

7.0 Environmental assessment

7.13 Sustainability

This section presents an assessment of the proposed modification against the principles of sustainability and demonstrates how sustainability was integrated into its design.

7.13.1 Introduction

Table 7-100 outlines the SEARs that relate to sustainability and identifies where they are addressed in this modification report.

Table 7-100 SEARs – Sustainability

Desired Performance Outcome	SEAR	Where addressed within the Modification Report
Other Issues [No performance outcome stated]	<p>An assessment of the following issues must be undertaken in accordance with the commitments in Attachment 2 of the M7 Motorway (SSI 663) – Project Modification letter submitted 9 May 2022 (via Major Projects Portal):</p> <ul style="list-style-type: none"> Sustainability <p><i>Extract from Attachment 2 of the M7 Motorway (SSI 663) – Project Modification letter submitted 9 May 2022:</i></p> <ul style="list-style-type: none"> Assess the sustainability of the project in accordance with the Infrastructure Sustainability Council (ISC) Infrastructure Sustainability Rating Tool and recommend an appropriate target rating for the project. Consider and assess the project against current guidelines including targets and strategies to improve Government efficiency in use of water, energy and transport. <p>Proposed Guidelines</p> <ul style="list-style-type: none"> Infrastructure Sustainability Rating Tool Scorecard relating to energy and carbon for large infrastructure projects, ISCA IS Technical Manual (ISCA 2018) 	<p>Section 7.13.4 for discussion of current policy and guidelines</p> <p>Section 7.13.5 for the establishment of targets and objectives</p>

7.13.2 Method of assessment

Overview

The following steps were undertaken to ensure that sustainability is considered and implemented throughout the design and delivery of the proposed modification:

- Review and assessment of the proposed modification against current guidelines including targets and strategies to improve Government efficiency in use of water, energy and transport
- Establishment of sustainability objectives and targets for the proposed modification with regards to the *Infrastructure Sustainability Rating Tool* (Infrastructure Sustainability Council of Australia - ISCA, 2018)

- Identification of appropriate management measures (i.e. implement a sustainability management plan to confirm the sustainability strategy that would be used for the proposed modification, and identify measures and activities to ensure that sustainability is embedded throughout the remainder of the life cycle of the proposed modification).

Infrastructure Sustainability rating tool

The Infrastructure Sustainability (IS) rating tool version 1.2 developed by ISC is a comprehensive process for evaluating sustainability across the design, construction and operation of infrastructure. The IS rating tool considers project elements across 15 categories as listed in Table 7-101. All categories are addressed within this assessment and their respective sections throughout the modification report.

Table 7-101 Categories considered in the IS rating

Category	Comment / relevant technical report reference	Relevant assessment chapter
Management systems to maximise delivery of sustainability solutions	To be developed during detailed design stage, construction planning and construction of the proposed modification	<ul style="list-style-type: none"> • All sections
Procurement and purchasing of sustainable materials	To be considered in future design stages of the proposed modification	<ul style="list-style-type: none"> • Sections 7.13 (Sustainability) • Section 7.15 (Greenhouse gas assessment)
Climate change adaption	Appendix N (Climate change risk and greenhouse gas assessment)	<ul style="list-style-type: none"> • Section 7.13 (Sustainability) • Section 7.14 (Climate change)
Energy and carbon usage and output	Appendix N (Climate change risk and greenhouse gas assessment)	<ul style="list-style-type: none"> • Section 7.14 (Climate change) • Section 7.15 (Greenhouse gas assessment)
Water	Appendix G (Surface water and flooding assessment)	<ul style="list-style-type: none"> • Section 7.5 (Surface water and groundwater)
Materials used	To be considered in future design stages of the proposed modification	<ul style="list-style-type: none"> • Section 7.15 (Greenhouse gas assessment)
Discharges to air, land and water	Appendix F (Air quality impact assessment) and Appendix G (Surface water and flooding assessment)	<ul style="list-style-type: none"> • Section 7.3 (Air quality) • Section 7.4 (Hydrology and flooding) • Section 7.5 (Surface water and groundwater) • Section 7.9 (Land use and property) • Section 7.10 (landscape character and visual amenity) • Section 7.11 (Soils and contamination) • Section 7.14 (Climate change)
Land	Appendix K (Urban Design, Landscape Character and Visual Impact Assessment Report) Appendix L (Contamination assessment report)	<ul style="list-style-type: none"> • Sections 7.9 (Land use and property) • Section 7.10 (Landscape character and visual amenity)
Waste	-	<ul style="list-style-type: none"> • Section 7.16 (Waste)

Category	Comment / relevant technical report reference	Relevant assessment chapter
Ecology	Appendix H (Biodiversity development assessment report)	<ul style="list-style-type: none"> Section 7.6 (Biodiversity)
Community health, wellbeing and safety	Appendix M (Social impact assessment report)	<ul style="list-style-type: none"> Section 7.12 (Social)
Heritage	Appendix I (Aboriginal Cultural Heritage assessment report) Appendix J (Non-Aboriginal heritage assessment report)	<ul style="list-style-type: none"> Sections 7.7 (Aboriginal heritage) Section 7.8 (Non-Aboriginal heritage)
Stakeholder participation	-	<ul style="list-style-type: none"> Chapter 6 (Consultation)
Urban and landscape design	Appendix K (Urban Design, Landscape Character and Visual Impact Assessment Report)	<ul style="list-style-type: none"> Section 7.10 (Landscape character and visual amenity)
Innovation	Will be considered in future design stages of the proposed modification	

The proposed modification would seek to achieve a minimum 'Excellent' IS rating for both 'Design' and 'As Built' ratings under Version 1.2 of the IS rating tool ensuring that sustainability is fully integrated into the proposed modification delivery. Requirements of the IS rating tool would be considered during detailed design for the proposed modification.

7.13.3 Study area

The sustainability assessment did not consider a physical study area, but wholistically assessed the relevant proposed modification aspects from design through to operation.

7.13.4 Current policy, goals and guidelines

This section outlines the relevant aims and objectives of the key policies, goals and guidelines that have directed the consideration and integration of sustainability into the design and assessment of the proposed modification. Table 7-102 outlines how the relevant policies, goals and guidelines have guided the sustainable development of the proposed modification.

Table 7-102 Relevant policy, goals and guidelines

Policy/Goals/Guidelines	Summary
<i>Sustainable Development Goals</i> (United Nations, 2015)	<p>17 Sustainable Development Goals were agreed by world leaders and the United Nations in 2016. The goals address social, environmental and economic issues. The proposed modification would not conflict with any of the goals and would contribute directly to three goals:</p> <ul style="list-style-type: none"> <i>Goal 8 Decent work and economic growth:</i> the goal focuses on sustaining economic growth that allows people to have quality jobs while not adversely harming the environment. The proposed modification is estimated to create about 2,400 jobs during construction and would improve necessary transport links in Western Sydney <i>Goal 9 Industry, innovation and infrastructure:</i> the goal is to develop quality, reliable, sustainable and resilient infrastructure. The proposed modification is a state significant infrastructure project which would support and enhance transport connectivity <i>Goal 11 Sustainable cities and communities:</i> the goal identifies congestion and declining infrastructure as common urban challenges. The proposed modification would alleviate congestion and would support the projected population growth.

Policy/Goals/ Guidelines	Summary
<p><i>NSW Waste and Sustainable Materials Strategy 2041. Stage 1: 2021–2027</i> (DPIE, 2021c)</p>	<p>This strategy focuses on the environmental benefits and economic opportunities of how waste is managed. The strategy sets out the following three focus areas:</p> <ul style="list-style-type: none"> • Meeting our future infrastructure and service needs • Reducing carbon emissions through better waste and materials management • Building on our work to protect the environment and human health from waste pollution. <p>Potential waste impacts from the proposed modification, as well as recommended management strategies are discussed in Section 7.16 (Waste). Reducing carbon emissions through material procurement is discussed in Section 7.15 (Greenhouse gas).</p>
<p><i>Transport Environment and Sustainability Policy</i> (Transport for NSW, 2020d)</p>	<p>The <i>Transport Environment and Sustainability Policy</i> gives a collective and coordinated approach to deliver the NSW Government's environmental and sustainability agenda across the transport network. It is based around nine environment and sustainability themes which have been considered in various sections of this modification report as noted below:</p> <ul style="list-style-type: none"> • Leadership (Chapter 3.0 (Need for the modification and strategic context)) • Environmental protection (see Chapter 9.0 (Synthesis of the modification report and conclusion)) • Energy and carbon (see Section 7.14 (Climate change)) • Resilience (see Section 7.14 (Climate change)) • Sustainable procurement (see Section 7.15 (Greenhouse gas)) • Whole of life (this section) • Social (see Section 7.12 (Socio-economic)) • Awareness (see mitigation measures in Appendix B (Management and mitigation measures)) • Communication (see Chapter 6.0 (Consultation)).
<p><i>Transport Sustainability Plan</i> (Transport, 2020e)</p>	<p>The plan aligns with the Transport Environment and Sustainability Policy and outlines eight specific focus areas for integrating sustainability into Transport projects and services. The themes of the strategy have been addressed in various sections of this modification report as noted below:</p> <ul style="list-style-type: none"> • Respond to climate change (see Section 7.14 (Climate change)) • Protect and enhance biodiversity (see Section 7.6 (Biodiversity)) • Improve environmental outcomes (Chapter 9.0 (Synthesis of the modification report and conclusion)) • Procure responsibility (see Section 7.15 (Greenhouse gas)) • Partner with communities (see Chapter 6.0 (Consultation)) • Respect culture and heritage (Section 7.7 (Aboriginal heritage) and Section 7.8 (Non-Aboriginal heritage)) • Align spend and impact (this Modification Report) • Empower customers to make sustainable choices (not applicable to the proposed modification).

Policy/Goals/ Guidelines	Summary
<p><i>Sustainable Design Guidelines v4.0</i> (Transport for NSW, 2017)</p>	<p>The guidelines aim to embed seven key sustainability initiatives into the planning and design, construction and operational phases of infrastructural projects. The themes of these initiatives have been addressed in various sections of Chapter 7 (Environmental assessment) of this modification report as noted below:</p> <ul style="list-style-type: none"> • Energy and greenhouse gases (see Section 7.15 (Greenhouse gas)) • Climate resilience (see Section 7.14 (Climate change)) • Materials and waste (see Section 7.16 (Waste)) • Water (see Section 7.5 (Surface water and groundwater) and Section 7.15 (Waste)) • Pollution control (see Section 7.3 (Air quality)) • Biodiversity (see Section 7.6 (Biodiversity)) • Community benefit (see Section 7.12 (Social)).
<p><i>Future Transport Strategy 2056</i> (NSW Government, 2018a)</p>	<p>The Future Transport Strategy 2056 is a 40-year vision to use transport to contribute to long-term economic, social and environmental outcomes and to the NSW Government's aspirational target to achieve net-zero emissions by 2050. The sixth outcome of the strategy's vision includes a series of sustainability objectives, including achieving an affordable network that is financially sustainable and responsive to change. Refer also to Section 3 (Need for the modification and strategic context) of this modification report for further information.</p>
<p><i>A Metropolis of Three Cities – the Greater Sydney Region Plan and Western City District Plan</i> (Greater Sydney Commission, 2018a)</p>	<p>The plan serves as the vision for Sydney where the three cities (Western Parkland, Central River and Eastern Harbour) serve to allow residents to live within 30 minutes of their jobs, education, health facilities and services. This vision aims to utilise land use and transport patterns to boost Sydney's liveability, productivity and sustainability. The plan includes three directions for sustainability, which are to create:</p> <ul style="list-style-type: none"> • A city in its landscape by valuing green spaces and landscapes (see Appendix K (Urban Design and Landscape character and visual impact assessment) and Section 7.12 (Social)) • An efficient city by using resources wisely (see this section (Sustainability) and Section 7.15 (Waste)) • A resilient city by adapting to a changing world (see Section 7.14 (Climate change)). <p>Refer also to Section 3 (Need for the modification and strategic context) of this modification report for further information.</p>
<p><i>NSW Freight and Ports Plan 2018-2023</i> (Transport, 2018b)</p>	<p>The strategy provides a 20-year road map that will ensure freight is at the forefront of NSW's economy. One of the strategic action plans is on network sustainability and offers four actions which detail the need for a sustainable freight network that balances efficient freight movements with community expectations on safety, good neighbourhood amenity and positive environmental outcomes. The four actions are to embed freight requirements in planning schemes, manage congestion, noise and emission impacts of freight transport, prioritise safety of freight transport and support the growth of the transport and logistics workforce. Chapter 3 (Need for the modification and strategic context) outlines the benefits of the proposed modification in improving efficiency of the freight network.</p>

Policy/Goals/ Guidelines	Summary
<i>NSW Climate Change Policy Framework</i> (NSW Office of Environment and Heritage, 2016)	The framework aims to maximise the economic, social and environmental wellbeing of NSW in the context of a changing climate. The framework outlines policy directions for implementing the NSW government's long-term objectives of achieving net zero emissions by 2050 and improving the resilience of NSW to a changing climate. The objectives of the framework were taken into consideration when developing the sustainability objectives and target themes for the proposed modification (see Table 7-103).
<i>NSW Government Resource Efficiency Policy</i> (NSW Office of Environment and Heritage, 2019)	The Policy aims to drive resource efficiency, with a focus on energy, water and waste, and a reduction in harmful air emissions. The themes of these initiatives have been addressed in various sections of Chapter 7 (Environmental assessment) of this modification report as noted below: <ul style="list-style-type: none"> • Energy (see Table 7-103) • Waste (see Section 7.15 (Waste)) • Air quality (see Section 7.3 (Air quality)) • Water (see Section 7.5 (Surface water and groundwater) and Section 7.15 (Waste)).
<i>Aboriginal Procurement Policy (APP)</i> (NSW Government, 2021)	The Aboriginal Procurement Policy and the Aboriginal Participation in Construction Policy (APIC) merged into a new policy, which commenced 1 January 2021. The APP (January 2021) applies to the procurement of goods, services and construction by all NSW Government agencies. The objectives of the APP include to: <ul style="list-style-type: none"> • Support employment opportunities for Aboriginal and Torres Strait Islander peoples • Support sustainable growth of Aboriginal businesses by driving demand via Government procurement of goods, services and construction. A project-specific objective (see Table 7-103) was set to maximise employment and training opportunities for young people, Aboriginal and Torres Strait Islanders, disadvantaged groups, long-term unemployed and people who live along the proposed modification's alignment.
<i>Training Management Guidelines</i> (NSW Government, 2009)	The guidelines provide a strategic approach to training and skills opportunities and development in the construction industry at both the enterprise and project level. This is done by integrating training and skills development into planning and management. A project-specific objective (see Table 7-103) was set to maximise employment and training opportunities for the proposed modification's workforce.
<i>Transport Procurement Policy</i> (Transport, 2020f)	The Policy aims to promote strategic procurement practices within the delivery of transport infrastructure projects that generate environmental and social benefits beyond the goods and services required. The key outcomes the policy aims to achieve include avoiding unnecessary consumption, minimising environmental impacts from goods and services procured, supporting markets for sustainable product markets and driving innovation. Procurement will largely be considered in future stages of the proposed modification.

Policy/Goals/ Guidelines	Summary
<i>Transurban Sustainability Policy</i> (Transurban, 2020a)	The Policy aims to drive positive change across four pillars of sustainability being people, planet, places, and partnerships. The policy is aligned to several Sustainable Development Goals. Included in the policy is a commitment by Transurban to net zero by 2050, promotion of low-carbon material use and circular economy principles, and a range of social sustainability considerations. As part of the transition to net zero by 2050, there is also interim science-based targets in place for 2030 for major development projects, which is to reduce the carbon intensity by 55% by 2030 (Scope 3 tCO ₂ e from major projects, per \$M project capital cost).
<i>Transurban Climate Change Framework</i> (Transurban, 2021)	The Framework is centred around the transition to net zero, and resilient infrastructure and operations. The Framework aims to ensure climate-related risk and opportunity is embedded into the design, construction, and operation of infrastructure assets to ensure resilience into the future, in addition to the adoption of low-carbon principles such as implementation of renewable energy and low-carbon material use.
<i>Transurban Supplier Sustainability Code of Practice</i> (Transurban, 2020b)	The Code of Practice outlines the strategic procurement approach for procurement of goods and services. The Code outlines minimum and leadership standards, which encourage suppliers to go beyond legal compliance to advance social and environmental responsibility.
<i>NorthWestern Roads Sustainability Policy</i> May 2022	NorthWestern Roads has sustainability as a core business objective. The policy drives sustainability to be part of every-day decision making and practice.
<i>NorthWestern Roads Supplier Code of Conduct – June 2020</i>	Decision making and behaviour is guided by NorthWestern Roads values of Safety, Integrity, Respect, Transparency, Collaboration and Excellence. The Code of Conduct seeks to partner with businesses that share the same values and principles.

7.13.5 Impact assessment

Sustainability implementation

The policies, goals and guidelines discussed above have overarching themes and objectives that have been considered within the design of the proposed modification and the preparation of the Modification Report. Sustainability implementation has been considered for all stages of project delivery to ensure that the proposed modification can contribute to desired outcomes in line with the policies, goals and guidelines outlined in **Section 7.13.4**.

The implementation of sustainability principles during the preparation of the design has included:

- Avoidance of environmental impacts where possible during the site selection process for construction ancillary facilities and in the development of the design (see **Chapter 3** (Need for the modification and strategic context) and **Chapter 4** (Proposed modification))
- Assessment of environmental impacts and identification of measures to avoid and minimise adverse impacts (addressed in **Chapter 7** (Environmental assessment))
- Consideration of the requirements of the IS rating tool to the extent possible at this stage of the proposed modification (see **Section 7.13.2**)
- Consideration of sustainability principles within the development of the design for the proposed modification (discussed in **Chapter 9.0** (Synthesis of the modification report and conclusion))

- Identification of environmental management measures aimed at ensuring sustainability continues to be integrated into the future design and delivery of the proposed modification (see **Section 7.13.6**).

Establish sustainability objectives and targets

The sustainability objectives and targets for the proposed modification are set based on sustainability focus areas and the objectives and targets contained within relevant policies and guidelines. The purpose of setting objectives and targets is so that the proposed modification can comply with the intent of the current applicable policies and guidelines and to position the proposed modification to be able to achieve an 'Excellent' IS Rating.

The outcomes from the impact assessments in this Modification Report, including relevant conditions that may be applied to the proposed modification by the Minister for Planning and Public Spaces, would be used to finalise the sustainability objectives and targets for the proposed modification. Indicative sustainability objectives and targets for the current phase of the proposed modification are outlined in Table 7-103.

Table 7-103 Sustainability objectives and target themes

Transport focus areas	Transport goals	Objectives	Target themes
Respond to climate change	<ul style="list-style-type: none"> • Net zero emissions by 2050 • Consider climate change risks in all decisions 	<ul style="list-style-type: none"> • Minimise energy use and reduce carbon emissions without compromising the delivery of services to our customers. 	<ul style="list-style-type: none"> • Construction greenhouse gas emissions • Operational greenhouse gas emissions • Renewable energy use • Embodied energy within construction material • Low and zero emission vehicles, plant and equipment
		<ul style="list-style-type: none"> • Design and construct transport infrastructure to be resilient or adaptable to climate change impacts. 	<ul style="list-style-type: none"> • Climate change risk mitigation and/or adaption measures • Measures to address urban heat island effect
Protect and enhance biodiversity	<ul style="list-style-type: none"> • No net loss of biodiversity 	<ul style="list-style-type: none"> • Improve outcomes for biodiversity by avoiding, mitigating or offsetting the potential impacts of the project on plants, animals and their environments and contribute to the enhancement of biodiversity values. 	<ul style="list-style-type: none"> • Ecological value

Transport focus areas	Transport goals	Objectives	Target themes
Improve environmental outcomes	<ul style="list-style-type: none"> Develop a circular economy for Transport by designing waste and pollution out and keeping products and materials in use Reduce environmental impacts of projects and operations 	<ul style="list-style-type: none"> Minimise the use of non-renewable resources and minimise the quantity of waste disposed to landfill. 	<ul style="list-style-type: none"> Resource recovery of virgin excavated natural material (VENM) and a range of other materials Reuse of topsoil Diversion of office waste from landfill Water use during construction Water use during operation
		<ul style="list-style-type: none"> Minimise noise, water and land pollution generated by the project. 	<ul style="list-style-type: none"> Noise and vibration Water quality Contamination
		<ul style="list-style-type: none"> Minimise air quality impacts associated with the project and support initiatives that aim to reduce transport related air emissions. 	<ul style="list-style-type: none"> Construction air quality
Procure responsibly	<ul style="list-style-type: none"> All suppliers meet the standards in the Transport Supplier Sustainability Charter Social and environmental outcomes included in all procurement decisions Go beyond minimum compliance targets and Aboriginal Procurement Policy 	<ul style="list-style-type: none"> Procure goods, services, materials and works that over their lifecycle deliver value for money and contribute to the environmental, social and economic wellbeing of the community. Maximise employment and training opportunities for young people, Aboriginal and Torres Strait Islanders, disadvantaged groups, long-term unemployed and people who live along the project's alignment. 	<ul style="list-style-type: none"> Apprenticeships Training and development Workforce participation
Align spend and impact	<ul style="list-style-type: none"> All decisions consider value created from sustainability alongside financial analysis Reduce whole of life costs for the transport network 		

Transport focus areas	Transport goals	Objectives	Target themes
Partner with communities	<ul style="list-style-type: none"> Always leave a positive legacy for communities as a result of projects Enable, apply and report on community engagement 	<ul style="list-style-type: none"> Provide high quality urban design outcomes that contribute to the sustainability and liveability of communities in NSW Meet the reasonable needs and desires of the community for involvement, communication, and information 	<ul style="list-style-type: none"> Community benefit initiatives Crime prevention through environmental design (CPTED) Public open space
Respect culture and heritage	<ul style="list-style-type: none"> Aboriginal culture and non-Aboriginal heritage is integrated and preserved Acknowledge and incorporate culture through stories, examples, and best practice 	<ul style="list-style-type: none"> Manage and conserve cultural heritage values according to its heritage significance and contribute to the awareness of the past. 	-
Empower customers to make sustainable choices	Not applicable	-	-

7.13.6 Management and mitigation

Table 7-104 outlines additional mitigation and management measures recommended for the proposed modification to ensure sustainability measures are implemented.

The overarching sustainability objectives for the proposed modification will be met through the implementation of a sustainability management plan. The sustainability management plan will be prepared during detailed design.

The sustainability management plan will outline:

- Ratified sustainability objectives and targets
- Activities and responsibilities to achieve the sustainability objectives and targets
- Governance structures, processes and systems for implementing sustainability
- Description of the IS rating process and the proposed timeframes for achieving an IS rating
- Credits within the IS rating tool that will be targeted in order to obtain an 'Excellent' Design and As Built IS rating, and how these credits will be achieved
- Roles and responsibilities for ensuring sustainability is embedded in the design and construction of the proposed modification
- A process of continual improvement and ongoing review for the plan and the implementation of sustainability initiatives.

The implementation of these initiatives would contribute to the proposed modification achieving an IS rating of 'Excellent'.

As referred to above, mitigation and management measures in other assessment chapters are also relevant to the management of sustainability.

Table 7-104 Mitigation measures

Impact	ID	Mitigation measure	Responsibility	Timing
Desired sustainability outcomes not met	SU1	A sustainability management plan will be developed and implemented during detailed design, to give effect to the sustainability strategy for the proposed modification. The management plan will detail measures to meet the sustainability objectives and targets and IS rating tool credit requirements.	Construction contractor	Detailed design Construction Operation
	SU2	A minimum design rating level of 'Excellent' will be required under version 1.2 of the IS Rating Tool	Construction contractor	Detailed design Construction