



Australian Government

**BUILDING OUR FUTURE**



# M1 Pacific Motorway extension to Raymond Terrace

Environmental impact statement –  
Chapter 20: Sustainability

Transport for NSW | July 2021



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## 20. Sustainability

This chapter describes the potential sustainability impacts that may be generated by the construction and operation of the project and presents the approach to the management of these impacts.

The desired performance outcomes for the project relating to sustainability, as outlined in the SEARs, are to:

- Reduce the NSW Government's operating costs and ensure the effective and efficient use of resources
- Maximise the conservation of natural resources.

**Table 20-1** outlines the SEARs that relate to sustainability and identifies where they are addressed in this EIS. The full assessment of sustainability impacts is provided in the Sustainability Working Paper (**Appendix T**).

Table 20-1 SEARs (sustainability)

Secretary's requirement	Where addressed
16. Sustainability	
1. The Proponent must assess the project against the current guidelines including targets and strategies to improve Government efficiency in use of water, energy and transport.	<p><b>Section 20.1</b> lists the relevant guidelines, strategies and policies</p> <p><b>Section 20.3</b> assesses the project against relevant guidance relating to use of water, energy and transport (such as emissions reduction)</p> <p><b>Section 20.4</b> describes management measures which focus on improving the resource use efficiency by the government on this project.</p>

### 20.1 Policy and planning setting

The sustainability assessment was prepared to assess the potential impacts of the project in accordance with the following relevant legislation, policy and guidelines:

- Legislation:
  - *Environmental Planning and Assessment Act 1979* (EP&A Act)
  - *Transport Administration Act 1988*
  - *Protection of the Environment Operations Act 1997*
  - *Waste Avoidance and Resource Recovery Act 2001*
- Plans and policies:
  - Transport Environment and Sustainability Policy Framework and Statement (Transport for NSW 2020e)
  - NSW Government Resource Efficiency Policy (GREP) (OEH 2019b)
  - Environmental Sustainability Strategy 2019-23 (Roads and Maritime Services 2019)
  - NSW Transport Future Strategy 2056 (Transport for NSW 2018a)
  - Beyond the Pavement (Transport for NSW 2020a)
  - NSW Government Procurement Policy Framework
  - The Social Procurement and Workforce Development Guide (Transport for NSW 2020f)
  - NSW Procurement Aboriginal Participation in Construction Policy (NSW Procurement 2018)
  - United Nations Sustainable Development Goals (United Nations 2015).

Specifically, the Environmental Sustainability Strategy 2019-2023 (Roads and Maritime Services 2019) has been used as the guiding framework to undertake the assessment as this was current at the time of the development of the concept design.

The Strategy identifies 10 focus areas to embed sustainability into the delivery of infrastructure and services and defines objectives and targets for sustainability in the context of Transport projects. The Strategy also defines the sustainability delivery model and targets in the context of Transport projects. It also establishes focus areas, targets and initiatives for Transport (formerly Roads and Maritime Services) projects and operation activities.

Further detail on the above legislation, policies and guidelines, and how they apply to the project, is provided in the Sustainability Working Paper (**Appendix T**).

## 20.2 Assessment methodology

The sustainability assessment for the project has considered the application of sustainability principles and the opportunities to satisfy the objective of Section 1.3(b) of the EP&A Act. The assessment also assesses whether the project achieves Transport's sustainability targets and is aligned with best practice for infrastructure projects.

The sustainability targets and initiatives for this project have been developed in response to government and Transport guidance documents (outlined in **Section 20.1**) and would be integrated into the detailed design, construction and operation of the project.

The assessment broadly involved:

- Defining the sustainability context for the project within the broader context of NSW's objective of improving transport efficiency and the relevant Transport policies and guidelines
- Reviewing the sustainability focus areas, associated objectives and identifying how these focus areas apply to the project
- Identifying requirements for managing sustainability during detailed design, construction and operation.

The environmental management measures detailed in **Section 20.4** respond to the sustainability focus areas identified in the Environmental Sustainability Strategy 2019-2023 (Roads and Maritime Services 2019).

## 20.3 Assessment of the project

Sustainability, or sustainable development, can be defined in different ways depending on the application and context in which it is being applied. Sustainable development is often defined as 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased' (World Commission on Environment and Development 1987).

As described in **Section 20.1**, the project was assessed against the Environmental Sustainability Strategy 2019-23 (Roads and Maritime Services 2019) (the strategy), which was a key guidance document for the project. **Table 20-2** details the project response to the objectives of the sustainability focus areas and objectives in the strategy that relate to the project.

Table 20-2 Sustainability focus areas that relate to the project

Sustainability focus area	Objective	Relevant key initiatives in strategy	Project response
Energy and carbon management	Minimise energy use and reduce carbon emissions without compromising the delivery of services to our customers.	<ul style="list-style-type: none"> <li>Ensuring the road network effectively integrates with rail, air and maritime transport networks to efficiently move freight and increase access for B-Double and B-Triple trucks on the road network where there is a positive impact on fuel consumption.</li> </ul>	<p>The provision of a motorway standard road that alleviates congestion and allows for free-flowing traffic conditions is in line with Transport’s objective to minimise energy use and reduce carbon emissions without compromising services for road users. The project would result in improvements to network-wide speeds, travel times and intersection level of service and provide a lower gradient and comparatively high-speed route for through traffic. The operation of the project would result in fewer emissions produced per kilometre travelled when compared with the existing road network in the same year.</p>
		<ul style="list-style-type: none"> <li>Setting project specific energy efficiency and carbon emission improvement targets for State significant infrastructure projects covering both direct and indirect emission sources</li> <li>Developing a strategy by 2020 to transition all Roads and Maritime street lights and road signs to LED light sources</li> <li>Using solar panels to power roadside signage, alert and messaging systems when cost effective and fit for purpose</li> <li>Promoting the use of innovation and technology to investigate and manage road network impacts such as hazardous road conditions, severe weather impacts, bushfires, travel incidents and congestion.</li> </ul>	<p>Initiatives in regard to energy efficiency and sourcing of low carbon materials for construction will be identified by construction contractors and will form part of the evaluation process by Transport in selection of the preferred contractor.</p> <p>The operation of the project would result in fewer emissions produced per kilometre travelled when compared with the existing road network in the same year. In operation the estimated annual CO<sub>2</sub>e emission contribution is 23kt.</p> <p>The assessment in <b>Chapter 21</b> (climate change risk) has estimated that construction of the project would generate 243kt of carbon dioxide equivalent (CO<sub>2</sub>e).</p> <p>Consideration would be given throughout the detailed design, construction and operation of the project include project-specific targets for greenhouse gases, exploration of low-carbon energy sources and energy efficient technology.</p>
Climate change resilience	Design and construct transport infrastructure to be resilient or adaptable to climate change impacts.	<ul style="list-style-type: none"> <li>Reviewing climate change impacts and risks during the planning phase of potentially affected projects with a level of detail commensurate to the size of the project and the potential risk</li> <li>Designing infrastructure for the predicted future climate or designing for cost-effective adaptation in the future</li> </ul>	<p>The key climate change resilience targets in the strategy relate to assessing climate change risks for projects and addressing any risks identified as high or above during project planning.</p> <p>A climate change risk assessment was undertaken for the project (refer to <b>Chapter 21</b> (climate change risk))</p> <p>When considering the residual risk post adoption of management measures, some risks were identified are high. These risks related to increased extent and depth of flooding of the project and inadequate drainage as a result of an increase</p>

Sustainability focus area	Objective	Relevant key initiatives in strategy	Project response
		<ul style="list-style-type: none"> <li>Minimising the carbon impacts associated with vegetation clearance by reducing project footprints where possible.</li> </ul>	<p>in the frequency and intensity of severe rainfall events coupled with sea level rise. In line with the strategy, these risks are addressed below.</p> <p>Broadly, the project achieves a minimum design standard flood immunity parameter of 5% AEP events. Furthermore, the vast majority of the project achieves flood immunity up to the 1% AEP event with only a few short sections not meeting this immunity. Adjusting the design to accommodate flooding as a result of potential climate change is not considered desirable as raising the road level would exacerbate the assessed flooding impacts from the project. Raising the proposed road levels would also result in an increased project footprint, increased resources required for construction and operation, and increased property and environmental impacts.</p> <p>Additionally, the existing road network connecting to the project generally has a lower flood immunity. In a climate change flood scenario, the vast majority of the existing road network would be flooded and inaccessible in the construction footprint.</p>
		<ul style="list-style-type: none"> <li>Ensuring our specifications for delivery, maintenance and operation of infrastructure consider suitable climate and weather-related constraints which include current best practice climate change predictions.</li> </ul>	<p>Initiatives in regard to resilient materials for construction will be identified by construction contractors as part of the Sustainability Management Plan.</p>
		<ul style="list-style-type: none"> <li>Maintaining our capacity to respond to significant events on our roads or waterways through emergency management plans to ensure our agency responds appropriately when required.</li> </ul>	<p>Transport has and will continue to liaise with key emergency management stakeholders to ensure features are included in the project design to enable continued management during significant events.</p>
Air quality	Minimise the air quality impacts of road projects and support initiatives that aim to reduce transport related air emissions.	<ul style="list-style-type: none"> <li>Monitoring air emissions across our projects and operations</li> <li>Actively monitoring and minimising non-road diesel emissions from our activities</li> <li>To optimise the design and management of the road network to smooth traffic flows and manage congestion with the aim of</li> </ul>	<p>The air quality targets in the strategy relate to identifying and applying best practice air quality controls and initiatives during construction and operation of projects. The specific initiatives that are relevant to the project that will help achieve these targets are discussed below.</p> <p>Energy efficient work practices and other measures to minimise non-road related diesel use for plant and equipment during construction would be specified by potential construction contractors during the tendering phase. Transport will consider these measures in evaluating and appointing a preferred contractor.</p>

Sustainability focus area	Objective	Relevant key initiatives in strategy	Project response
		<p>reducing travel times for vehicles using the network</p> <ul style="list-style-type: none"> <li>Implementing Transport for NSW's NSW Freight and Ports Strategy Plan 2018-2023 to improve freight movement productivity and reduce truck travel times.</li> </ul>	<p>Additionally, air quality management measures will apply to the construction phase (refer to <b>Chapter 18</b> (air quality)).</p> <p>In operation the project contributes to achieving Transport's identified initiatives by providing for more reliable traffic flows and reduced congestion and travel times for vehicles including freight movements. This network efficiency results in reduced vehicle emissions per vehicle kilometre travelled.</p>
Resource use and waste management	Minimise the use of non-renewable resources and minimise the quantity of waste disposed to landfill.	<ul style="list-style-type: none"> <li>Monitoring and reporting on significant waste streams</li> <li>Ensuring that infrastructure design and construction planning considers how to minimise the generation of excess spoil</li> <li>Identifying where there is potential to recover and reuse materials on site</li> <li>Substituting non-renewable materials with recycled or reused materials where they are fit for purpose, cost effective and affordable</li> <li>Managing waste to minimise transport related risks and impacts by using local disposal facilities where feasible and appropriate</li> <li>Working with our supply chain to assess the feasibility of reusing key wastes, such as glass, in road construction to reduce our consumption of virgin materials.</li> </ul>	<p>The strategy recognises a key way to achieve the resource use and waste management objective is through the implementation of the waste management hierarchy. The waste management hierarchy will apply to the project in both the construction and operational phases. The strategy incorporates targets for 100% beneficial reuse of VENM, clean concrete and clean recycled asphalt. As the project has a large deficit of material all available reuse options will be implemented during construction.</p> <p>A Waste Management Plan incorporating many of the strategy's key initiatives in relation to resource use and waste management will be implemented during construction (refer to <b>Chapter 19</b> (waste)).</p>
		<ul style="list-style-type: none"> <li>Monitoring and reporting on potable and non-potable water use in areas where water scarcity occurs</li> <li>Maximising the use of non-potable water in preference to potable water where feasible.</li> </ul>	<p>A water reuse strategy for both construction and operational phases of the project would be prepared to reduce reliance on potable water. This strategy would outline alternative water supply options to potable water, with the aim of reusing water collected on-site in temporary construction sediment basins where feasible.</p>



Sustainability focus area	Objective	Relevant key initiatives in strategy	Project response
Pollution control	Minimise noise, water and land pollution from road and maritime construction, operation and maintenance activities.	<ul style="list-style-type: none"> <li>• Implementing land and contamination management practices on Roads and Maritime landholdings that avoid creating or exacerbating long term legacy issues</li> <li>• Managing pre-existing contamination to mitigate land and water pollution and to meet legal requirements.</li> </ul>	<p>Based on the desktop assessment and site inspections, five high risk areas of contamination and six medium risk areas are located within the construction footprint. A number of low risk areas were also identified outside of the construction footprint. The project would implement management measures to mitigate potential impacts of the project on land and soil contamination, including the implementation of a Contaminated Land Management Plan and the development of a Remediation Action Plan for contamination identified at the former mineral sands processing facility (refer to <b>Chapter 16</b> (soils and contamination)).</p> <p>During operation, the main risk from the operational use of the motorway is from large scale chemical or hydrocarbons spills from freight transport. These would be minimised through good design and subsequently managed by a combination of authorities (Transport, Police and other emergency services) as individual scenarios require.</p>
		<ul style="list-style-type: none"> <li>• Actively playing a role in reducing the potential impact of pollution caused by users of the road network and waterways through: <ul style="list-style-type: none"> <li>– Monitoring pollution from vehicles that use roads and from vessels using waterways</li> <li>– Managing impacts from accidents</li> <li>– Managing spills into our waterways.</li> </ul> </li> </ul>	<p>The project design includes construction and operational water quality strategies to manage water quality impacts from the project, including the use of construction temporary sediment basins and permanent operational water quality basins, other physical controls and the implementation of management measures during construction and operation. Basins and grassed swales in the Tomago Sandbeds Catchment Area will be lined to avoid impact to the underlying groundwater resources. Spill containment is built into basins throughout the project to minimise the impact of accidental spills on receiving waterways.</p>
		<ul style="list-style-type: none"> <li>• Using the Roads and Maritime Noise Criteria Guideline across our activities</li> <li>• Managing our noise impacts, where practical and reasonable, using the following prioritised approach: <ul style="list-style-type: none"> <li>– Eliminating noise sources</li> <li>– Using materials, construction methods and equipment specifications that reduce noise generation</li> <li>– Using engineering noise control methods such as enclosures, acoustic</li> </ul> </li> </ul>	<p>The project design and noise assessment has considered the requirements of the Noise Criteria Guideline (Roads and Maritime Services 2015c). The inclusion of potential noise management measures in the project design, such as quieter pavements, noise barriers and/or at-property noise mitigation treatment, aid in reducing noise levels at affected receivers during operation of the project.</p> <p>The project would seek to mitigate and manage noise pollution impacts during construction through the preparation and adherence to a Construction Noise and Vibration Management Plan (refer to <b>Chapter 8</b> (noise and vibration)). The management plan would include consideration of different plant and equipment, scheduling of noise intensive equipment during less sensitive periods (i.e. standard hours), noise and vibration monitoring and building surveys.</p>

Sustainability focus area	Objective	Relevant key initiatives in strategy	Project response
		<p>sheds and noise walls to reduce construction and operational noise at or close to the source</p> <ul style="list-style-type: none"> <li>– Implementing noise management measures where impacts are above our guideline levels.</li> </ul>	
Biodiversity	Improve outcomes for biodiversity by avoiding, mitigating or offsetting the potential impacts of road and maritime projects on plants, animals and their environments.	<ul style="list-style-type: none"> <li>• Avoiding impacts on biodiversity through route selection, planning and design processes</li> <li>• Minimising impacts by applying best practice approaches to unavoidable habitat loss (e.g. following pre-clearing processes, establishing exclusion zones and careful management of weeds and pathogens)</li> <li>• Mitigating impacts on biodiversity by providing fauna connectivity where appropriate, and supplementing habitat where needed (e.g. targeting vegetation rehabilitation, installing nest boxes and reusing woody debris and bush rocks).</li> <li>• All projects identified as State significant infrastructure or requiring a review of environmental factors must review the need for biodiversity offsets in accordance with Roads and Maritime Biodiversity Offset Policy.</li> <li>• Avoiding the spread of weeds, pests and diseases outside of our sites through appropriate management of mulch and</li> </ul>	<p>Learnings from projects previously undertaken by Transport help inform tender documentation and project specifications that will be relevant to this project.</p> <p>The project has sought to achieve the objective through consideration of biodiversity values during the extensive options development and project design stages, as follows:</p> <ul style="list-style-type: none"> <li>• Consolidating the project with other development corridors to reduce the area of vegetation disturbance and fragmentation</li> <li>• Aligning the construction footprint between the Black Hill and Tarro interchange to align with the Hunter Water Corporation trunk main and the New England Highway to avoid many direct impacts to Hexham Swamp</li> <li>• Design of a viaduct crossing of the Hunter River and adjacent floodplain, in contrast to a built formation option, to avoid a lengthy direct impact to floodplain wetlands and associated biodiversity</li> <li>• Moving the proposed viaduct (B05) crossing the Hunter River further upstream of the existing Hexham Bridge to reduce impacts to coastal wetlands and threatened ecological communities</li> <li>• Moving the main alignment north between Black Hill and the Hunter River – to be closer to the New England Highway</li> <li>• Challenging the scope and functionality of project elements to avoid impacts on remnant vegetation, threatened species and fauna connectivity</li> <li>• Positioning ancillary facilities, where possible, within previously cleared and disturbed land</li> <li>• Offsetting unavoidable impacts in accordance with NSW Biodiversity Offset Policy for Major Projects.</li> </ul> <p>Biodiversity management measures have been developed and proposed for the project which together work to achieve the biodiversity objectives. Refer to</p>

Sustainability focus area	Objective	Relevant key initiatives in strategy	Project response
		vegetation wastes generated, reused or removed from our sites.	<b>Chapter 9</b> (biodiversity) for details on the project's impacts to biodiversity within the construction footprint and the management measures proposed.
Heritage – Aboriginal and non-Aboriginal	Manage and conserve cultural heritage according to its heritage significance and contribute to the awareness of the past.	<ul style="list-style-type: none"> <li>Avoiding or minimising impacts on heritage assets where feasible through route selection or by innovative designs</li> <li>Preserving and developing our heritage knowledge and sharing this knowledge with the community and interested stakeholders.</li> </ul>	<p>The project has achieved the key heritage target in the strategy by identifying and assessing heritage assets early in the project planning stage to allow appropriate consideration of potential impacts and solutions.</p> <p><b>Non-Aboriginal heritage</b></p> <p>The non-Aboriginal heritage assessment identified a major impact to the Glenrowan Homestead and a minor impact to the Hexham Shipbuilding Yards. Management measures, including barrier fencing, archival recording, dilapidation surveys and vibration monitoring, have been proposed for the project to avoid, minimise to the greatest extent possible and manage the impacts to non-Aboriginal heritage items. Further information is provided in <b>Chapter 17</b> (non-Aboriginal heritage).</p> <p><b>Aboriginal heritage</b></p> <p>Consultation with Aboriginal stakeholders has been carried out throughout the project development in accordance with Transport requirements and has involved meetings with affected Aboriginal stakeholder groups and site surveys and test excavations attended by registered aboriginal parties. The Aboriginal cultural heritage assessment identified impacts to a number of Aboriginal cultural heritage items (refer to <b>Chapter 12</b> (Aboriginal cultural heritage)). Where complete avoidance of archaeological sites was not possible, management measures for impacted areas have been developed.</p>
Liveable communities	Provide high quality urban design outcomes that contribute to the sustainability and liveability of communities in NSW.	<p>Applying the Beyond the Pavement policy to all Roads and Maritime Services infrastructure projects that have an appreciable impact on the built and natural environment and achieve the following outcomes:</p> <ul style="list-style-type: none"> <li>Road and Maritime Services transport infrastructure fits sensitively with the built, natural, community and cultural environments in which it is situated in both urban and rural locations</li> <li>infrastructure planning and design contributes to the accessibility and</li> </ul>	<p>The four identified objectives of Transport's Beyond the Pavement policy are discussed below.</p> <p><b>Projects should fit sensitively into the built, natural, and cultural environment in both urban and rural locations</b></p> <p>Throughout the project development process there has been extensive consideration of how the project is integrated into the landscape and communities through which it passes. The project has been aligned with existing roads and infrastructure as far as possible to fit within the built environment and minimise impacts to the natural environment. A key outcome of the route selection process was an alignment that minimises impacts on the natural environment including wetland communities on the floodplain and habitat for koalas. The potential for impacts on cultural heritage has been considered through extensive consultation</p>

Sustainability focus area	Objective	Relevant key initiatives in strategy	Project response
		<p>connectivity of communities and a general permeability of movement through areas by all modes of movement, including walking and cycling and public transport.</p>	<p>and collaboration with local Aboriginal groups throughout the route alignment and environmental assessment process.</p> <p><b>Projects should contribute to the accessibility and connectivity of communities and a general permeability of movement through areas by all modes of movement</b></p> <p>The project provides for improved accessibility and connectivity within its regional setting. The four interchanges provide access for the local community to the motorway which provides for improved travel times and conditions when moving between local areas and connecting to the wider road network for regional and interstate travel.</p> <p>With regard to provision for all modes of movement, the project incorporates wide shoulders which provides for cyclist use. While there is generally no pedestrian specific features on the main motorway alignment, the project does incorporate some design features to accommodate pedestrian movements at certain locations. The bridge at Masonite Road (B10) and associated alignment changes incorporates a pedestrian pathway and the signalised access to the Hunter Region Botanic Gardens allows for improved pedestrian safety at this location.</p> <p><b>The design and management of projects should contribute to the overall design quality of the public domain for the community, including transport users</b></p> <p>The project has sought to deliver high quality urban design outcomes and has been developed in recognition of the existing natural, built and community values. The urban design for the project has been developed based on the urban design principles identified in Beyond the Pavement (Transport for NSW, 2020a).</p> <p><b>Projects should help revitalise areas and contribute to the local and broader economy</b></p> <p>A key project objective is to improve road network efficiency for freight and commuters on the National Land Transport Network (NLTN) at the key strategic junction of the M1 Pacific Motorway, the New England Highway and Pacific Highway. The existing NLTN linking the M1 Pacific Motorway at Black Hill with the Pacific Highway at Raymond Terrace is in one of the most highly trafficked areas of the road network in the region and is more heavily congested than adjacent high standard sections of the M1 Pacific Motorway and Pacific Highway. The project would provide for a free flowing dual carriageway route along this section of the NLTN providing benefits for the local, regional and national economy.</p>

Sustainability focus area	Objective	Relevant key initiatives in strategy	Project response
Sustainable Procurement	Procure goods, services, materials and works for infrastructure development and maintenance projects that over their lifecycle deliver value for money and contribute to the environmental, social and economic wellbeing of the community.	<ul style="list-style-type: none"> <li>• Ensure assessment criteria, and associated weightings, for tenders include relevant environmental and social responsibility outcomes</li> <li>• Including sustainability performance criteria in our contracts to increase awareness in our supply chain</li> <li>• Implementing the Aboriginal Participation in Construction Policy</li> <li>• Where possible, procuring from small and medium-sized enterprises Aboriginal businesses and Australian disability enterprises by including such requirements in procurement strategies and policies.</li> </ul>	<p>The project would also provide for future demand generated from substantial local land releases at Black Hill, Tomago and Heatherbrae.</p> <p>The sustainable procurement objective would be achieved for the project through inclusion of non-price selection criteria in the construction tender process to embed environmentally and socially responsible outcomes. The project would also procure locally produced goods and services where feasible and cost effective.</p> <p>Transport is preparing an Aboriginal Participation Strategy for the construction phase of the project.</p>
Corporate Sustainability	Communicate Roads and Maritime's sustainability objectives to employees, contractors and other key stakeholders, and foster a culture which encourages innovative thinking to address sustainability challenges.	<ul style="list-style-type: none"> <li>• Ensuring offices purchased or leased are rated against the NABERS system prior to tenure and meet the NSW Government Resource Efficiency Policy requirements</li> <li>• Publishing exclusively electronic media versions of external and internal publications rather than printed copies where possible.</li> </ul>	<p>Sustainability has been considered at all stages of the project to date and will continue to be considered and assessed throughout the detailed design, construction and operation phases.</p> <p>Transport's sustainability objectives and requirements will form part of the tender documentation for the construction phase of the project and form part of the selection criteria in the evaluation of a preferred contractor.</p>

## 20.4 Environmental management measures

The environmental management measures that will be implemented for sustainability, along with the responsibility and timing for those measures, are presented in **Table 20-3**.

Table 20-3 Environmental management measures (sustainability)

Impact	Reference	Environmental management measure	Responsibility	Timing
Project sustainability outcomes	SU1	<p>A Sustainability Management Plan (or similar framework) for the project will be developed and implemented during detailed design and construction, detailing measures to meet the project's sustainability objectives and targets. The Sustainability Management Plan will:</p> <ul style="list-style-type: none"> <li>• Demonstrate leadership and commitments to sustainability</li> <li>• Adopt relevant sustainability performance targets in accordance with the Transport Sustainability Strategy</li> <li>• Identify sustainable procurement requirements</li> <li>• Document the process for the identification, assessment and implementation of sustainability initiatives and opportunities</li> <li>• Document the process to be used to monitor and review of sustainability performance against achieving the project's sustainability targets</li> <li>• Outline the documentation and reporting requirements for sustainability on the project.</li> </ul>	Transport/ Contractor	Prior to construction/ construction
Other relevant management measures				
Flood risk	CC01	Hydrological and hydraulic assessments would be carried out for any design changes during detailed design and would consider the climate change related flood risks to the project and flood impacts from the project.	Contractor	Detailed design
Adverse air quality during construction	AQ01	<p>Preparation and implementation of an Air Quality Management Plan (AQMP) to minimise risks to air quality. The AQMP will identify:</p> <ul style="list-style-type: none"> <li>• Potential sources of air pollution (including odours and dust) during construction</li> <li>• Air quality management objectives consistent with relevant published guidelines</li> <li>• Identification of all dust and odour sensitive receivers</li> <li>• Measures to manage dust</li> <li>• Requirements to separate temporary project specific asphalt batching plants, if feasible, from the nearest residences by at least 300m</li> <li>• Community notification and complaint handling procedures.</li> </ul>	Contractor	Detailed design. Prior to construction

Impact	Reference	Environmental management measure	Responsibility	Timing
Avoid, minimise and sustainably manage waste	WM01	<p>A Waste Management Plan (WMP) will be prepared and implemented to manage and minimise the generation of waste and encourage reuse of materials. It will include, but not be limited to:</p> <ul style="list-style-type: none"> <li>• Identification of the waste types and volumes that are likely to be generated by the project</li> <li>• Adherence to the waste minimisation hierarchy principles of avoid/ reduce/ reuse/ recycle/ dispose</li> <li>• Waste management procedures to lawfully manage the handling and disposal of waste</li> <li>• Identification of reporting requirements and procedures for tracking of waste types and quantities</li> <li>• A resource management strategy detailing the process to identify reuse options for surplus materials</li> <li>• Site-specific waste management plans for concrete and asphalt batching plants</li> <li>• Spoil management procedures outlining reuse and disposal</li> <li>• Identification of areas for management of materials.</li> </ul>	Contractor	Detailed design/ prior to construction/ construction
Soil and groundwater contamination	SC01	<p>A Contaminated Land Management Plan (CLMP) and procedures prepared in accordance with TfNSW's Guideline for the Management of Contamination (Roads and Maritime Services 2013c) will be developed and will include:</p> <ul style="list-style-type: none"> <li>• Control measures to manage identified areas of potential contamination risk (AOPCRs), where the risk has been assessed as being medium or high and is confirmed within the construction footprint</li> <li>• Procedures for managing unexpected contamination (including buried waste, illegal dumping and asbestos)</li> <li>• Requirements for the disposal of contaminated waste in accordance with the <i>Protection of the Environment Operations Act 1997</i> and the Protection of the Environment Operations (Waste) Regulation 2014.</li> </ul>	Contractor	Prior to construction/ construction