regarding property access and noise monitoring requirements, and
- Consultation with representatives of the Whadjuk Noongar Representatives as part of an Aboriginal Ethnographic and Archaeological Site Identification Survey under the AH Act (see section 8.3.1 for details).

A key outcome of this consultation was community support for improved access travelling North at Hale Road/ Tonkin Highway instead of the initially proposed flyover. Investigations were undertaken to determine what was feasible given the environmental and geometric constraints in the area.

In 2020 Main Roads has expanded its engagement to the wider community as the Proposal was further developed. This engagement included, but was not limited to:

- A full council briefing with the City of Kalamunda,
- Meetings with, and letters to potentially impacted landowners prior to wider consultation (including Hardey Road closure),
- 7410 newsletters delivered,
- Newsletters emailed to businesses and key stakeholders,
- Targeted meetings with interested residents and businesses,
- Project updates sent to an email database of over 1200 subscribers (residents, businesses and stakeholders),
- Meetings with: Friends of Woodlupine Living Stream, Nature Reserves Preservation Group, Friends of Woodlupine Brook to provide local environmental knowledge,
- Commitment to meet with Kalamunda Environmental Advisory Committee,
- Commitment to advise community and stakeholders about outcomes for local roads with reference to traffic modelling, develop visual communications to show size and scale of interchange structures, travel time improvements and environmental impacts, and

- Individual meetings with landowners potentially impacted by the project (including in the vicinity of Kelvin Road).

A Community Reference Group or groups may be established in the locality of the Proposal. Issues-based engagement targeting specific key stakeholders will also continue to ensure issues and opportunities are thoroughly explored.

Table 3: Stakeholder Consultation

Stakeholder Consultation	Date	Participant Agencies	Purpose and Topics Covered
Media Statement; Website	May 2019	<ul style="list-style-type: none"> • All stakeholders 	<ul style="list-style-type: none"> • Funding announcement
Meeting	23 May 2019	<ul style="list-style-type: none"> • City of Gosnells technical staff 	<ul style="list-style-type: none"> • Provide project update • Establish future working relationship • Identify relevant staff • Seek advice on potential local issues
Meeting	7 June 2019	<ul style="list-style-type: none"> • City of Kalamunda technical staff 	<ul style="list-style-type: none"> • Provide project update • Establish future working relationship • Identify relevant staff • Seek advice on potential local issues
Site visit	23 August 2019	<ul style="list-style-type: none"> • Whadjuk Working Group 	<ul style="list-style-type: none"> • Aboriginal Ethnographic and Archaeological Site Identification Survey
Email	26/27 August 2019	<ul style="list-style-type: none"> • Beeliar professors • Friends of Brixton St Wetlands • Wildflower Society of WA 	<ul style="list-style-type: none"> • Invitation to project introduction meeting
Meeting	9 September 2019	<ul style="list-style-type: none"> • City of Kalamunda community relations staff 	<ul style="list-style-type: none"> • Communications partnering discussion
Meeting	18 September 2019	<ul style="list-style-type: none"> • City of Gosnells community relations staff 	<ul style="list-style-type: none"> • Communications partnering discussion
Letter	6 November 2019	<ul style="list-style-type: none"> • Landowners adjacent to Tonkin Highway 	<ul style="list-style-type: none"> • Request to place noise monitoring devices on property
Emails and meetings	12 March – 2 April 2020	<ul style="list-style-type: none"> • Emergency Services (Police, DFES and Ambulance) 	<ul style="list-style-type: none"> • Provide project briefing • Seek input regarding any operational concerns • (DFES and Police meetings held)
Email	30 April 2020	<ul style="list-style-type: none"> • Public Transport Authority 	<ul style="list-style-type: none"> • Seek information on public transport routes to inform Urban Landscape and Design Framework and Green Infrastructure Plan
Email Website	8 May 2020	<ul style="list-style-type: none"> • All stakeholders (including email database) 	<ul style="list-style-type: none"> • Outcomes of Hale Road investigations

Letter	May 2020	<ul style="list-style-type: none"> • Hardey Road businesses and residents 	<ul style="list-style-type: none"> • Provide project update (advise of access change at Hale/ Hardey Road) • Offer to meet and discuss project impacts
Briefing	2 June 2020	<ul style="list-style-type: none"> • City of Kalamunda elected members 	<ul style="list-style-type: none"> • Project update and upcoming activities, including planned consultation on Hale Road
Email	3 June 2020	<ul style="list-style-type: none"> • Over 1200 subscribers 	<ul style="list-style-type: none"> • Project update including investigation outcomes
Newsletter	10 June 2020	<ul style="list-style-type: none"> • 7410 homes and businesses in Forrestfield and Wattle Grove 	<ul style="list-style-type: none"> • Project update including investigation outcomes
Meetings	16 June 2020 onwards	<ul style="list-style-type: none"> • Wattle Grove and Forrestfield residents on request 	<ul style="list-style-type: none"> • Project update including investigation outcomes
Emails/ Meetings	July – September 2020	<ul style="list-style-type: none"> • Woodlupine Living Stream • Friends of Woodlupine Brook • KEAC • Nature Reserves Preservation Group 	<ul style="list-style-type: none"> • Project update and seek understanding of work undertaken by local environmental groups
Emails	27 July 2020 onwards	<ul style="list-style-type: none"> • Over 1200 subscribers 	<ul style="list-style-type: none"> • Share responses to project investigation queries from residents
Meetings	Ongoing	<ul style="list-style-type: none"> • Landowners on request 	<ul style="list-style-type: none"> • Discussions around property impacts

Appendix 1 - List of Interfacing Projects

Projects that are directly interfacing and/or near by the project extents of the *Tonkin Highway Corridor Upgrade – Roe Highway to Kelvin Road* project are:

- Tonkin Gap (Main Roads),
- Tonkin Extension Stage 3 (Main Roads),
- Tonkin Highway Grade Separations – Ranford Road, Armadale Road and Forrest Road (Main Roads)
- Roe Highway and Kalamunda Road Interchange (Main Roads),
- Maddington Kenwick Strategic Employment Area – MKSEA (City of Gosnells),
- City of Gosnells Depot (City of Gosnells),
- Kalamunda Community Centre (City of Kalamunda), and
- Wattle Grove South (Crystal Brook) (City of Kalamunda).

Appendix 2 – List of Stakeholders to the project

The following key stakeholders have been identified in relation to the Project:

- Department of Agriculture, Water and Environment (DAWE),
- Department of Biodiversity, Conservation and Attractions (DBCA),
- Department of Water and Environmental Regulation (DWER),
- Department of Planning, Lands and Heritage (DPLH),
- Public Transport Authority,
- Department of Education,
- City of Kalamunda and City of Gosnells,
- Local residents,
- Local businesses (including chambers of commerce),
- Community interest groups including:
 - Beeliiar Professors,
 - Cycling groups,
 - Friends of Brixton St Wetlands,
 - Friends of Woodlupine Living Stream,
 - Hartfield Park Recreation Centre,
 - Kalamunda Environmental Advisory Committee,
 - Nature Reserves Preservation Group,
 - Veteran Car Club of WA, and
 - Wildflower Society of Western Australia.
- Freight and logistics industry,
- All road users,
- South West Aboriginal Land & Sea Council and the Whadjuk Working Party,
- Emergency Services, and
- Utility Providers.

Appendix 3 – Sustainability Dashboard for Project Development

Environment

Table 4: Environmental Impact Summary

Environmental Aspect	Total for Project
Actual clearing to date (ha)	TBC
Actual rehabilitation/revegetation to date (ha)	TBC
Total water use for project to date (kl)	TBC
Total energy use for the project to date (MJ)	TBC
Total GHGs for the project to date (t CO _{2-e})	TBC
Total imported materials used (t)	TBC
Total recycled materials used (t)	TBC

Social

Table 5: Social Impact Summary

Social Aspect	Total for Project
No. of Stakeholders engaged with during project development	TBC
No. of Legacy commitments	TBC
No. of heritage sites in project vicinity	TBC
No. of heritage sites significantly impacted	TBC
Existing number of traffic safety incidents within project boundary	TBC
Forecast number of traffic safety incidents within project boundary	TBC
% of women in project development workforce	TBC
% indigenous in project development workforce	TBC
% of people with disabilities in project development workforce	TBC
Number of hours training during project development	TBC
Number of development employees and apprentices during project development	TBC
Number of employees (FTEs) sourced from local community for project development	TBC
Safety metrics during project development i.e. ROSMA crash metric reduction target	TBC

Economic

Table 6: Economic Impact Summary

Economic Aspect	Total for Project
Project spend to date	TBC
Project spend to date by significant project activities including key contracts to deliver activities	TBC
Number of people employed by supply chain during project development	TBC
Number of suppliers engaged during project development	TBC
Number of Indigenous Enterprise during project development	TBC
Number of Disability Enterprise during project development	TBC
Buy Local Spend during project development	TBC

Appendix 4 – Glossary of Terms

Table 7: Glossary of Terms

Term	Definition
AHD	Australian Height Datum
AS 5334	Australian Standard: Climate Change Adaptation for Settlements and Infrastructure - A Risk Based Approach
ASS	Acid Sulfate Soils
ASSMP	Acid Sulfate Soil Management Plan
Credits	Each IS v2.0 credit has up to three levels of achievement and addresses a specific aspect of sustainability performance within the category.
CSES	Community and Stakeholder Engagement Strategy
EPA	Environmental Protection Authority
GHG	Greenhouse Gas
GIP	Green Infrastructure Plan
GRI	Global Reporting Initiatives
HWL	Hide Wide Load
IS	Infrastructure Sustainability
ISAP	Infrastructure Sustainability Accredited Professional
ISCA	Infrastructure Sustainability Council of Australia
IS Materiality Assessment	Process to identify the priority sustainability topics that should be included in the sustainability plan, strategy and targets
IS Rating Scheme	Infrastructure Sustainability (IS) rating scheme comprises: <ul style="list-style-type: none"> • The IS rating tools for Planning, Design and As Built and Operation • ISCA education and training programs (including the IS Accredited Professional program) • Working and Advisory Groups
IS Rating Scorecard	Infrastructure Sustainability Rating Scorecard used to summarize approach to achieving credit requirements.
IS Themes	Governance: context, leadership and management, sustainable procurement, resilience and innovation Economic: options assessment, business case and benefits Environmental: Energy and carbon, green infrastructure, environmental impacts, resource efficiency, water and ecology Social: stakeholder engagement, legacy, heritage and workforce sustainability
IS Rating Tool	The IS rating tool is the tangible part of the scheme, used to undertake assessment. It comprises: <ul style="list-style-type: none"> • The IS Technical Manual • IS rating tool scorecard (IS Scorecard)

	<ul style="list-style-type: none"> IS Materials Calculator – a calculator used to measure performance in the Materials category (Design & As-Built and Operations only)
IS v2.0 Planning Technical Manual	Technical manual that details all the requirements for ISCA credits to be achieved to obtain a Planning Rating.
LGA	Local Government Authority
MCA	Multi Criteria Analysis
MRWA	Main Roads Western Australia
PSP	Principal Shared Path
RES	Resource Efficiency Strategy
SLK	Straight Line Kilometre
SMP	Sustainability Management Plan
TEC	Threatened Ecological Community
THCU	Tonkin Highway Corridor Upgrade
ULDF	Urban Landscape Design Framework
UN SDG	United Nations Sustainability Development Goals