

M1 Pacific Motorway Extension to Raymond Terrace:

Heatherbrae Bypass



Design and Landscape Plan

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Design and Landscape Plan

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Terms and abbreviations

BH2T Black Hill to Tomago	ER Environmental Representative	NB Northbound	SWTC Scope of Works and Technical Criteria
BR# Bridge #	HB Heatherbrae Bypass	NRAR Natural Resources Access Regulator	TEC Threatened Ecological Communities
CEMP Construction Environmental Management Plan	HDG Hot-dipped galvanised	NTS Not to Scale	TfNSW Transport for NSW
CH# Chainage #	ISC Infrastructure Sustainability Council	NSW New South Wales	WGT Worimi Green Team
CoA Conditions of Approval	ITS Intelligent Transport System	O and M Operations and Maintenance	WSUD Water Sensitive Urban Design
CPTED Crime Prevention Through Environmental Design	JHGAJV John Holland Gamuda Australia Joint Venture	PCT Plant Community Type	Artist impression Illustrates the overall design intent shown is indicative only.
CSSI Critical State Significant Infrastructure	LCZ Landscape Character Zone	PHUDF Pacific Highway Urban Design Framework	Landscape shown at full maturity Refers to landscape shown at 15 years.
D&C Design and Construct	LEP Local Environmental Plan	REMMs Revised Environmental Management Measures	The Project M1 Pacific Motorway Extension to Raymond Terrace: Heatherbrae Bypass
DLP Design and Landscape Plan	LGA Local Government Area	RMP Rotational Moulded Panels	
DPE NSW Department of Planning and Environment	LMP Landscape Management Plan	RMS Roads and Maritime Services (now Transport for NSW)	
EEC Endangered Ecological Community	M12RT M1 Pacific Motorway Extension to Raymond Terrace	SB Southbound	
EIS Environmental Impact Statement	Motorway M1 Pacific Motorway	SME Subject Matter Expert	

Compliance matrix

Transport for NSW (TfNSW) has received approval to construct and operate a new 15 kilometre M1 Pacific Motorway Extension from Black Hill to Raymond Terrace within the Newcastle City Council and Port Stephens Council local government areas. The new extension known as the M1 Pacific Motorway Extension to Raymond Terrace (M12RT) was declared to be a Critical State Significant Infrastructure (CSSI) and received planning approval from the NSW Minister of Planning on 8 November 2022 and the Federal Minister for the Environment and Water on 13 February 2023, following the definition of the Environmental Impact Statement (EIS).

The M12RT will be delivered as follows:

- Stage 1: Southern Package - Black Hill to Tomago (BH2T), delivered by the John Holland Gamuda Australia Joint Venture (JHGAV)
- Stage 2: Northern Package - Heatherbrae Bypass (HB), delivered by Seymour Whyte.

Seymour Whyte has been appointed by TfNSW for the Design and Construct (D&C) contract for Heatherbrae Bypass (the Project), which involves the design and construction of 5 kilometres of dual carriageway with two lanes in each direction, with an interchange at Raymond Terrace.

Stage 1 and Stage 2 will be constructed concurrently. The Staging Report has been endorsed by the Environmental Representative (ER) and has been submitted to the Planning Secretary for information.

This Design and Landscape Plan (DLP) document illustrates the Northern Package only and is referred to as the Project in this document. The Southern Package has been prepared as a separate document.

This DLP has been prepared to meet the relevant Conditions of Approval (CoA) and Revised Environmental Management Measures (REMMs) conditions outlined in the:

- Conditions of Approval for M1 Pacific Motorway Extension to Raymond Terrace SSI-7319 - Instrument of Approval 8 November 2022
- Revised Environmental Management Measures - M1 Pacific Motorway Extension to Raymond Terrace, Appendix K of Submissions Report, June 2022.

The DLP will be submitted to the Planning Secretary for approval no later than one month before the construction of permanent built surface works and/or landscaping in the area to which the DLP applies. Unless otherwise agreed with the Planning Secretary, construction of permanent built work or landscaping that are the subject of this DLP will not be commenced (in the area to which this DLP applies) until the DLP has been approved by the Planning Secretary.

The following compliance matrix tables provide a document reference for where the various CoAs and REMMs can be found in the document. The two packages have been developed to have consistent design philosophy which provides an integrated urban design outcome for both sections to deliver the objectives and principles of the approved Planning documents.

Conditions of Approval (CoA)

Table 1: CoA compliance matrix

CODE	CONDITIONS	REFERENCE IN REPORT
Evidence of Consultation		
A8	Where the terms of this approval require consultation to be undertaken, evidence of the consultation undertaken must be submitted to the Planning Secretary and ER (as relevant) with the corresponding documentation in accordance with the consultation procedures set out in the Communication Strategy required by Condition B1. The evidence must include:	
(a)	documentation of the engagement with the identified party in the condition of approval that has occurred before submitting the document for approval;	Chapter 1.6
(b)	a log of the dates of engagement or attempted engagement with the identified party;	Chapter 1.6
(c)	documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations;	Chapter 1.6
(d)	outline of the issues raised by the identified party and how they have been addressed; and	Chapter 1.6
(e)	a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.	Chapter 1.6
	Note: The Communication Strategy required by Condition B1 should be used in conjunction with Condition A8 to determine the level consultation and evidence required that is proportionate to the activity that will be undertaken.	
Staging		
Staging the delivery of the CSSI		
A9	The CSSI may be constructed and operated in stages (including but not limited to temporal, location or activity-based staging). Where staged construction and/or operation is proposed, a Staging Report (for either or both construction and operation as the case may be) must be prepared. The Staging Report must be endorsed by the ER and then submitted to the Planning Secretary for information no later than one month before the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one month before the commencement of operation of the first of the proposed stages of operation). Note: Unless otherwise specified in this approval, early works are a stage of construction unless considered to be Low Impact Work.	Page d

CODE	CONDITIONS	REFERENCE IN REPORT
Lighting and Security		
E19	The CSSI must be constructed and operated with the objective of minimising light spillage to surrounding properties. All lighting associated with the construction and operation of the CSSI must be consistent with the requirements of AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces. Additionally, the Proponent must provide mitigation measures to manage any residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.	Chapter 6.8
Design Outcomes		
E21	The design and landscape outcomes of the CSSI must be:	
(a)	informed by Appendix O of the Environmental Impact Statement as listed in Condition A1(a), including but not limited to the objectives and design principles, requirements, and opportunities;	Chapter 3.2
(b)	prepared in consultation with the community (including the landowners whose visual amenity is directly or indirectly impacted and businesses or a representative of the businesses), LALCs, RAPs and relevant council(s); and	Chapter 1.6
Design and Landscape Plan		
E23	A Design and Landscape Plan (DLP) must be prepared to document and illustrate the permanent built works and landscape design of the CSSI and how these works are to be maintained. The DLP must inform the final design of the CSSI and give effect to the outcomes and commitments documented in by Condition A1. The Plan does not apply to work which, for technical, engineering, or ecological requirements, or other requirements as agreed by the Planning Secretary, does not allow for alternative design outcomes.	M1RTHB-SEYWC-6003-LA-PLN-000001 (This document)
E24	The DLP must be:	
(a)	prepared by a suitably qualified and experienced person(s) in urban and landscape design and (where required) bush regeneration;	Chapter 1.3
(b)	prepared in consultation with relevant councils and the community, including affected landowners and businesses;	Chapter 1.6
(c)	submitted to the Planning Secretary for approval no later than one month before the construction of permanent built surface works and/or landscaping in the area to which the DLP applies; and	Chapter 1.6

CODE	CONDITIONS	REFERENCE IN REPORT
	(d) implemented during construction and operation of the CSSI unless that asset has been transferred to the relevant authority, or equivalent and they have agreed that implementation of the DLP is not required for that asset.	Chapter 1.6
	Note: The DLP may be developed and considered in stages to facilitate design progression and construction. Any such staging and associated approval would need to facilitate a cohesive final design and not limit final design outcomes	
E25	The DLP must document how the following matters have been considered in the design and landscaping of the project:	
	(a) the requirements of Conditions E20 to E22;	Chapter 1.6 (E21) Chapter 3.2 (E21) E20 & E22 - N/A
	(b) demonstrate compliance with Bridge Aesthetics: Design Guidelines to improve appearance of bridges in NSW (Transport for NSW, 2019);	Chapter 6.3
	(c) demonstrated integration of Crime Prevention Through Environmental Design principles; and	Chapter 6.7
	(d) Designing with Country and the principles and objectives of the draft Connecting with Country Framework.	Chapter 4.2
E26	The DLP must include, but not be limited to:	
	(a) the design of the permanent built elements of the CSSI including their form, materials and detail, with a focus on high quality bridge design (for the Hunter River viaduct), and integrated art	N/A
	(b) the design of the project landform and landscaping elements (including visual screening requirements);	Chapter 5 Chapter 6.2 Chapter 6.12 Chapter 6.13
	(c) details of strategies to rehabilitate, regenerate or revegetate disturbed areas with priority given to the use of local native species;	Chapter 6.12 Chapter 6.13
	(d) landscaping outcomes agreed to under Condition E20;	N/A
	(e) details of how Aboriginal and non-Aboriginal heritage interpretation and public art are incorporated within the design of built features (such as noise barriers, viaduct), having regard to the results of any archaeological investigations;	Chapter 4.2 Chapter 6.4

CODE	CONDITIONS	REFERENCE IN REPORT
	(f) developed visualisations, cross sections and plans showing the proposed design outcome; and	Chapter 5 Chapter 6
	(g) management and routine maintenance standards and regimes for design elements and landscaping work (including adequate watering of plants following planting depending on forecast weather conditions and including weed management) to ensure the success of the design and landscape outcomes.	Chapter 6.11
E27	Unless otherwise agreed with the Planning Secretary, construction of permanent built work or landscaping that are the subject of the DLP must not be commenced (in the area to which the DLP applies) until the DLP has been approved by the Planning Secretary.	Chapter 1.6
Operational Maintenance		
E28	The ongoing maintenance and operation costs of urban design, open space, landscaping and recreational items and work implemented as part of this approval remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Before the transfer of assets, the Proponent must maintain items and work to at least the design standards established in the DLP required by Condition E26.	Chapter 6.11

Revised Environmental Management Measures (REMMs)

Table 2: REMMs compliance matrix

IMPACT	REFERENCE	ENVIRONMENTAL MANAGEMENT MEASURE	REFERENCE IN REPORT	IMPACT	REFERENCE	ENVIRONMENTAL MANAGEMENT MEASURE	REFERENCE IN REPORT		
Urban design and visual amenity									
Landscape character and visual impacts including during construction	UD01	An Urban Design and Landscape Plan (UDLP) will be prepared to support the project. The plan will present an integrated urban design for the project, providing practical detail on the application of design principles and objectives identified in the EIS. The plan will include:	M1RTHB-SEYWC-6003-LA-PLN-000001 (This document)			- Landscape design guideline: Design guideline to improve the quality safety and cost effectiveness of green infrastructure in road corridors (Roads and Maritime Services 2018a)	Chapter 1.5		
		- Location and identification of existing vegetation and proposed landscaped areas, including species to be used		Chapter 5		- Bridge Aesthetics: Design Guidelines to improve appearance of bridges in NSW (Transport for NSW 2019a)	Chapter 1.5		
		- Built elements including retaining walls, bridges and noise barriers		Chapter 6.3 Retaining walls and noise barriers - N/A		- Noise wall design guideline: Design guideline to improve the appearance of noise walls in NSW (Transport for NSW 2016a)	N/A		
		- Walking and cyclist elements including footpath locations, paving types and pedestrian crossings		N/A		- Shotcrete Design Guideline: Design guidelines to avoid, minimise and improve the appearance of shotcrete in NSW (Transport for NSW 2016b)	N/A		
		- Fixtures such as lighting, fencing and signs		Chapter 6.8 Chapter 6.9 Chapter 6.10		UD02	Disturbed areas outside the operational footprint and within the construction footprint will be revegetated following completion of construction activities.	Chapter 5	
		- Details on the staging of landscape work including related environmental controls such as erosion and sedimentation controls and drainage		Chapter 6.13		UD03	Cut batters and fill embankments for the project will be designed to allow revegetation to assist with the integration of the project into the surrounding landscape where possible depending on site conditions.	Chapter 5	
		- Procedures for monitoring and maintaining landscaped or rehabilitated areas		Chapter 6.13		UD04	Project construction elements such as fencing and hoardings will be designed to minimise impacts to landscape character and visual amenity where practicable	Chapter 6	
		- The project will consider CPTED principles during detailed design to minimise safety and security risks to all users and communities in the study area. The project will carry out CPTED reviews a teach milestone by a qualified professional. Additional recommendations as a result of reviews will be implemented where reasonable and feasible		Chapter 6.7		Aboriginal cultural heritage	UD06	The project detailed design will incorporate relevant Aboriginal cultural heritage elements of Beyond The Pavement (Transport for NSW 2020a) and Designing With Country (GANSW 2020), where practical.	Chapter 4.2
		- Water sensitive urban design solutions.		Chapter 1.5					
		The plan will be prepared in accordance with Transport urban design policy guidelines including:							
- Beyond the Pavement – Urban design approach and procedures for road and maritime infrastructure planning, design and construction (Transport for NSW 2020a)		Chapter 1.5							



Figure 1: Raymond Terrace Interchange - aerial view, looking south



Figure 2: BR11 Bridge over Windeyers Creek - aerial view, looking south



Figure 3: Raymond Terrace Interchange - eye level view, looking south



Figure 4: BR11 Bridge over Windeyers Creek - eye level view, looking south

Executive summary

The M1 Pacific Motorway Extension to Raymond Terrace: Heatherbrae Bypass (the Project) forms an integral part of the M1 Pacific Motorway and the A1 Pacific Highway which runs between Sydney and Brisbane, and as such is a critical part of the freight and movement network of New South Wales (NSW). The works represent the final bypass stages of the M1 Pacific Motorway which will result in reduced congestion and conflict with local traffic movements.

The Project is:

- Located 23 kilometres north of Newcastle in the City of Newcastle and Port Stephens Council LGAs.
- Located in close proximity to the Mid North Coast and the coastal regions of Newcastle and Port Stephens.
- A predominantly rural urban area that plays an important role in NSW regional economy.
- Comprises important land uses include manufacturing and industrial areas.
- Located to the east of Heatherbrae skirting the perimeter of its development.

Elements of the Project include:

- A five-kilometre motorway upgrade connecting the southern section of the M1 Pacific Motorway extension to Raymond Terrace.
- One interchange at Raymond Terrace.
- Three bridges including two overbridges (BR10 and BR12) and one creek bridge (BR11) over Windeyers Creek.

The design has been developed to achieve the Project objectives and principles as outlined in the approved Planning documents. The key initiatives include:

1. The reinstatement of the enclosed forest to the east of the alignment.
2. Provision of screening landscape to the west to reduce the visual impact of the Motorway from the community of Heatherbrae.
3. Feature landscape at the northern interchange at Raymond Terrace which provides a distinct character that separates from the adjoining forest communities whilst responding to the Windeyers Creek creekline landscape, which is in close proximity to the interchange.
4. Incorporation of fauna crossings.
5. Incorporation of interpretive elements, developed with Aboriginal artist Saretta Fielding of Saretta Art & Design on the safety screens and in the interchange. The safety screens incorporate visual motifs of objects and symbols of cultural themes identified by Saretta that respond to Country.



Figure 5: Views of BR10 and BR12



Figure 6: Existing character of the Project along Masonite Road