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STRUCTURAL - CIVIL - STORMWATER - REMEDIAL

... STRUCTURALLY SOUND

Waterways Impact Statement

13 Morgan Road, Belrose

Issue A

8 July 2021

Prepared for: David & Jenny Austin

Prepared by: Christian Ferry

Waterways Impact Statement

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Client: David & Jenny Austin

Engineer: Christian Ferry

Principal review: Rick Wray

Council: Northern Beaches Council (Warringah)

Northern Beaches Consulting Engineers Pty Ltd

ABN 076 121 616

Suite 207, 30 Fisher Road, Dee Why NSW 2099

SYDNEY Tel: (02) 9984 7000

Email: nb@nbconsulting.com.au

Web: www.nbconsulting.com.au

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Document History

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1. Introduction

Northern Beaches Consulting Engineers were engaged by David & Jenny Austin to prepare a Waterways Impact Statement to identify potential issues associated with the proposed development at 13 Morgan Road in Belrose. The Waterways Impact Statement has been assessed in accordance with the requirements of *Warringah Creek Management Study 2004*.

2. Waterway Analysis and Assessment of Impact

2.1 Ecological Value

Very High Ecological Value (Group A). Source: 5.3 Creek Classification: Warringah Council Creek Management Study.

2.2 Extent of construction

The proposed development is located within the classified riparian buffer and riparian zone. However, it appears from that the proposed building envelope is only partially within the riparian zone extent and entirely outside of the creek channel extent (refer Figure B12.1: Deep Creek, Warringah Council Warringah Creek Management). Further assessment on-site indicates that the proposed building location is largely within the footprint of the existing building envelope with modest extensions. No extension will encroach upon established native vegetated areas.

2.3 Proposed earthworks

The excavation for the development is not envisaged to be particularly extensive in terms of excavation depths given the shallow nature of the underlying rock in the general location of the proposed building. The site will undergo demolition of the existing building and excavation for the construction of a new dwelling. The excavation works anticipated include but may not be limited to excavation for new footings which are very likely to be founded on rock, construction of the new dwelling and landscaping works to surround the new dwelling.

2.4 Extent of operational activities

The extent of operational activities includes the construction of a new residential dwelling and driveway access, encompassing an area of approximately 1625m².

2.5 Acid Sulfate Soils

Geotechnical investigations are recommended. This is to be carried out in general accordance with Northern Beaches Council (Warringah) policy requirements.

2.6 Location of Construction

The new dwelling and driveway access is to be constructed covering the upper (northern corner) section of the site.

2.7 Site and Surrounds

The subject site is predominately surrounded by low density residential development.

2.8 Impacts to Riparian Zone

The proposed building is shown slightly encroach upon the riparian zone as detailed in Figure B12.1 (refer Appendix A) and solely within the riparian buffer. See Figure 1 below. The proposed dwelling will be largely contained within the existing building envelope and will be founded on the upper rock shelf within the subject site and beyond the vicinity of the existing creek tributary which originates downstream beyond the subject site boundary. Therefore, it is not anticipated that the integrity of the riparian zone will be substantially impacted should the runoff be collected and discharged in accordance with the Stormwater Management Plan prepared by NBCE, dated 08/07/2021. It is recommended that the riparian zone boundary in the vicinity of the subject site be reviewed by a suitably qualified ecologist with relevant experience in this field.

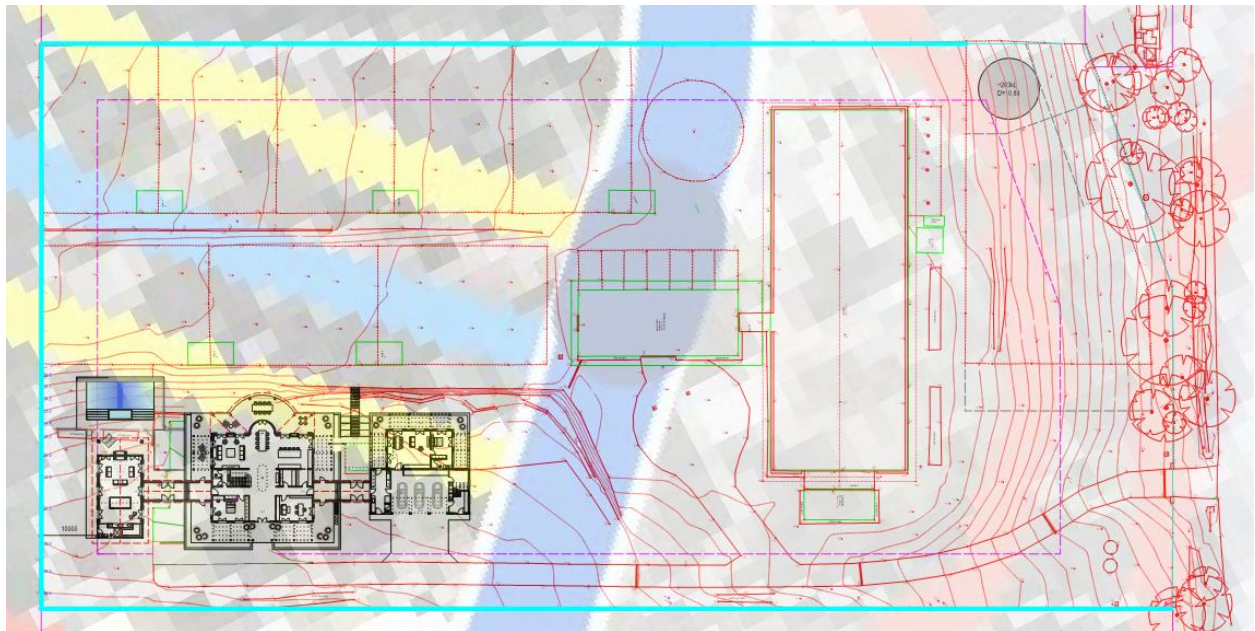


Figure 1 - Site Plan with Deep Creek Riparian Map overlay. Source: Northern Beaches (Warringah) Council

2.9 Mitigation Measures

Installation of a stormwater management system to ensure that pollutants are collected, reduced, and diverted from the upper Deep creek tributary ensuring that the existing conditions are generally maintained and/or improved to that of the existing regime.

3. Outcome 1: Protection of Native Species and Communities

3.1 Natural Habitats and Flora & Fauna

No anticipated impacts.

3.2 Erosion and Sediment Deposition

No major increase in peak flows or sediment loads.

3.3 Water Quality

Sediment & erosion control measures are to be in accordance with Landcom's Managing Urban Stormwater: Soils and Construction, Vol 1 (2004).

3.4 Waterway & Floodplain Connectivity

Controlled discharge to the existing Council stormwater system on Morgan Road.

4. Outcome 2: Protection of Waterway and Riparian Vegetation

4.1 New Plants or Animals

No anticipated impacts.

4.2 Nutrient Loads

A net reduction in pollutant loads will be achieved by implementing the Stormwater Management Plan prepared by NBCE, dated 08/07/2021.

4.3 Displacing of Species

No anticipated impacts.

4.4 Contamination

Storage of chemicals, fuels or oils are not envisaged or recommended as part of the proposed development. Silt fencing and bunding is recommended for the sides and rear perimeter of the site during construction.

4.5 Protection of Bare Creek

Sediment and erosion control are to be in place during construction and are to continue to remain in place until completion of works and Council engineers approve the removal of structures. All site runoff is to be directed to a riprap within the Council owned stormwater channel on Morgan Road in accordance with the Stormwater Management Plan prepared by NBCE, dated 08/07/2021.

5. Outcome 3: Protection of Adjacent Reserve and Properties

5.1 Increased Runoff

No substantial increase in runoff resulting from the proposed development. The proposed runoff is to be diverted to Council's stormwater system on Morgan Road and thus no increase in runoff is

envisaged to discharge to the upper Deep creek tributary beyond the pre-developed runoff rate for the all-storm events up to the 1 in 100-year peak storm event.

5.2 Localised Erosion at Outlet

Site discharge is to ensure that erosion is minimised when discharging from the stormwater drainage system to Council's stormwater system on Morgan Road. Refer to the Stormwater Management Plan prepared by NBCE, dated 08/07/2021 for further detail.

5.3 Weed Exports

No disposal of garden refuse within the rear yard is envisaged or recommended.

5.4 Channel Banks

No envisaged impacts.

6. Outcome 4: Protection of Natural Ecological Processes

6.1 Streamflow and Water Quality

Impervious roof surfaces directed to the site drainage system are proposed to be directed to first flush devices prior to discharging to the rainwater re-use tank as detailed in the Stormwater Management Plan prepared by NBCE, dated 08/07/2021.

7. Outcome 5: Public Access

7.1 Public access to reserve

Public access is not proposed.

7.2 Erosion and Sediment Control

Ensure no anticipated effects on the watercourse or rear of property. During construction, a sediment and erosion control plan should be implemented in accordance with Landcom's Managing Urban Stormwater: Soils and Construction, Vol 1 (2004).

7.3 Loss of Natural Diversity

No anticipated impacts.

7.4 Preserving Natural Ecological Process

No anticipated impacts.

8. Conclusion

The proposed development will both improve the quality of runoff and reduce the total number of rainfall runoff days through additional rainwater harvesting to that of the existing site discharge regime should the proposed Stormwater Management Plan prepared by NBCE, dated 08/07/2021 be implemented. Please contact the author if further clarification is required.

NORTHERN BEACHES CONSULTING ENGINEERS P/L
Rick Wray

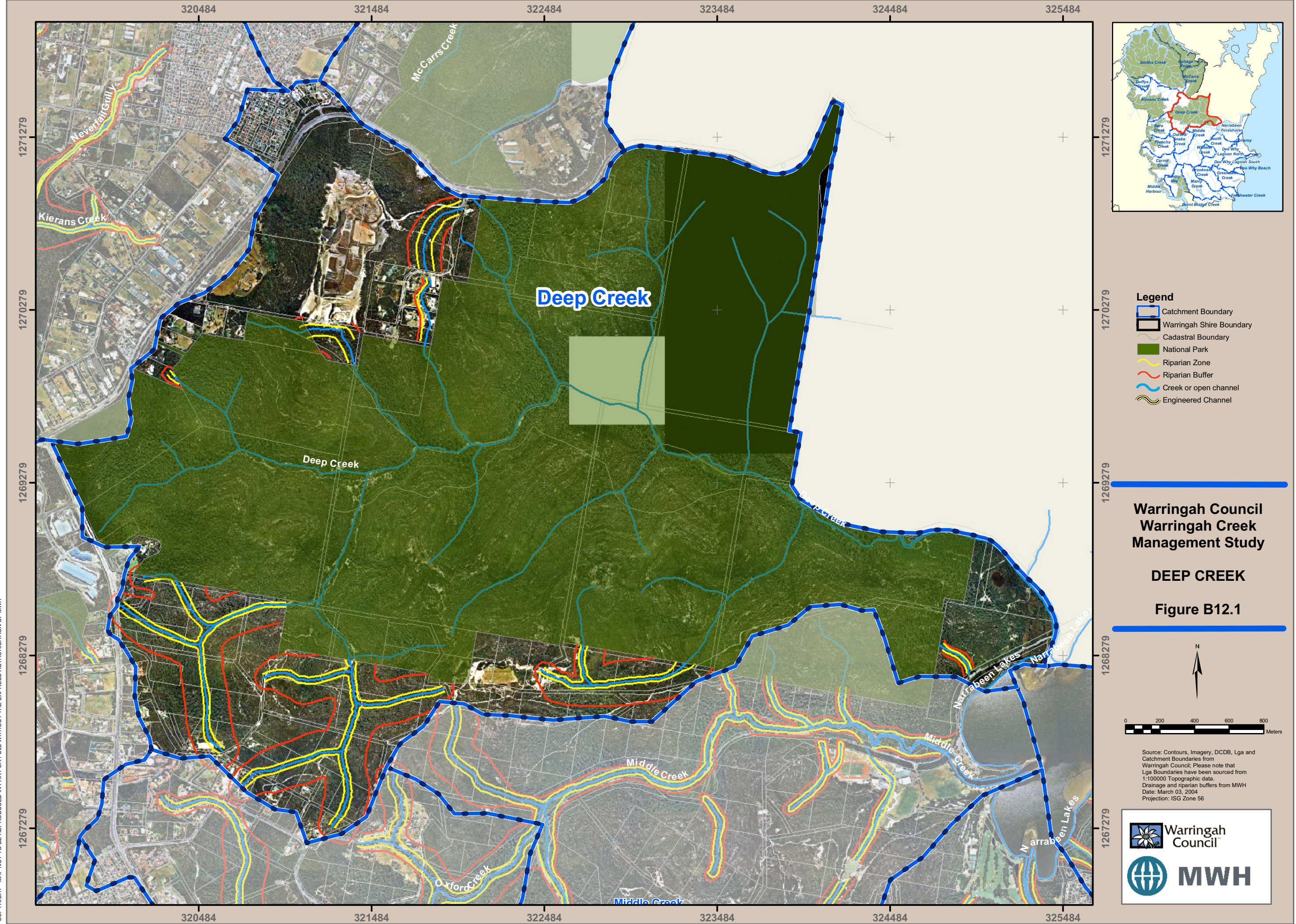


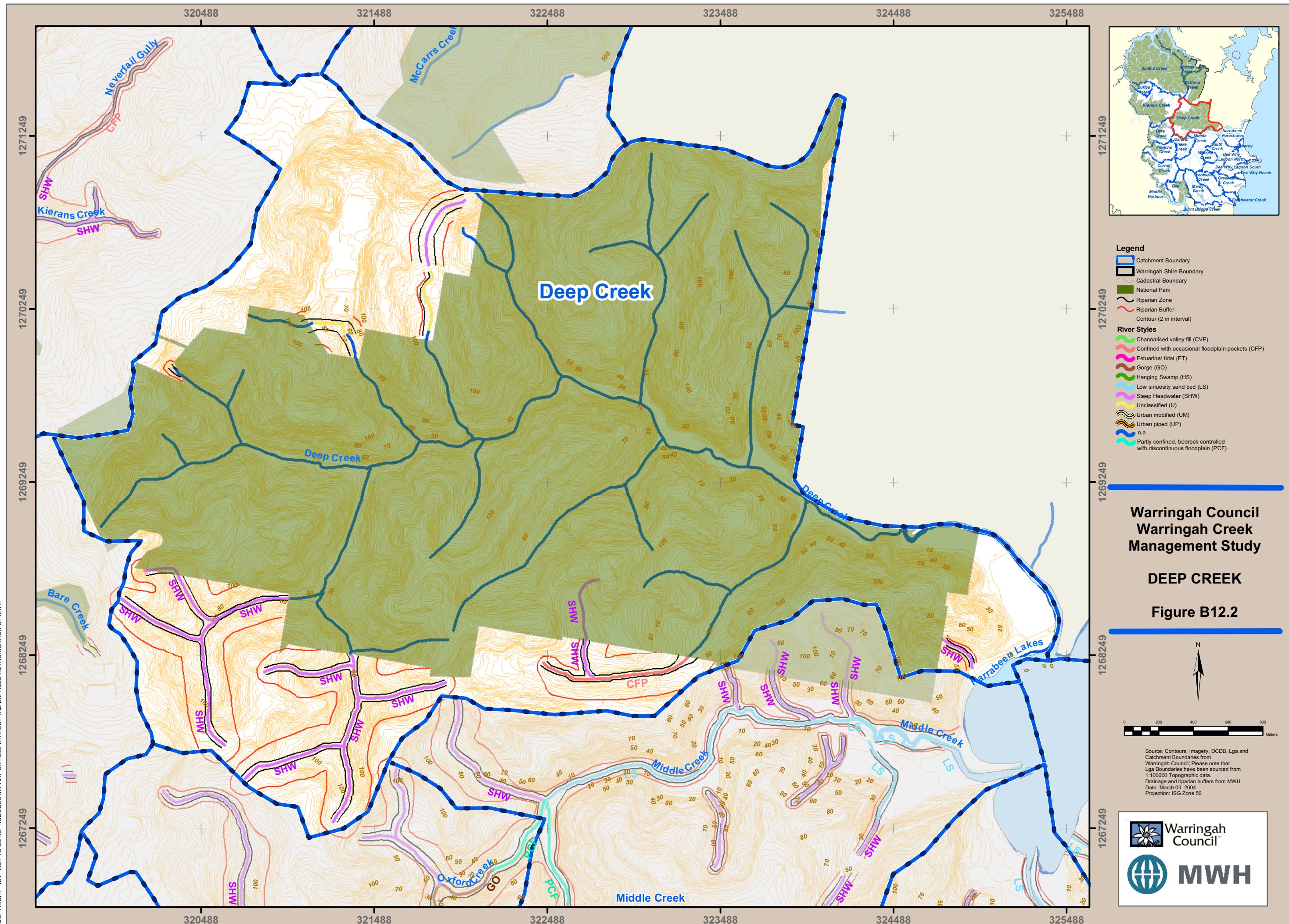
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APPENDIX A

Warringah Council Creek Management Study Information: Deep Creek





APPENDIX B

Site Architectural Plan

