

14 May 2025

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Request for Further Information - DA2 Mod 12 and DA3 2 Mod 10 Penrith Lakes

This letter provides a response to the Department of Planning, Housing and Infrastructure's (DPHI) Request for Further Information, dated 16 April 2025, in relation to the Penrith Lakes Scheme (DA2-Mod-12 and DA3-Mod-10). Specifically, it addresses the matters set out in Attachment A, Points 1 to 4, which seek clarification on the following:

- (1) Public submissions
- (2) Description of landform modification
- (3) Visual impacts
- (4) Stormwater visual impacts

Our detailed responses to each of these items are provided below.

1. Public submissions

Request

A response to matters raised in public submissions received during the exhibition.

Response

As confirmed by Erin Murphy in her email dated 17 April 2025, the Department has advised that a finalised Response to Submissions Report, including responses to public submissions, may be submitted separately to this RFI.

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2. Description of landform modification

Request

A bulk earthworks plan, provided in a format that assists with understanding the depth of fill proposed to be placed across the site (for example, a contour plan and/or heat map).

Response

We've prepared additional cut/fill heat maps (**Appendix A**) comparing the approved levels under DA2 Mod 11 and DA3 Mod 9 with the proposed levels in DA2 Mod 12 and DA3 Mod 10.

The drawings show the progressive import of material south-to-north across the site to form the final landform. Generally, less fill is needed in the south and more in the north. Specifically:

- *Southern and central areas (SK212)*: Ground levels will rise by 0–1.5 m across most areas, with some isolated increases up to 2.5 m.
- *Northern area (SK213)*: Ground levels will rise by 1–2.5 m across most areas, with some spots increasing up to 3 m.

The site extends about 3.5 km north to south. The surface is designed to maintain a minimum 0.5% grade to allow gravity drainage, with isolated steeper sections (up to ~3.5%) due to the site's shape.

Western Sydney Engineering Design Manual ([Link here](#)) states:

- Filled areas are to be graded at a desirable grade of 1.0%
- Filled areas are to be graded at a minimum grade of 0.5%

This requirement can be found under section 3.2 – Bulk Earthworks and site regrading.

A typical cross-section is also provided (**Appendix A**), showing the permanent water level and the 1:100-year and 1:500-year flood levels. The design sets the batter top at the 1:500-year level, with the land graded upward from there.

3. Visual impacts

Request

Information that describes how you propose to mitigate anticipated visual impacts. The Visual Impact Assessment (VIA) concludes that there will be some impacts. The impacts of most concern are those that have been identified as moderate impacts in the VIA. These relate to one landscape character zone called 'LCZ 2 - Nepean River and floodplain' and one viewpoint called 'Viewpoint 2 - Castlereagh Road (north)'.

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The VIA identifies some possible mitigations that would assist with preserving views of the escarpment/floodplain interface. It is noted that the suggested measures would ultimately reduce the area available for fill.

Please advise what measures you are proposing to mitigate the impacts and what this means for the overall quantity and locations of fill you are seeking to place on the site.

Response

As outlined in the VIA report, the current proposal is expected to result in moderate visual impacts along a northern section of Castlereagh Road (Viewpoint 2), and localised landscape character impacts to the Nepean River floodplain (LCZ-2). This reflects the high sensitivity of the visual receptor and landscape zone, as highlighted in the DCP, and the magnitude of impact, primarily due to view loss of the floodplain and its interface with the Blue Mountains escarpment. Further analysis has since been carried out to assess the effectiveness of proposed mitigation measures and the likely residual visual and landscape impacts following their implementation.

Alterations to batter gradient: Figure 1 below shows a 1:20 batter gradient in green facing Castlereagh Road compared to the original 1:6 gradient included in the modification application as shown in purple..

The result of this is shown in Figure 2 comparing the top of the purple polygon (1:20) against the dotted line (1:6). As shown, implementing this shallower slope does only marginally reduce view loss of the Blue Mountains escarpment, the floodplain expanse and escarpment junction (key elements of the viewscape) are still obscured. Although the 1:20 batter is shallower than the original 1:6 slope, it still forms an elevated landform that interrupts sightlines from Castlereagh Road. Since the floodplain and escarpment junction lie low in the landscape, even modest increases in ground level are sufficient to obscure these key view elements. As a result, the flatter gradient offers only a marginal improvement in visibility and does not meaningfully reduce visual impacts, with the rating remaining ‘moderate’.

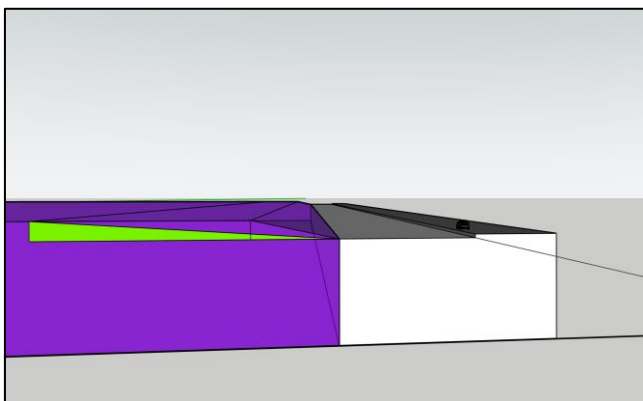


Figure 1: 1:20 slope option

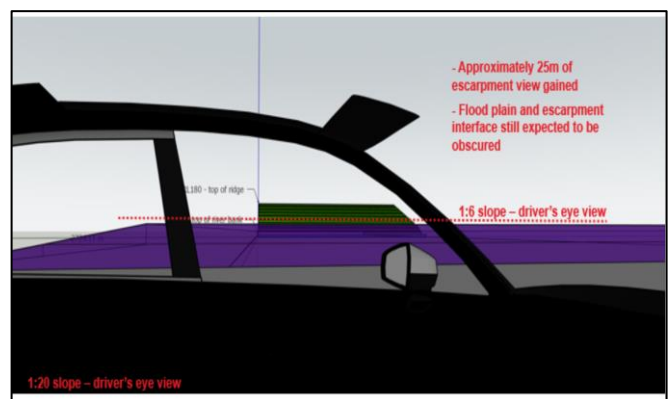


Figure 2: View loss comparison between 1:6 and 1:20 batter slopes as viewed from Castlereagh Road

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Alterations to batter form: The visual impact assessment noted that altering the batter face to create a more organic, naturalistic form, rather than a uniform engineered slope (see Figure 3), would slightly soften its visual appearance. However, this mitigation would not change the extent of view loss, as the landform's height and position would continue to obstruct key elements of the view.

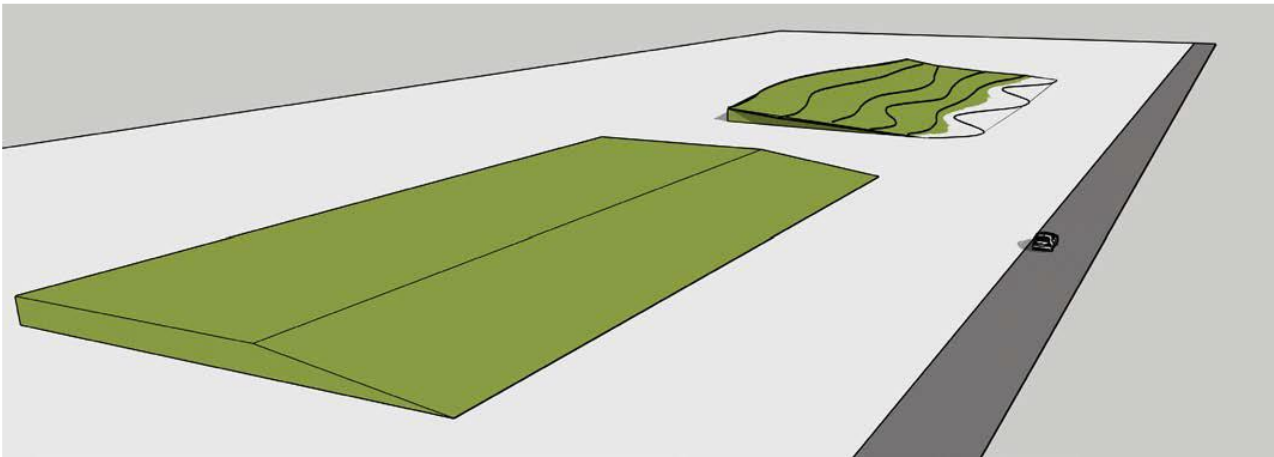


Figure 3: Comparison between a uniform 1:6 slope and more naturalistic embankment (scale indicative only)

Conclusion: While the mitigation measures explored, namely flattening the batter slope and softening its form, would offer some aesthetic benefit, they do not result in a material reduction in visual impact. The key view elements, including the floodplain and escarpment interface, would remain largely obscured due to the continued presence of an elevated landform within the sightline. Importantly, implementing these measures would significantly reduce the area available for fill, compromising the earthworks and flood immunity strategy, and overall functionality of the site without delivering a proportionate visual benefit. For these reasons, on further consideration, the suggested mitigation is not considered reasonable or effective in the context of the project objectives and constraints.

It is also important to recognise that the form and extent of the proposed landform is consistent with what has been previously approved by the Department over multiple stages of this development as per the example below in Figure 3. The level of visual impact in this location has been considered and endorsed through successive applications over the past 15 years. In this context, we are not introducing new impacts but rather seeking consistency with established approvals. The relevant slide from the earlier presentation is reattached for reference. This further demonstrates that the proposed mitigation is not considered reasonable or effective considering the project's objectives, functional requirements, and the planning precedent already established.

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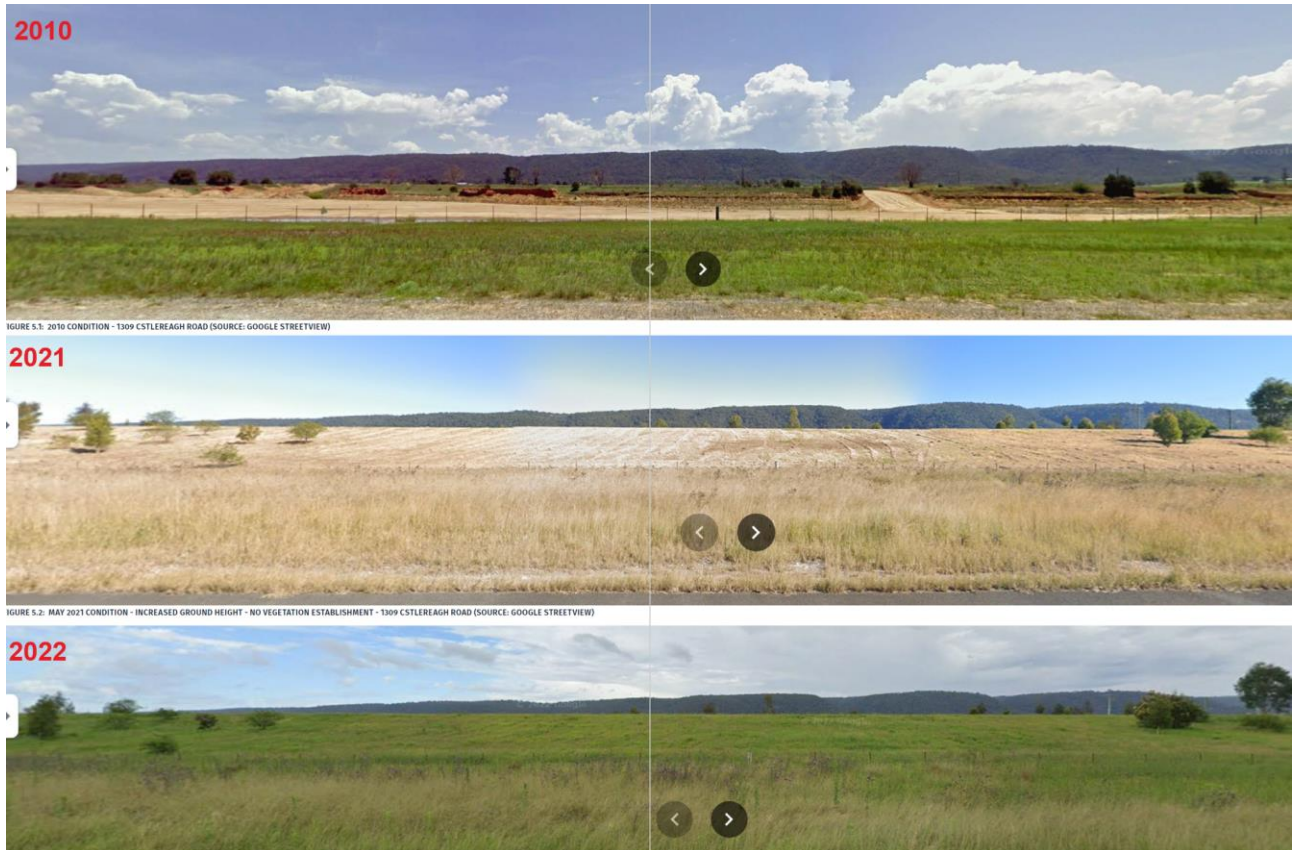


Figure 4: Comparison between pre-existing visual condition (2010) and VENM importation (2021) associated with approved DA3 when viewed from a section of Castlereagh Road

4. Stormwater management

Request

Further information that demonstrates how stormwater is proposed to be managed around the Poplars and McCarthy's Cemetery items to prevent physical damage to their heritage values, including addressing matters raised by Heritage NSW concerning management of stormwater.

Response

Cemetery: The area surrounding McCarthy's Cemetery is currently free draining via a combination of open drains, swales and temporary pit and pipe infrastructure, directing stormwater northward into Lake A (the location of which is shown on Figure 5). This approach will be retained while material is being imported to maintain existing hydrological function and prevent ponding or erosion near the heritage item. Following completion of the surrounding landform raising, the drainage layout will be reconfigured to ensure surface runoff is captured and conveyed away from the cemetery, with graded swales and, where required, subsurface drainage (e.g., pit and pipes) ensuring the site remains free draining. This design minimises the

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risk of water ponding around or within the cemetery boundary, which could otherwise lead to soil instability or damage to headstones and other historic features. These measures address concerns raised by Heritage NSW regarding the need to manage surface flows in a way that avoids undermining the structural integrity and visual setting of the cemetery.

Poplars: Currently, the Poplars site experiences ponding, particularly on its eastern side due to low-lying topography. To prevent this, a new surface drainage system is being established, consisting of a swales extending from the northeast corner of the site westward towards Lake A. These swales are being shaped to maintain gentle gradients, consistent with the heritage landscape setting. Where necessary, temporary or permanent pit and pipe infrastructure will be introduced to prevent water retention in proximity to the Poplars. These drainage measures have been designed to reduce the risk of prolonged soil saturation or undermining of the building foundations.

Conclusion: Both drainage strategies have been designed to protect the physical condition, stability, and heritage setting of the McCarthy’s Cemetery and the Poplars. By preventing waterlogging, erosion, and changes in groundwater levels, the proposed stormwater management approach responds directly to concerns raised by Heritage NSW and reflects sound practice in heritage-sensitive stormwater design. Ongoing monitoring and adjustments to drainage performance during and post-construction will also be undertaken to ensure these outcomes are maintained.



Figure 5: Showing the location of Lake A

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We trust that the above information clarifies the above matters raised by the Department. We remain committed to working collaboratively with the relevant agencies to ensure all considerations are appropriately addressed as the project progresses. Please don't hesitate to contact us should further detail be required.

Chris Fay
 Technical Director and Market Lead

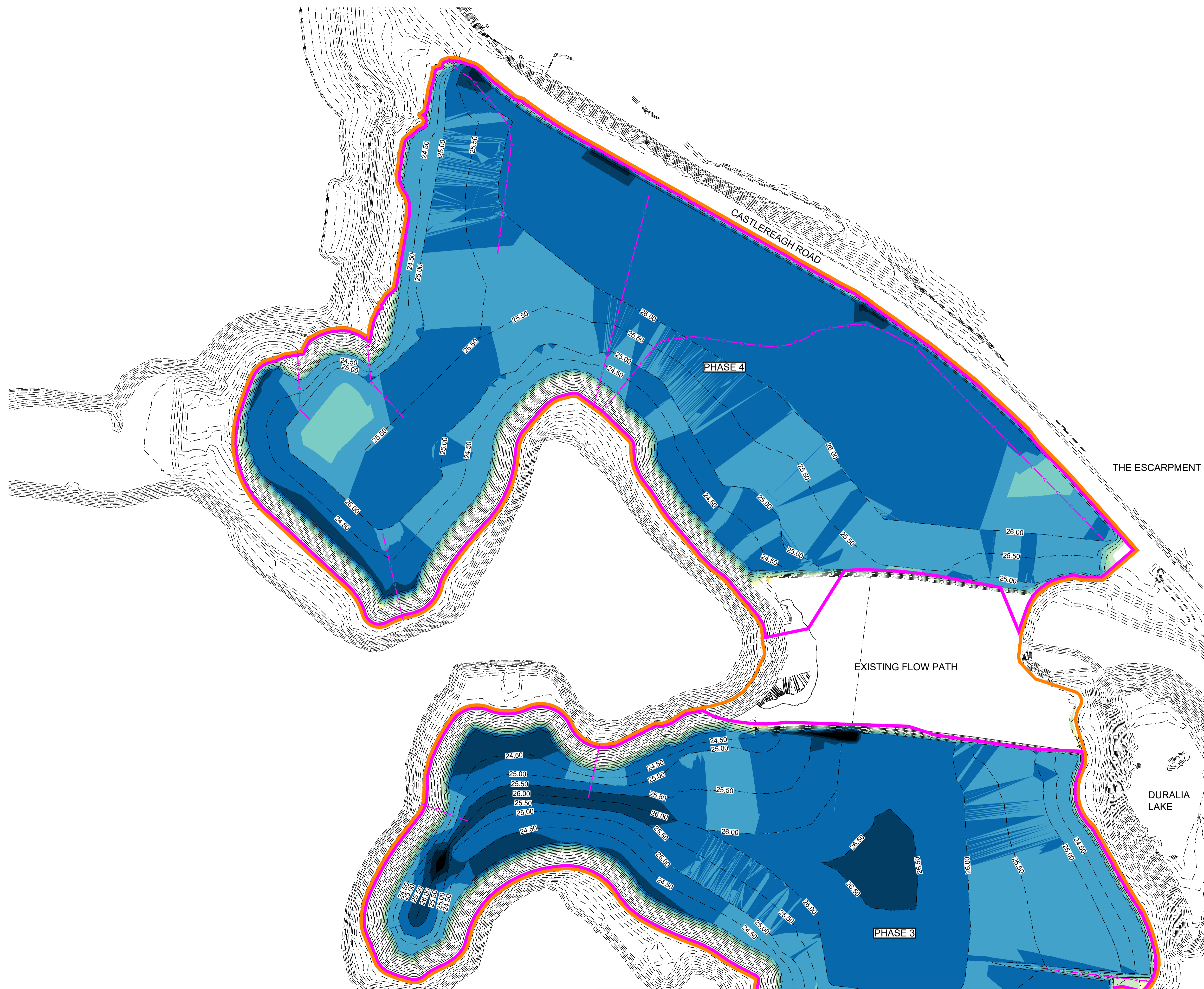
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Encl. Appendix A | CoFAntour Heat Map

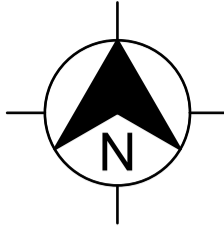
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Appendix A | Contour Heat Map

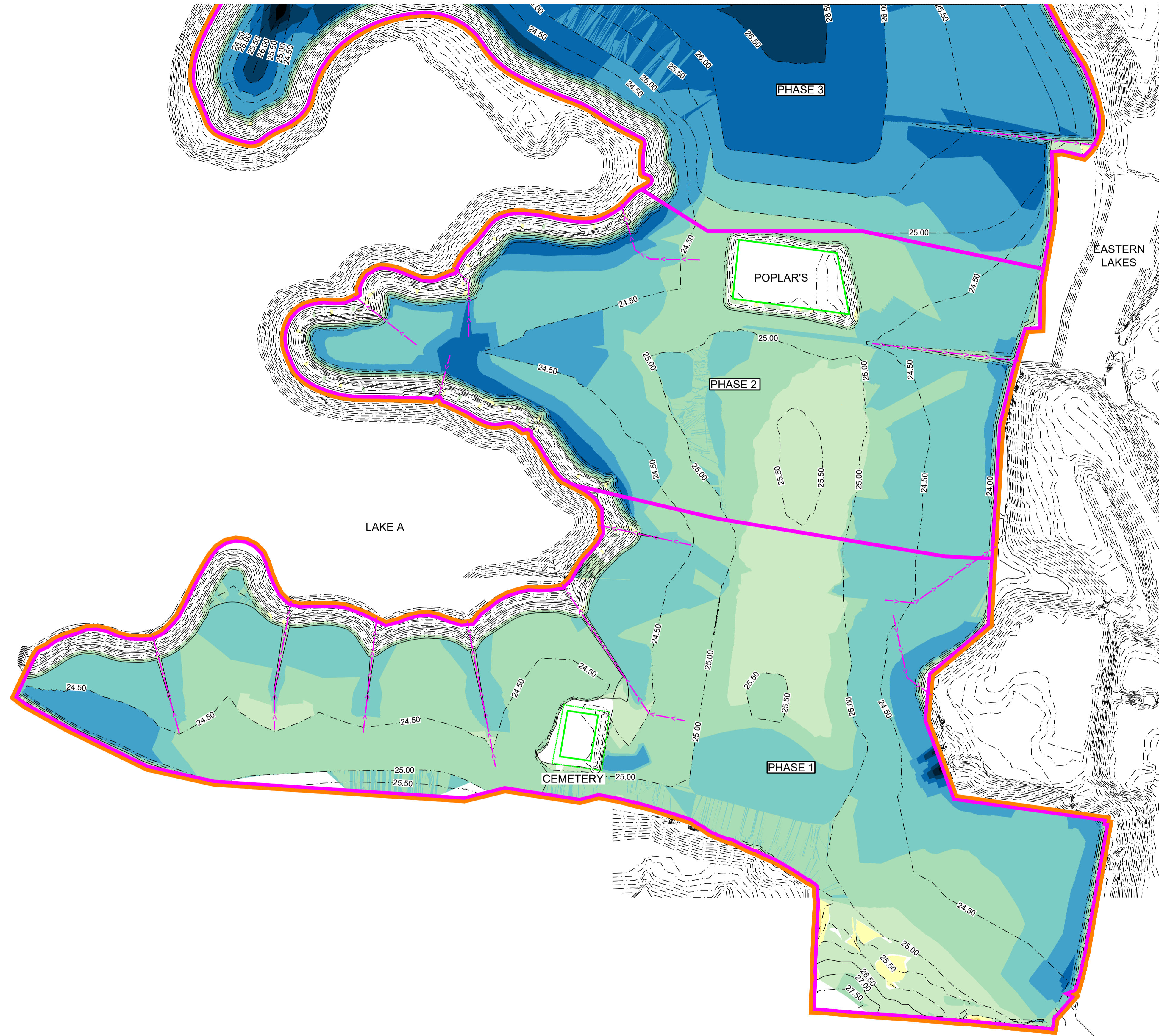


DIFFERENCE RANGE		Colour
Lower_value	Upper_value	
-2.0	-1.5	Orange
-1.5	-1.0	Light Orange
-1.0	-0.5	Yellow
-0.5	0	Light Green
0	0.5	Green
0.5	1.0	Light Blue
1.0	1.5	Blue
1.5	2.0	Dark Blue
2.0	2.5	Very Dark Blue
2.5	3.0	Near Black
3.0	3.5	Black
3.5	4.0	Black



REFER TO DRAWING SK212 FOR CONTINUATION

REFER TO DRAWING SK213 FOR CONTINUATION



DIFFERENCE RANGE		Colour
Lower_value	Upper_value	
-2.0	to -1.5	Orange
-1.5	to -1.0	Light Orange
-1.0	to -0.5	Yellow
-0.5	to 0	Light Green
0	to 0.5	Green
0.5	to 1.0	Light Blue
1.0	to 1.5	Blue
1.5	to 2.0	Dark Blue
2.0	to 2.5	Very Dark Blue
2.5	to 3.0	Black
3.0	to 3.5	Black
3.5	to 4.0	Black

