

18 December 2024

NL221237

Transport for NSW
Pat Patel
Level 37 680 George Street
Sydney NSW 2000

Dear Pat,

Re: DA/598/2024 - Concept Development and First Stage Of Development – Subdivision Lot 1 DP 1286424 65 Glendale Drive, Glendale NSW 2285

Northrop Consulting Engineers have been engaged by TfNSW on behalf of the Transport Asset Holding Entity to provide civil engineering services to the proposed development at 65 Glendale Drive, Glendale (Lot 1 DP 1286424). As part of their assessment, Lake Macquarie City Council (LMCC) have requested further information, described in their Request for Information letter dated 22nd August 2024 (the RFI). Northrop responses to the relevant items are provided below.

1. Biodiversity

1.1 “Redesign of proposed Lot 32 shall be considered to avoid further removal of native vegetation. The lot contains vegetation mapped as EEC and is susceptible to water logging and semi-permanent water standing which may not be suitable for development. Consideration should be given avoid the development of proposed Lot 32 entirely.”

Northrop Response [18.12.2024]:

The contours in Lot 32 shows the existing surface falls towards a drainage swale adjacent Glendale Drive that the existing site naturally falls to, see Figure 1 below. No works are proposed in this swale and therefore no impact on existing hydrology.

1.2 Basin shall be removed form C2 lands entirely. If it is demonstrated that alternate locations are not possible (must be discussed), they must be included within the BDAR as direct and indirect impacts with all plans and calculations of impacts amended accordingly.

Northrop Response [18.12.2024]:

Basin C has been realigned to avoid C 2 land, noting that a small extent of batter will extend into the C2 zone. Refer to drawing CDA-5.01[2]. This has been addressed in the BDAR.

Basin B has been located to suit the topographical site constraints. The natural terrain is relatively flat along the length of the perimeter road MC01, which has been located adjacent the C2 zone for bush fire access. It is therefore not feasible to grade the length of the road at a single grade to a single low point. We have therefore split the length of the road into a number of high and low points to maintain the road surface above the flood level but as low as possible above natural surface and at a minimum longitudinal grade. At each low point, a treatment device is required to treat surface runoff and to achieve stormwater treatment targets. A low point is required in MC01 at around chainage 200, which led to the incorporation of Basin B at its current location. Several alternate options were considered but ultimately abandoned as described below.

- Push the perimeter road MC01 north adjacent Lot 102 and 103 to fit Basin B outside of the C2 zone. This resulted in narrow, irregularly shaped blocks that were not optimally functional or commercially marketable.
- Locate Basin B south of Lot 101, however this resulted in an excessive length of road at a single grade, resulting in an increase in fill level of 1.0m for the majority of the site.

The extent of batters encroaching into the C2 was discussed during design development and agreed by the design team as an appropriate outcome. Some alternatives were considered and ultimately abandoned, as discussed below.

- Replace the batter with retaining walls however this was abandoned due to cost constraints and the disconnection with retained vegetation in the C2 zone.
- Shift the perimeter road north to keep batters outside of the C2 zone. This resulted in a significant loss of site yield and Lot 102 and 103 becoming even narrower.

As a result, it is the belief of the design team and the amended design, as reflected in the revised civil works plans achieves a realistic blend of design efficiency, marketability and minimisation of ecological impact.

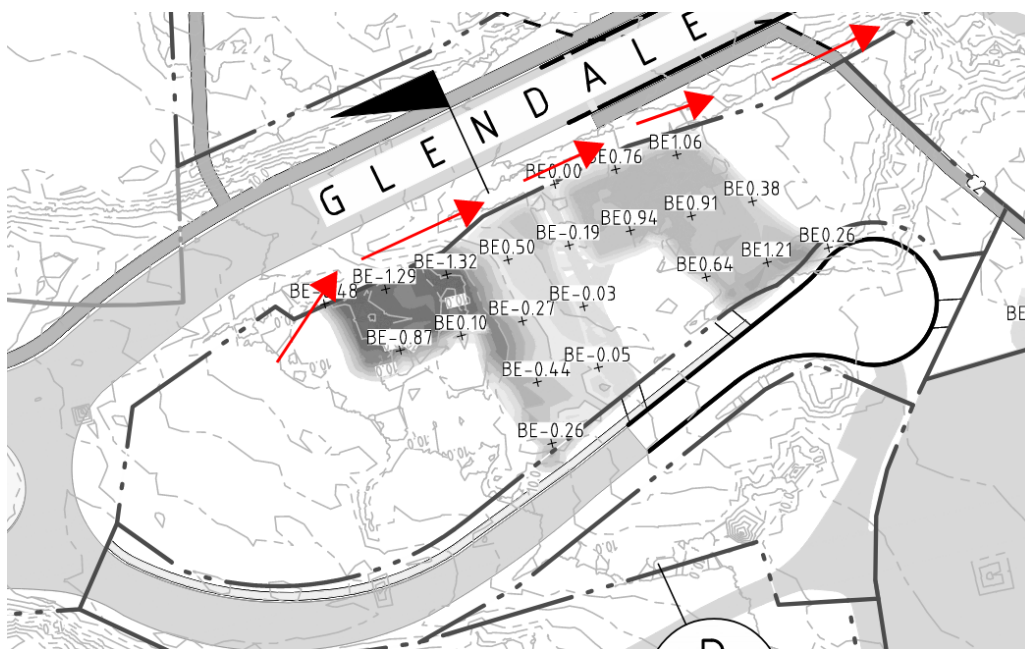


Figure 1 – Surface Drainage of Lot 32

1.3 “The impacts of the shared path should be discussed and assessed, while it is understood that detailed design is not proposed at this stage it needs to be demonstrated it can be feasibly achieved”.

Northrop Response [17.12.2024]:

The proposed alignment is shown on the civil works plan CDA-5.03 and a typical section is shown on drawing CDA-9.01 showing how retaining could be integrated into the section to account for level changes. Based on the LIDAR survey of the site, most of the alignment is relatively flat. There are two locations requiring retaining walls and a local pedestrian bridge which have been added to drawing CDA-5.03[2]. It is believed that longitudinal gradient could be kept to maximum 1:14 and crossfall to maximum 1:40 with the retaining walls shown in the typical section.

1.4 “Asset protection zones and batters are not supported within C2 zoned land”.

Northrop Response [17.12.2024]:

Please refer to response to Item 1.2 above and ecologist response.

2. Active Transport

2.1 “Council does not have plans to build a path and bridge over Winding Creek to Glendale Drive (the North South Pedestrian Link). The path and bridge are identified within the pedestrian network strategy and the Glendale Town Centre Area Plan however are required to be provided as part of the future development as the link will provide access between the development and Glendale centre”.

Northrop Response [17.12.2024]:

The path and bridge over Winding Creek have been removed from the proposal and is reflected in the amended civil drawing set, refer to drawing CDA-1.21[2].

2.2 “The proposed pathway network is to be reconsidered to ensure future residents are not required to cross major roads multiple times to access destinations. Where existing pathways are available missing links should be identified and safe access to all stages of the development is to be identified”.

Northrop Response [17.12.2024]:

The proposed pathway network has been adjusted to provide connection to the Hunter Sports Centre, in consultation with Council, refer to amended civil drawing CDA-5.03 [2].

3. Traffic

3.1 “The upgrades shown to Main Road on the preliminary concept plans should be extended west to Lake Road to ensure Main Road can function logically and safely as a dual carriageway road between Lake Road and the Stevens Avenue intersection. This extension will be required to ensure the intersections can safely operate together with adequate capacity. Note: Main Road upgrades are to include pathways”.

Northrop Response [17.12.2024]:

Northrop’s responses should be read in conjunction with the Traffic Engineers response. The civil plans have been amended to reflect this request, refer to CDA-6.01[2].

3.2 “Our preference is for the proposed intersection of lot 1 and Glendale Drive to be signalised. This is to ensure safe crossings can be provided at the intersection for future residents in all directions. If this is not considered suitable, a signalised Pelican Crossing is to be provided south of Winding Creek on Glendale Drive where the regional shared pathway is proposed to cross”.

Northrop Response [17.12.2024]:

The civil plans have been amended to reflect this request, refer to CDA-6.02[2].

4.0 Water NSW

“Clarify the number of outlets (stormwater drain, flood mitigation channels) to the stream and their location and specifications/drawings”.

Northrop Response [17.12.2024]:

Please see attached CDA -5.01[2] and CDA-5.02[2] - Stormwater Management Plan Sheet 1 and 2 for the location and specification of outlets. Each outlet will consist of a headwall and scour protection. Listed below are the number of outlets entering winding creek:

- 5 Headwalls

- 3 Bypass swales.

“Clarify how the stormwater quality (from contamination, erosion/sediment) will be maintained before being drained into the stream”.

Northrop Response [17.12.2024]:

Councils’ stormwater quality targets are met through various treatment measures including biofiltration basins, detention basins and proprietary water quality devices. Stormwater management measures are detailed in the Civil and Stormwater Concept Design Report prepared by Northrop revision D dated 15 February 2024 and on drawings CDA-5.01[2], CDA-5.02[2] and CDA-5.03[2].

Erosion and Sediment are mitigated by a series of controls including clean and dirty diversion swales, sediment basins, sediment fences, and pit filters. Concept erosion and sediment control plans are detailed in drawing CDA-2.01[2] and CDA-2.02[2].

We trust the preceding responses and associated documents address Council’s concerns, however, please do not hesitate to contact the undersigned should you require any further clarification.

Yours sincerely,



Chris Piper

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For Northrop Consulting Engineers