



NORTHERN LAND RECLAMATION REQUEST FOR AMENDMENT

TECHNICAL NOTE

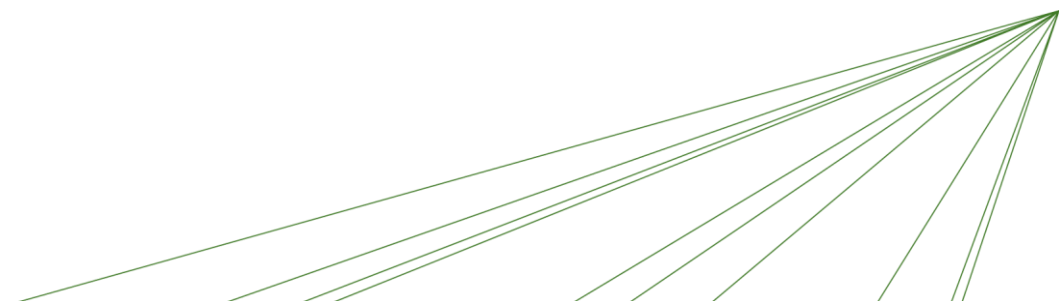
NEW BRIDGEWATER BRIDGE

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 CLIENT: DEPARTMENT OF STATE GROWTH
 PROJECT: NEW BRIDGEWATER BRIDGE PROJECT
 LOCATION: BRIDGEWATER, TASMANIA, AUSTRALIA
 PROJECT NO: 2024

Revision History

Rev	Date	Details	Author	Reviewer	Approver
A	3 Feb 2023	Issued for Acceptance	G. Williams	E. McP	EPA, PWS

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1 INTRODUCTION

1.1 Purpose

The purpose of this technical note (TN) is to request regulatory permission for an amendment to the current configuration of the hardstand to the edge of the northern land reclamation works.

The environmental management requirements and controls for the reclamation works are set out in the Design and Construction Environmental Management Plan (DCEMP).

The amendment to the current built northern land reclamation works consists of:

- **Northern Land Reclamation**
 - Modification to the temporary bridge abutment hardstand to accommodate the piling rig working from the lower platform, forming a slightly larger support area. Modified hardstand will continue to provide the necessary scour protection commensurate with the duration of usage
 - Placement of additional clean gravel onto the shoreline, toeing into the river

As before, at the end of the construction works, all rock fill beyond the existing shoreline will be removed and existing shoreline protected with the rock fill up to the Highest Astronomical Tide (HAT) level. The area above HAT will be revegetated and handed over to Brighton Council for future development.

Section 2 of this TN sets out the key details of the proposed Northern Land Reclamation hardstand amendment.

1.2 Permit Conditions and Restrictions

The following permit conditions and restrictions as set-out in Permit Number MPP2201 are addressed in this TN.

Design Plans

6. *The design plans must be modified from the plans listed in condition 5:*
 - 6.13 *to identify the areas of land to be reclaimed from the River Derwent above the highwater mark, that does not exceed:*
 - 6.13.2. **2500 m²** at the northern site.

Condition 6.13.2 is addressed in Section 2.1 of this TN.

Reclamation

18. *Reclamation must use one or more of the following fill types:*
 - 18.1. *clean fill type 1 as defined under the Environmental Management and Pollution Control Act 1994; and*
 - 18.2. *an alternative fill approved by the Director, EPA.*
20. *Reclaimed land at the northern site must have erosion protection measures installed, commensurate with the duration of usage.*

As per condition 18, all fill used to amend the northern reclaimed area will be clean fill type 1 as defined under the Environmental Management and Pollution Control Act 1994. This includes rock material, clean fill, and clean sand.

Condition 20 is addressed for the Northern Land Reclamation in Section 2 of this TN.

1.3 Parks and Wildlife Service Conditions

The following Parks and Wildlife Service Conditions and restrictions as set-out in the Licence for construction works on reserved Crown land – New Bridgewater Bridge Project, dated 15th July 2022, are addressed in this report.

PWS Conditions	No.	Responsibility	Addressed in TN1”[
Reclamation works			
<p>Prior to the commencement of the reclamation works, the design plans for the permanent and temporary reclamation areas must be submitted to the satisfaction of the Regional Manager, PWS South, or their delegate. The extent of the reclaim area must be the minimum required for the purpose of the reclaimed land and the shape must be designed to minimise disruptions to water flows as demonstrated by hydrodynamic modelling. The plans must include:</p> <ol style="list-style-type: none"> 1) the final location and dimensions of the permanent and temporary reclamation areas; and, 2) the area in m2 of reclaimed land located above and below the high tide line. 	RC5	The Contractor is responsible for fulfilling condition RC5.	Section 2.1 of this TN sets out the key dimensions to be added to the existing built northern land reclamation.

1.4 Reference Documents

The following documents are to be referenced in respect to the Environmental Management requirements associated with the amended reclamation works.

Document Name	Document Number
Aboriginal, Historic and Geological Heritage Management Plan	2024-MCD-0000-PLA-PRJ-0001
Air Quality and Emissions Management Plan	2024-MCD-0000-PLA-PRJ-0003
Design and Construction Environmental Management Plan (DCEMP)	2024-MCD-0000-PLA-PRJ-0008
Erosion, Sediment Control and Drainage Management Plan	2024-MCD-0000-PLA-PRJ-0015
Flora and Fauna Management Plan	2024-MCD-0000-PLA-PRJ-0017
Hazardous Materials Management Plan	2024-MCD-0000-PLA-PRJ-0019
Noise and Vibration Management Plan	2024-MCD-0000-PLA-PRJ-0007
Revegetation and Rehabilitation Management Plan	2024-MCD-0000-PLA-PRJ-0030
Soil and Water Management Plan	2024-MCD-0000-PLA-PRJ-0032

Waste Materials and Resource Management Plan	2024-MCD-0000-PLA-PRJ-0035
Weed, Disease and Hygiene Management Plan	2024-MCD-0000-PLA-PRJ-0036
Construction Light Management Plan	2024-MCD-0000-PLA-PRJ-00051

The following documents are to be referenced in respect to the Hydrodynamic modelling.

Document Name	Document Number
New Bridgewater Bridge – Hydrodynamic Modelling Report – Entura	MPIS Appendix R Dated 10 November 2021
New Bridgewater Bridge – Hydrodynamic Modelling Report – Jacobs	2024-JAC-1066-REP-HYD-00001

2 NORTHERN LAND RECLAMATION

2.1 Summary

Figure 1 below shows the current approved northern land reclamation indicatively shown over an aerial image captured in February 2022.



Figure 1 – Extent of Current As-Built Northern Land Reclamation

The key dimensions for the current as-built northern land reclamation are:

- Length along bridge centreline – 45m.
- Width – 45m
- Extent from shoreline – 15m
- Gross area – 1,616 m²
- Total area of land reclaimed above the high-water mark is 614 m²

Figure 2 shows the proposed amendment to the current as-built northern land reclamation indicatively dimensioned over an aerial image captured in January 2023.

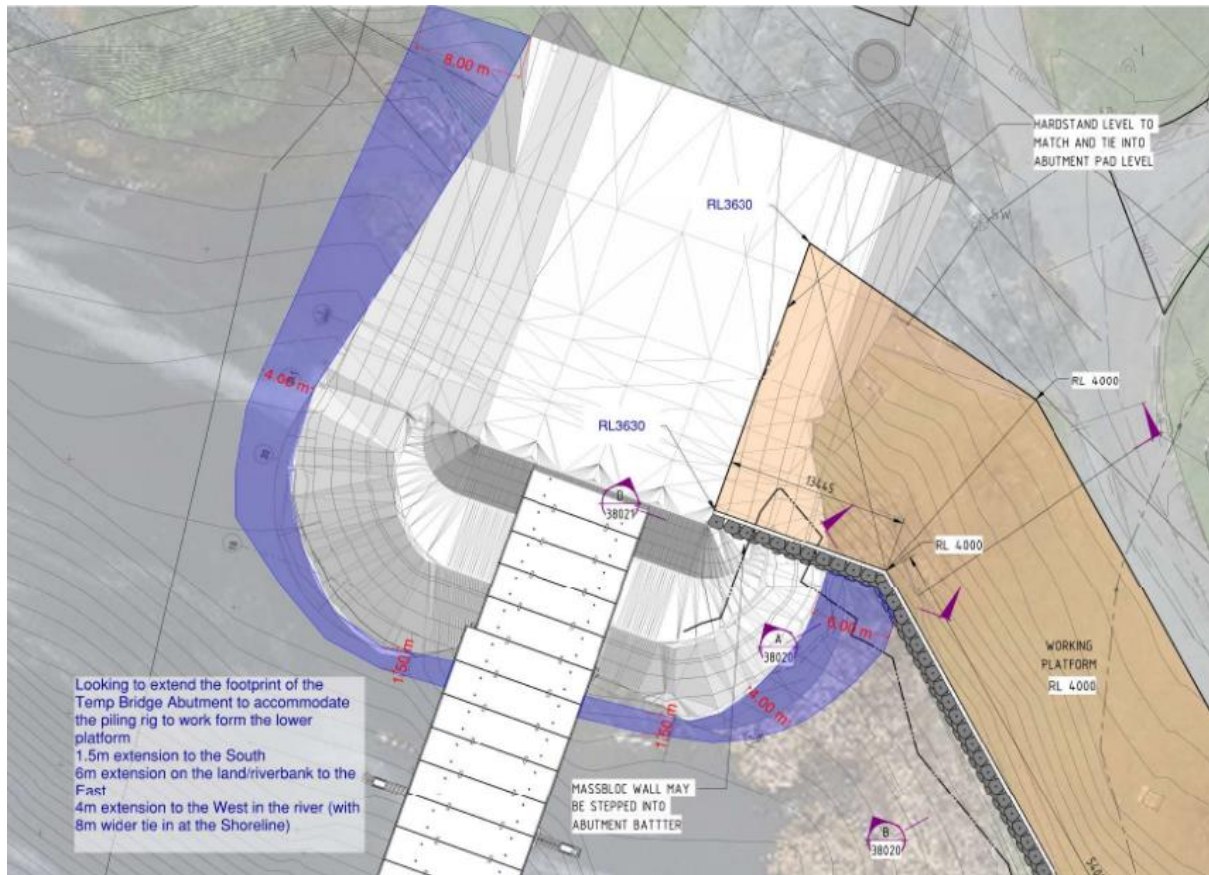


Figure 2 – Extent of Proposed Amendment to Northern Land Reclamation

The key dimensions for the proposed amendment to as-built northern land reclamation are:

- Length along bridge centreline – $45\text{m} + 1.5\text{m} = 46.5\text{m}$.
- Maximum width – $45\text{m} + 14\text{m} = 59\text{m}$
- Maximum extent from shoreline – $15\text{m} + 1.5\text{m} = 16.5\text{m}$
- Gross area – $1,616\text{ m}^2 + 300\text{ m}^2 = 1,916\text{m}^2$
- Total area of land reclaimed above the high-water mark is $614\text{ m}^2 + 300\text{ m}^2 = 916\text{ m}^2$ (this remains less than the maximum $2,500\text{ m}^2$ allowed by Permit Condition 6.13).

The northern land reclamation requirements remain as follows:

- Short term stability under crane and vehicle loading necessary for construction of the New Bridgewater Bridge.
- Short term stability for scour protection in storm events, in return period periods up to 1 in 10 years.
- Minimise impact to existing shoreline to minimise changes in the river hydrodynamics. The maximum change in shoreline is $11.3\text{m} + 1.5\text{m} = 12.8\text{m}$ from existing at the highwater mark.

2.2 Hydrodynamic Modelling

- The proposed northern land reclamation was modelled by Entura as presented as part of the MPIS (Refer MPIS – Appendix R – Hydrodynamic Modelling – 10 November 2021).
- An image of the northern reclamation is shown below. The area as modelled was nominally 80m long and extended about 20m from the existing shoreline.
- The report concluded that “some localised minor erosion/deposition around the northern reclamation” would occur. Note that the Entura report assumed that the northern reclamation would remain in position long term and would not be removed at the end of construction.
- The amended as-built reclamation is only 46.5m long and extends approximately 16.5m from the existing shoreline. The reclamation will be removed at the end of construction.
- The amendment to the current as-built reclamation is expected to continue to have less impact compared to that previously modelled.
- No further modelled is considered necessary due to the limited impacts noted by Entura previously and that the proposed amended reclamation will remain significantly smaller than previously modelled and will only be in place for the duration of construction.



Figure 3 – Northern Land Reclamation as modelled by Entura

- The report produced by Jacobs in Oct 2022 did not consider the northern reclamation any further due to its temporary nature and removal post use.

2.3 Water Quality Impact Study (WQIS)

Elgin were consulted to determine if the proposed amendment would have any bearing from a WQIS perspective. Elgin confirmed that:

“ the proposed amendments of modifying the abutment hardstand and placement of additional clean gravel onto the shoreline, toeing into the river have been reviewed against the study findings in the NLR WQIS and management measures in the EWQMMP. It is concluded that there would be no material change to the findings in the NLR WQIS or that additional water quality management measures would be required in the EWQMMP for these amendments to that already installed at the NLR. Water quality monitoring is ongoing at the NLR as per the frequency outlined in the EWQMMP and so this would also occur during these proposed amended works. “

2.4 Construction Methodology

The amended northern land reclamation will be constructed ahead of the piling rig requiring access to the lower platform. The construction staging will be based on the following:

- Stage 1 will include placement of silt curtain around the outside perimeter of abutment and proposed amendment placement works. Other necessary environmental controls as required by the DCEMP will also be prepared and as required, installed.
- Stage 2: Start the controlled placement of clean rock using excavator to extend the current as-built working platform in accordance with the dimensions presented on Figure 2
- Stage 3: Continue placement of the rocks up to the finished level of the working platform all around.

2.5 Revegetation and Handover

The northern land reclamation remains a temporary asset which will be removed at the end of the construction works.

The concrete abutment and handstand will be demolished and disposed of.

Silt curtains will be placed around the perimeter of the reclamation to mitigate silt entering the river.

Using a GPS enabled long reach excavator the temporary rock fill will be removed from the land reclamation and disposed of. All rock located above the seabed will be removed whilst carefully not disturbing the seabed. The GPS control on the excavator will ensure that the existing seabed is not disturbed. Any rock which has penetrated the seabed will remain (note: maximum rock size is 300mm).

The rock fill will be excavated back to the original shoreline, albeit the existing jetty and boat ramp will not be installed so some reshaping will occur. A minimum 500mm thick layer of rock fill will remain on the existing shoreline to provide scour protection. As used in the reclamation works, the maximum rock size shall be 300mm and the rock fill shall have not more than 5% fines after compaction.

Exposed areas above the high-water mark will be revegetated based on an agreed landscaping plan with the Brighton Council, consistent with the future foreshore development which is to be implemented by others.