

WATERWAYS IMPACT STATEMENT

For Proposed Development

at

416 Cooyong Road, Terrey Hills

Prepared for:

Rolling Stone Landscapes

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1. INTRODUCTION

Engineering Studio Pty Ltd have been engaged by Rolling Stone Landscapes to prepare a Waterways Impact Statement (WIS) for the proposed development at 416 Cooyong Road, Terrey Hills.

This Report has been prepared to provide information to enable Council to conduct an adequate environmental assessment of the proposed development works to ensure that the waterways and riparian areas within Northern Beaches Local Government Area are maintained and enhanced.

This Waterways Impact Statement follows the format set out in Northern Beaches Council's *Guidelines for Preparing a Waterways Impact Statement*.

1.1 Proposed Development

The proposal is for the construction of landscaping and minor building works within the property. This includes a new pool, gym and cabana structures adjacent to the existing dwelling and a new pavilion building adjacent to the existing tennis court.

Detailed architectural plans of the proposal have been prepared by Rolling Stone Landscapes job number Sherlock and dated 13th March, 2024.

1.2 Site Description

The planning and cadastral details of the subject site are provided in Table 1.1 while Table 1.2 summarises the geographical characteristics of the site.

TABLE 1.1 SITE DETAILS	
Location (Subject site)	416 Cooyong Road, Terrey Hill
Area	16,820m ²
Topographic Maps	Sydney 1:100000
Grid Reference	33.6852544E 151.2141432N
Local Government Area	Northern Beaches
Existing Land Use	Residential

TABLE 1.2 SITE CHARACTERISTICS	
Elevation	RL166m to RL 175m AHD
Slope	Approximate average 8-10%
Aspect	North-South from front to rear
Catchment	Kierans Creek Catchment
Drainage	Dispersal trench within the centre of the site
Vegetation On Site	Cleared/Managed Land
Vegetation Offsite	Woodland Type and Cleared Land.

2. WATERWAYS ANALYSIS

2.1 The ecological value of the subject waterway and riparian land

The subject site is situated within the Kierans Creek Catchment Area, the site is traversed within the north western corner by Neverfail Gully, a first order watercourse. An area known as the Dundundra Falls Reserve is located south of the site in which Neverfail Gully connects with Kierans Creek via the natural valleys.

Neverfail Gully is considered a natural watercourse with a riparian corridor of 10m as defined in the NSW Government Department of Planning and Environment Fact Sheet. The corridor traversed by the watercourse within the subject site has little vegetation of ecological value with the area disturbed with the current roadway crossing collecting and concentrating the discharge upstream catchment flows into the natural watercourse.

2.2 The nature and extent of proposed construction activities

The proposal is for the construction of a pool, gymnasium and cabana structure adjacent to the existing residence. These works are located greater than 50m away from the watercourse. A new pavilion structure is to be constructed adjacent to the existing tennis court. This structure has a very small footprint and will be constructed on isolated piers with a suspended floor with minimal impact to the existing landform.

An Erosion & Sediment Control Plan has been prepared for the proposed works by Engineering Studio, Job number 20212, to mitigate potential impacts to adjoining waterway areas. This document is provided in Appendix B of this report.

2.3 The nature and extent of proposed operational activities

The site will continue to be used as a single occupancy, the proposed works are considered minor construction and generally located away from the existing watercourse.

A Proposed Drainage Plan for the development has been prepared by Engineering Studio, job number 20212. This plan has been submitted as a separate document to support the development application. The future drainage infrastructure will incorporate the use of on-site stormwater dispersal trenches and sediment pits to manage stormwater flows generated by the proposed new works and disperse flow across the subject site.

2.4 The location of proposed construction and operational activities relative to the:

- i. **Riparian Buffer:** The riparian buffer is 10m from the centre of the existing watercourse.
- ii. **Riparian Zone:** The riparian zone has been shown on Engineering Studio plans with works not encroaching within the buffer zone.
- iii. **Creek Centreline:** The creek centreline has been defined on Engineering Studio plans in accordance with 1:25000 topographic map.
- iv. **Wetland:** There are no wetlands within the site.
- v. **Wetland Buffer:** No wetland buffers are proposed within the site.

2.5 Site and Surrounds – the quality of the on-site and off-site waterways and riparian lands which may be directly or indirectly affected by the development, including, but not limited to:

i. Physical characteristics of the waterway and riparian land

A watercourse known as Neverfail Creek is mapped traversing the north west corner of the subject site on the 1:25 000 Topographic Map. The watercourse is mapped as a first order watercourse in accordance with the Strahler System. This watercourse is within the Kierans Creek Catchment in Warringah Council Creek Management Study.

The riparian land within the site is considered to be managed land similar to the adjoining sites to the north and south of the subject site. The site has trees noted as woodland type but it is cleared underneath so do not satisfy a true woodland type classification.

ii. Connectivity with waterway corridors, bushland and open space

An area of land zoned RE1 Public Recreation occurs south of the site and contains the second order waterway areas. The proposed development work within the site is on cleared/managed areas and no works are proposed within the Riparian zone located in the north west corner of the site.

iii. Details of the location of threatened or endangered aquatic flora and fauna

The subject site is cleared and no threatened or endangered aquatic flora or aquatic fauna have been observed within the subject site.

iv. Existing erosion and sediment conditions

Flows through the site will be unchanged, no areas of erosion or sediment accumulation were observed.

v. Channel form, erosion rate and bank stability

The proposed landscaping works to the site are generally located away from the existing water course. The new pavilion structure will be constructed on isolated piers supporting a suspended floor structure. The piers will assist to stabilise the local batter and no works are within the riparian zone or watercourse to impact channel form.

vi. Stormwater discharge points and stormwater treatment measures

An Erosion & Sediment Control Plan has been prepared for the proposed works by Engineering Studio, job number 20212, to mitigate potential impacts to adjoining waterway areas. This document has been provided as separate documentation with the development application.

A Drainage Plan for the proposed works has been prepared by Engineering Studio, Job number 20212. This plan provides details for treatment of runoff from the new works and demonstrates drainage controls within the site to manage stormwater.

3.ASSESSMENT OF IMPACTS

The proposed development has been designed to minimise the impacts on the adjoining area and improve water quality for flows leaving the site. The following possible impacts on Keirans Creek and its surrounding riparian area are assessed below:

TABLE 3.1 DEVELOPMENT IMPACT ASSESSMENT		
Impact description	Likely Impact Y/N	Comment
Impact upon water quality	N	Stormwater dispersed on site and generally to high side of property away from watercourse. Minor new pavilion structure adjacent to watercourse will have nil impact on overall site runoff.
Impacts on channel form, erosion rate and bank stability	N	The natural watercourse crosses the site within the north western corner. The new pavilion structure to be constructed adjacent to this area will not impact on the channel form and will assist bank stability.
Impacts on stormwater discharge points and stormwater treatment measures	N	Water flow from the site will be managed by the utilisation of onsite dispersal trenches, existing outlets will also be inspected during the works to ensure suitable construction to satisfy Council and NSW Office of Water requirements
Ecological impacts of the development	N	The site is cleared and categorised as 'managed land' the proposal is not likely to have a ecological impact.
Landscape impacts of the development	N	A landscape plan has been prepared for the proposal in accordance with Council's requirements and submitted as separate documentation to this report.
Flood impact assessment	N	The site is not shown to be affected by mainstream flooding as per Councils Flood Hazard Map. The proposed works are located around the existing dwelling and on the high side of the property – these are not considered to impact any localised flooding. The proposed pavilion is to be built on elevated posts with no filling or change of grade which would impact on the current flood regime in this area.
Bank stability assessment demonstrating the building and development is not at risk	N	A bank stability assessment has not been undertaken for the site for the Development Application. The proposed pavilion will be supported on isolated bored piers with embedment into suitable strata. This type of construction will provide a suitable foundation support for the minor new structure and not impact on the existing bank form or stability.
The extent of native vegetation proposed to be removed	N	The site is generally considered 'managed land' and no clearing of native vegetation is required.
Any modification to natural creeklines or overland flow.	N	As per the flood impact assessment no change to the current natural watercourse or flood regime is expected from the development.

4. PROVISION OF MITIGATION MEASURES

Outcome 1: Protecting native species and communities.

Performance criteria	Acceptable mitigation measures
Maintain natural habitats	The site is generally cleared and considered managed land and therefore no natural habitats exist.
Provide fauna movement routes	The site is currently cleared and does not contain areas for fauna movement routes
Prevent unnatural erosion or sediment deposition	The proposal will maintain the current management of external stormwater flows through the site, and capture of internal stormwater pollutants through the utilisation of on-site dispersal trenches and sediment pits.
Maintain acceptable water quality	Water quality discharging from the site will be maintained through the use of on-site dispersal trenches and sediment pits
Maintain connectivity between waterways and floodplains	The site is currently cleared and stormwater flow through the site is along the natural watercourse. The proposed works will not impact on the current watercourse up to and including the riparian buffer, any external flows will therefore be unchanged.

Outcome 2: Prevent loss of natural diversity through protecting waterway and riparian vegetation (including non-native vegetation).

Performance criteria	Acceptable mitigation measures
Avoid introducing plants or animals which may displace natural species	The introduction of plants or animals to the site which may displace natural species within the waterway and riparian area is not proposed.
No increase in nutrient loads to riparian soils and waterways	Nutrients will be filtered from stormwater prior to discharge through the use of onsite dispersal trenches and sediment control pits which will act as first flush devices from the receiving hardstand areas.
Avoid displacing species by habitat changes	Waterway and riparian habitats will not be subject to direct impacts as a result of the proposal.
Protect natural areas from contamination	Contamination of natural areas is not likely to occur as the site is managed land with no riparian vegetation present within the proposed work areas.
Prevent the loss of any rare or threatened natural features	No rare or threatened natural features are present.
Protect downstream protected areas, such as National Parks	Suitable stormwater management measures as shown on Engineering Studio Stormwater plans, job number 20212, are proposed to protect downstream environments.

Outcome 3: Minimise damage to public and private property by waterway processes through maintaining the relative stability of the bed and banks.

Performance criteria	Acceptable mitigation measures
Avoid increases in peak channel flows and sediment exports for events smaller than 2 year Average Recurrence Interval (ARI)	On-site management of stormwater runoff will be undertaken through the utilisation of onsite dispersal trenches with sediment pits. These will be suitable to treat regular minor storm events.
Avoid local erosion at stormwater outlets	Stormwater outlets will be constructed to mimic natural drainage conditions and suitable spreaders installed to prevent localised erosion.
Avoid export of weeds from private properties into waterways	No disposal of garden refuse is to occur in riparian areas.
Channel banks are not over steepened	No change to channel banks are proposed on site.
Channel banks are stable	No change to channel banks are proposed on site.

Outcome 4: Preserve natural ecological processes

Performance criteria	Acceptable mitigation measures
Stream flow and water quality are natural	The stormwater enters the site via the road outlet from below Cooyong Road, this area of the site is to remain unchanged. Flow generated within the site will be managed with onsite dispersal trenches and sediment control pits with trash screens.
Aquatic and riparian vegetation are undisturbed and unmodified	There is no works proposed within the riparian corridor on the site. The existing vegetation at the proposed discharge locations is all managed land.
Aquatic and riparian fauna habitat and movement corridors are retained	There is no works proposed within the riparian corridor on the site.

Outcome 5: Create opportunities for public access and recreation in waterway corridors

Performance criteria	Acceptable mitigation measures
Provide public access along creek corridors where appropriate	There are no works proposed adjacent or within the riparian corridor and there is no creek present within the site. Access to offsite creek corridors will not be affected.

5. CONCLUSIONS

Based on the site inspection and information provided in this report it is concluded that:

- i. Stormwater flows from the external catchment draining through the site are currently discharged onto the site from under the roadway and flow with the natural watercourse at the north-western corner of the site;
- ii. No works are proposed within the riparian corridor within the site and on-site riparian buffers have been shown on Engineering Stormwater plans;
- iii. Water quality and flows are to be managed with onsite stormwater dispersal trenches and sediment pits in accordance with the Proposed Drainage Plan prepared by Engineering Studio, job number 20212, for the proposal;
- iv. Disturbed areas associated with the installation of onsite stormwater discharge points are to be rehabilitated following construction in accordance with the landscape plan; and
- v. The proposed development is likely to have a nil or negligible impact on the local waterways.

We trust the above and attached clarify the situation, if you have any further queries please contact the undersigned at your convenience.

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REFERENCES

Warringah Council: Waterways Impact Statement Guidelines

Architectural plans prepared by Rolling Stone Landscapes, Job number Sherlock dated 13th March 2024

Warringah Council Creek Management Study, prepared by MWH dated March 2004.

NSW Government DPI Office of Water (2012) Guidelines for Controlled Activities on Waterfront Land.