

27 March 2025

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AUSTRALIA

Barker Ryan Stewart Pty Ltd

1/22 Newton Street
Broadmeadow NSW 2292

Attn: Ian Stewart

**Reference: LETTER REPORT ON CULVERT CONSTRUCTION
285-325 PACIFIC HIGHWAY, LAKE MUNMORAH**

Introduction

Stantec Australia Pty Ltd (Stantec) have been engaged by Barker Ryan Stewart Pty Ltd (BRS) to provide additional commentary on groundwater impacts from the proposed development at 285-325 Pacific Highway, Lake Munmorah. The additional commentary has been provided in response to outcomes of a meeting held with The Joint Regional Planning Panel (JRPP) regarding groundwater impacts from the development on the surrounding sites, particularly the adjacent coastal wetlands.

Prior to the JRPP meeting, BRS provided Stantec with extracts from a Central Coast Council (CCC) RFI which Stantec provided a response to in letter report format (reference 304001021-103.1, dated, 24/03/25) [1].

Stantec have also previously undertaken the following assessments for the site:

- “Report on Supplementary Contamination Assessment - Lake Munmorah”, referenced: 304001021-200.2, Dated: 10th November 2023 [1].
- “Report on Water Quality Monitoring - 285-325 Pacific Highway, Lake Munmorah”, referenced: 304001021-102.4, Dated: 29th January 2024 [2].

It is understood that based on discussions with CCC following the meeting, the main concern relating to their RFI pertained to the management of groundwater during construction of the western culvert (under proposed Chisolm Avenue) given its location within the proximity buffer of the State environmental Planning Policies (SEPP) (Resilience and Hazards) 2021 Coastal Wetlands.

Review of NSW Planning Portal Spatial Viewer [4] indicates that the proposed western culvert is in the order of 50 m from the mapped SEPP 2021 Coastal Wetlands (See Figure 1 below).

Stantec were provided with a cross section prepared by BRS (Rev. D, CC180099-07-545 and 721) of the proposed western culvert in the area of concern. The provided cross section indicates that proposed invert depths are approximately on grade with existing surface levels. Review with respect to previous groundwater assessments at the site indicates that the proposed invert of the western culvert is above the anticipated groundwater depth.

Given the presence of the gully line, additional excavation may be required to remove unsuitable and facilitate a suitable bearing foundation for the western culvert. During previous investigations associated with the Supplementary Contamination Assessment [2] Stantec undertook a preliminary geotechnical assessment within the approximate location of the proposed western culvert. Based on the conditions at the time of assessment, the proposed invert depths and considering typical bearing capacity requirements for similar structures, less than 500 mm of over-excavation is anticipated. Such excavations during construction of the western culvert are still unlikely to encounter groundwater.

However, in the event groundwater is encountered during construction of the western culvert it is expected that the encountered groundwater will be minor, particularly when considering results of previous hydraulic conductivity testing undertaken in groundwater wells by Stantec (slug testing).

It is anticipated that any groundwater encountered during construction of the western culvert can be short-term managed via sump and pump techniques (as opposed to spears). Such techniques would have minor temporary draw down of the groundwater with an anticipated radius of approximately 10 m from the drawdown point. As such, these measures are not expected to impact the mapped coastal wetland with a sufficient offset from the proposed culvert construction.

Where groundwater is encountered during the culvert construction and sump and pump techniques used, the groundwater generated shall be pumped to a construction on-site temporary sedimentation basin to be flocced and treated prior to being discharged back into the watercourse. The above construction methodology of the proposed western culvert is considered to be typical practice.

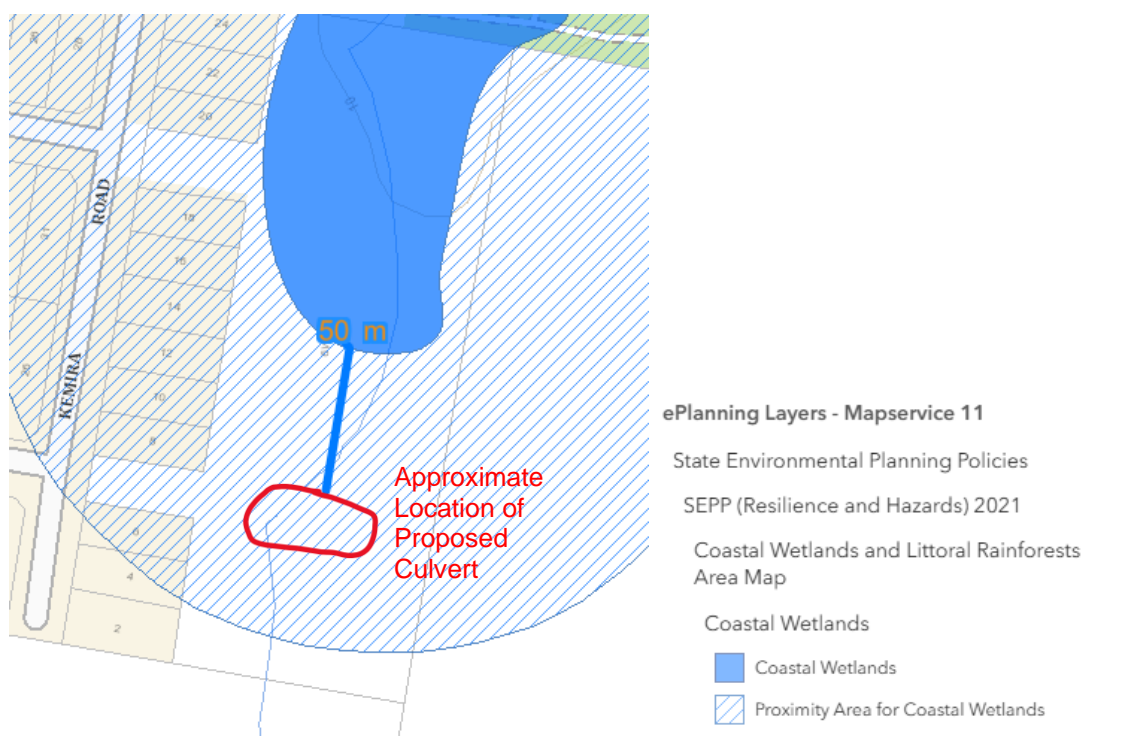


Figure 1. Extract from NSW Planning Portal Spatial Viewer of the Culvert Location Relative to the Coastal Wetland Mapping.

Based on the proposed culvert cross section and considering previous investigation data at the site, it is anticipated that both the short term construction and long term functioning of the western culvert will not impact the SEPP (Resilience and Hazards) 2021 Coastal Wetland area mapped downstream.

Yours Sincerely,

Ian Piper
Technical Services Manager, Geotechnical

STANTEC AUSTRALIA PTY LTD

References

- [1] Stantec Australia Pty Ltd, LETTER REPORT ON GROUNDWATER COMMENTARY 285-325 PACIFIC HIGHWAY, LAKE MUNMORAH, 304001021-103.1, Dated. 24/03/25.
- [2] Stantec Australia Pty Ltd, "Report on Supplementary Contamination Assessment - Lake Munmorah - 304001021-200.2," November 2023.
- [3] Stantec Australia Pty Ltd, "Report on Water Quality Monitoring - 285-325 Pacific Highway, Lake Munmorah - 304001021-102.4," January 2024.
- [4] NSW Government, "Planning Portal Spatial Viewer," Department of Customer Service, 2020. [Online]. Available: <https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address>. [Accessed 27 March 2025].

Limitations

Stantec have performed investigation and consulting services for this project in general accordance with current professional and industry standards. The extent of testing was limited to discrete test locations and variations in conditions can occur between test locations that cannot be inferred or predicted.

Stantec, or any other reputable consultant, cannot provide unqualified warranties nor does it assume any liability for the site conditions not observed or accessible during the investigations. Site conditions may also change subsequent to the investigations and assessment due to ongoing use.

This report and associated documentation was undertaken for the specific purpose described in the report and shall not be relied on for other purposes. This report was prepared solely for the use by Barker Ryan Stewart Pty Ltd any reliance assumed by other parties on this report shall be at such parties own risk.