

16 September 2025

Murray Jay
Department of Planning, Housing and Infrastructure

by email: murray.jay@planning.nsw.gov.au

Dear Murray

Rezoning Review Briefing Note | Planning Proposal (PP 2021-7146) Part Sub Precinct 5, South Creek West Land Release Area, Cobbitty – Bringelly

1 Overview

This letter has been prepared by Urbis Ltd (**Urbis**) on behalf of JJ Cobbitty Developments Pty Ltd (**JJCD** or **Proponent**) the proponent of PP 2021-7146 (the **Planning Proposal**) which is seeking to rezone Part Sub Precinct 5 in the South Creek West Land Release Area, Cobbitty (**the Site**).

A Rezoning Review Request (RR-2024-33) was made with the Department of Planning, Housing and Infrastructure (DPHI) on 26 September 2024. It was formally lodged on 21 October 2024. This was following Camden Council (**the Council**) being unable to forward the Planning Proposal to DPHI for Gateway Determination.

The Sydney Western City Planning Panel (**the Planning Panel**) was appointed as the Planning Proposal Authority in accordance with Section 3.32 (2) of the Environmental Planning and Assessment Act 1979 (EP&A Act). A briefing of The Planning Panel was held on 29 January 2025.

The planning proposal was formally considered by the Planning Panel at its meeting of 13 February 2025, where it was confirmed that the proposal had both site specific and strategic merit. The Planning Panel recommended that prior to submitting the Planning Proposal for Gateway determination, the Planning Proposal should be revised to address:

1. The outcome of the Camden Council peer review of geotechnical studies of the ridgeline.
2. The outcomes of further consultation with the Department of Climate Change, Energy, the Environment and Water (DCCEEW) on the proposed arrangements for stormwater.

These matters have now been suitably resolved, as set out in this letter, and the matter is now ready for further consideration by the Planning Panel ahead of being considered for Gateway determination.

As part of the consultation and review process in the Rezoning Review, the Department has also sought advice from the Government Architect of NSW (GANSW). This advice has informed some further updates to

the ILP and in turn the Planning Proposal package, now back before the Planning Panel. As part of a comprehensive update, this letter should be read in conjunction with the following Appendices.

- **Appendix A** – Response to Council Comments dated 4 July, 2025
- **Appendix B** – [Updated ILP and SEPP Maps](#) (and [Riparian Corridor Validation by ELA](#))
- **Appendix C** – [Geotechnical Letter and Douglas Partners Response](#)
- **Appendix D** – [JWP Stormwater Advice Letter](#)

It is noted that the ILP updates have been informed by robust technical advice from the proponent's consultant team including J. Wyndham Prince (JWP). Updates to their respective consultant reports, amongst all other relevant technical studies will be provided to The Planning Panel, post-gateway determination and prior to finalisation.

2 Summary of Planning Proposal

The Proponent c/- Always Consultancy and Urbis trusts that The Planning Panel is familiar with the Planning Proposal. None-the-less a short summary of the Planning Proposal and key messages are outlined below.

The land comprising the site, otherwise known as Sub-Precinct 5 was identified as suitable for urban development under the State Environmental Planning Policy (Sydney Region Growth Centres) in 2006, now under the State Environmental Planning Policy (Precincts – Western Parkland City) 2021 (Western Parkland city SEPP). Sub-Precinct 5 was released for rezoning on 2 November 2019.

The Planning Proposal seeks to amend the Camden Local Environmental Plan 2010 (CLEP 2010), and the Western Parkland City SEPP by amending the land use zoning map from RU1 Primary production to a mix of land uses capable of facilitating urban development, with associated changes also sought to the height of building, minimum lot size and density maps. It is also proposed to rezone parts of the site under the Riparian and Native Vegetation Protection Map to preserve and protect some of the site's natural assets, as well as zone land intended for a public purpose (i.e., Open Space, School Land) under the Land Reservation Acquisition Map.

The Planning Proposal will facilitate development in the order of 3,197 residential lots. It contributes to the strategic vision of the South West Growth Area and South Creek West Land Release Area and addresses a critical missing piece in the urban fabric between Lowes Creek Maryland, Cobbitty and Oran Park.

3 Project Background

The Planning Proposal has an extensive project history, leading up to its consideration for Rezoning Review, these include the following which have been previously noted by The Planning Panel:

- **2 November 2019 – Land Released for Urban Development:** Sub-Precinct 5 was released for rezoning as part of the South Creek West Land Release Area.
- **9 November 2021 – Planning Proposal Lodged:** the Planning Proposal submitted by Urbis to Council on behalf of the proponent (BHL Group at the time).

- **21 February 2023 – Endorsement by Camden Local Planning Panel:** the Camden Local Planning Panel recommend the proposal has strategic and site-specific merit subject to resolution of certain matters.
- **11 June 2024 – Council endorsement of Planning Proposal:** Council endorsed the Planning Proposal subject to conditions.
- **26 September 2024 – Rezoning Review request:** following Council being unable to forward the Planning Proposal to DPHI for Gateway Determination, the Planning Proposal was submitted by the proponent to DPHI and the Western City Sydney Planning Panel for consideration.
- **21 October 2024 Rezoning Review Accepted:** Rezoning Review (RR-2024-33) was considered lodged with DPHI after receiving receipt of payment.
- **25 October 2024 – Acknowledgement of Rezoning Review:** acknowledgement letters were sent to the proponent, Council and Panel Chair.
- **13 February 2025 – Rezoning Review Decision:** the Planning Proposal was determined by The Planning Panel which recommended that the Planning proposal be submitted for Gateway Determination

4 Rezoning Review Decision

As mentioned above, the Planning Panel unanimously recommended on 13 February 2025 that the Planning Proposal:

***should** be submitted for a Gateway determination because the proposal has demonstrated strategic and subject to changes site specific merit.*

This decision was subject to **recommendations**, which are noted below. A response on how each recommendation has been resolved is provided against each.

Table 1: Response to the Recommendations of The Planning Panel

Recommendation	Resolution
The Planning Panel recommends that prior to submitting the Planning Proposal for a Gateway determination, the Planning Proposal is to be revised to address the following:	
▪ The outcomes of the Camden Council peer review of the geotechnical studies of the ridgeline around the water storage facility. This peer review is to be provided by Council to The Planning Panel by 28 February 2025. This will assist The Planning Panel to determine appropriate development options (lot size) for the proposed C4 zone.	A comprehensive response to Council's Peer Review has been provided by the proponent and Douglas Partners on a letter dated 28 March 2025. This is summarised in Section 9, with the letter provided as Appendix C.

Recommendation	Resolution
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- The outcomes of further consultation with DCCEEW on the proposed arrangements for stormwater. The Planning Panel requests that the Planning Proposal Authority team undertake consultation with DCCEEW on behalf of The Planning Panel.

The outcomes of consultation with DCCEEW are summarised in **Section 10**. The advice from DEECCW, in relation to the basin strategy, stormwater and flooding have been incorporated into the Planning Proposal.

In addition, The Planning Panel recommends that should a gateway determination be issued:

- Suitable arrangements for the provision of funding for local infrastructure are to be put in place prior to finalisation of the plan

Noted. Council is making arrangements to advance a contributions plan for the precinct. A draft contributions plan, along with a letter of offer to enter into a planning agreement, have been provided to Council to assist in this regard.

- A draft DCP be exhibited concurrently with the planning proposal.

A draft Development Control Plan has been prepared, which can be readily updated to ensure final consistency with the planning proposal, to facilitate parallel exhibition.

The Planning Panel requires confirmation from the proponent that they agree to:

- revise the planning proposal to be consistent with The Planning Panel's recommendations; and

The Planning Proposal has been comprehensively updated in accordance with the Planning Panels recommendations, as outlined in this letter.

- subsequently provide a revised planning proposal to address The Planning Panel's concerns.

Refer to the above. A revised Planning Proposal is being provided to The Planning Panel.

Responses outlining how the updated Planning Proposal has addressed Council's comments provide on 4 July are also considered in in **Appendix A**.

5 Further Consultation

Since the lodgement of the Rezoning Review Request, additional consultation has been undertaken as part of the Rezoning Review process, with additional opportunities also given to Council to provide input into the ILP.

Further consideration of the Planning Proposal by The Planning Panel, as well as additional consultation undertaken to date, include the following:

- **23 June 2024 – Additional Feedback from Council:** Council officers raise additional matters including to investigate land stability and ridgeline use consultation with the Aboriginal community.
- **14 November 2024 – Council Response to Rezoning Review:** Council officers submitted a response to the rezoning review.
- **29 January 2025 – Briefing of Sydney Western City Panel:** Proponent briefed Sydney Western City Planning Panel for consideration in Rezoning Review.
- **4 July 2025 – Additional feedback from Council:** Camden Council provides comments on the latest Indicative Layout Plan
- **1 August 2025 – Briefing of DPHI and GANSW:** briefing and workshop held between the proponent, DPHI and GANSW
- **12 August 2025 – Meeting with DPHI and GANSW:** further meeting with GANSW and DPHI
- **22 August 2025 – Meeting with DPHI and GANSW:** additional meeting with GANSW and DPHI on updated Planning Proposal.

6 Planning Proposal Package Updates

In accordance with the recommendations provided by the Planning Panel, as well as the feedback received from Council, DPHI and GANSW, a comprehensive update has been made to the Planning Proposal Package, including the Planning Proposal Report, the relevant technical studies, the ILP and associated planning and SEPP maps.

A summary of the key updates is provided below.

6.1 Key Updates

Following consideration of the Planning Proposal by DPHI, GANSW and Council, and feedback provided to the proponent group, the following key updates have been made:

- Updated ILP to reflect:
 - Revised open space areas.
 - Revised riparian corridor, drainage and flooding strategies
 - Removal of the local centre
 - Revised school size
 - Revision of dwelling density bands and corresponding zoning – refer to Section 8.6.
- Planning Proposal Report to reflect updated project information and ILP
- Technical study updates, to reflect updated project information and ILP

The updates to the ILP and following, the processes of consultation which have informed them, are discussed herein below.

7 Consideration of GANSW & DPHI Design Advice

As part of consultation process with GANSW, four alternative development and design options were explored.

The advice and designs were thoughtfully considered and meaningfully incorporated into the updated ILP to the furthest extent possible. A Memorandum was provided by Design + Planning to DPHI on August 20 outlining how the advice and design options were incorporated, particularly in response to the consultation that occurred between the proponent, DPHI and GANSW on 12 August and 22 August, 2025.

In their advice, various matters were considered. The advice is summarised below.

7.1 Design Advice Themes

Discussion with GANSW centred around the following advice:

- **Public Open Space Target:** public open space area should be calculated as 15% of the Net Developable Area (NDA) of the site is preferred. The amount of public open space required based on the current method of calculation of 2.83ha/1000 person is greater.
- **Proposed Public Open Space:** Only 20.1ha of the site's open space qualifies for public open space provision, with 42% (8.5ha) located outside the NDA of the site. This results in a 6.04ha deficit. It is noted that residential areas are generally within a 400m catchment of public open space, which is a positive.
- **Riparian Concerns:** GANSW notes that the two second order creeks and first order tributaries are not captured in the ILP. Offsets for impacts first order tributaries are also not shown in the ILP.
- **Centre – Strategic Context:** existing strategic documents for the South West Growth Area do not identify a centre in the site. The centre should be resized.

7.2 Other Development Options

Four alternative design options were explored by GANSW, which reconfigured the design to allow for an alternate layout and adjusted areas for the school, local centre and public open space. While the design options generally resulted in a loss of 234 medium density lots, it was contemplated that this can be compensated by increasing residential density from 32 dwellings per hectare to 38 dwellings per hectare (in the medium density zone).

The other development options also considered various locations for the school, in light of the need to increase its size to 3ha.

7.3 Non-Negotiable Design Advice

Following the consideration of the above matters, the following non-negotiable design criteria was established by GANSW:

- **Public Open Space:** shift target to 15% of net developable area

- **Sport fields:** the open space needs to span across riparian corridors and be at least 20% flood free, be relatively flat, adjacent to school and have minimum dimensions in accordance with Council or Greener Place Guidelines.
- **Riparian Corridors:** second or higher-order creek corridors should be considered and protected. An additional 4.4ha offset is required based on the assumption all 1st order riparian corridors will be developed.
- **School:** minimum size – 3ha
- **Local centre:** recommended minimum size 1.87ha

The non-negotiable design advice was incorporated into the ILP, attached as **Appendix B**.

Following a meeting with DPHI on 22 August, it was agreed that all design queries had been responded to and that following discussion with Council, the package should proceed to the Planning Panel for endorsement before being submitted to Gateway Determination.

A further breakdown on how the updated ILP has responded to GANSW, DPHI, as well as Council feedback (**Section 8**) is provided below.

8 Indicative Layout Plan Design Response

8.1 Public Open Space

In accordance with DPHI feedback the public open space target benchmark has been revised from 2.83ha per 1000 people to 15% of NDA. The performance criteria for open space still being that it needs to be within a 400m walking catchment of all future residents.

The NDA for the purposes of calculating open space has been derived from Clause 10 of the Environmental Planning and Assessment (Special Infrastructure Contribution – Western Sydney Growth Areas) Determination 2011, though with full width local roads calculated instead of half roads. Accordingly, this NDA calculation excludes, open space, drainage, riparian corridors, the school, easements, sub-arterial roads and the Sydney Water site. The site NDA totals 113.89ha, resulting in a total open space requirement of 17.08ha.

As a result, 17.12 of open space has been provided in the updated ILP.

An open space calculation plan prepared by Design + Planning is provided as **Appendix B**. It confirms that only the proposed active and passive open space has been considered in the calculation.

8.2 Stormwater & Flooding

The amended ILP now provides land for drainage purposes either offline or in accordance with JWP advice and the DPHI-Water Guidelines – *'Guidelines for Riparian Corridors on Waterfront Land'*.

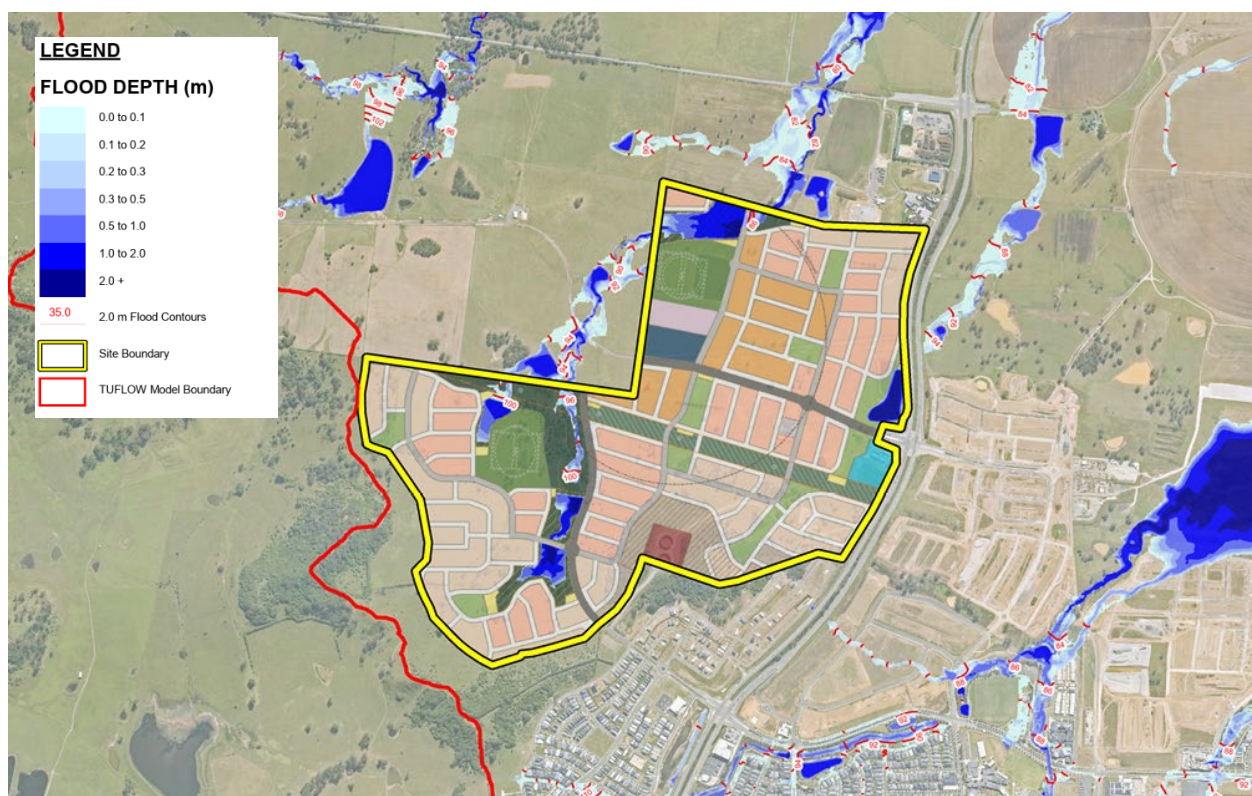
In accordance with JWP advice the ILP has been designed to ensure that any flooding is contained within the riparian corridor.

As part of the additional assessment and redesign of the ILP, additional TUFLOW Modelling has been undertaken by JWP to assess flood, and stormwater impacts on the site. This re-assessment has also considered the revised basin strategy.

All flooding impacts will be contained within the riparian corridor, as well as within the 0.9804ha waterbody in Open Space 3 on the eastern boundary of the site along the Northern Road.

JWP in their Stormwater Advice Letter (**Appendix D**) has confirmed the above findings and notes that the updated Water Cycle Management Strategy is in alignment with the August 2025 ILP and is currently being prepared.

Figure 1 Post-Development Flood Depth Levels



Source: Design + Planning

The flooding and stormwater impacts are considered acceptable, and therefore in this regard, the Planning Proposal is considered suitable to proceed to Gateway Determination.

8.3 Riparian Corridors Validation

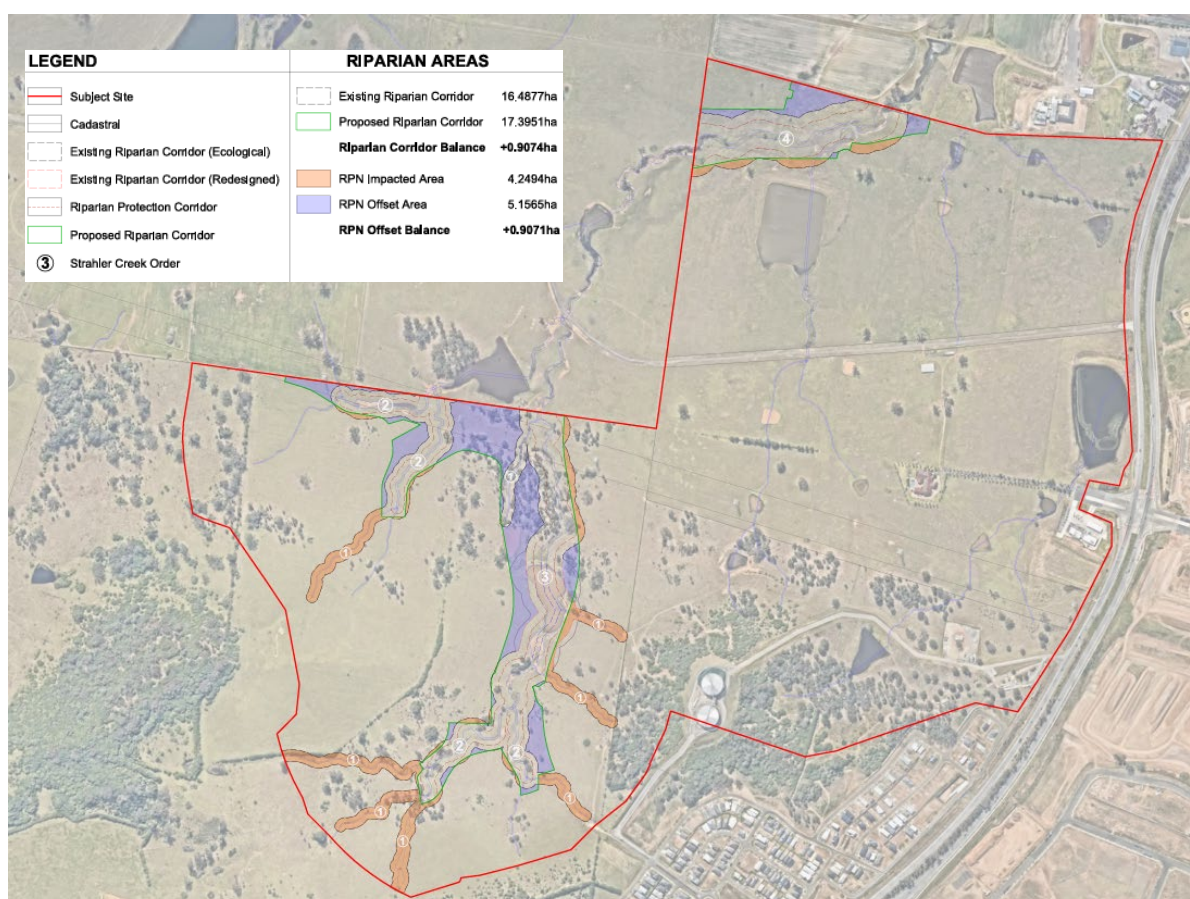
Further riparian assessment has been undertaken by ELA. The additional assessment includes a site validation of the riparian corridors and banks, alongside a compliant impact and offset review in accordance

with the DPHI *Guidelines for Riparian Corridors on Waterfront Land*. In accordance with their advice, most riparian corridors have been categorised as Strahler Order 1 or 2 streams. The central riparian corridor within the site has been categorised as Strahler Order 3, and part Strahler order 4 in the top northern edge of the site.

These investigations have informed the finalisation of the redesign of the riparian corridor within the ILP. As a result, the redesign results in an offset balance of +0.9071ha of additional riparian corridor land. Design + Planning have prepared a Riparian Corridor Offset Plan, demonstrating the offset Outcome reached within the updated ILP. An excerpt is shown below.

JWP in their Stormwater Advice Letter (**Appendix D**) note that the updated Water Cycle Management Strategy will ensure that the basins strategy preserves the third order water courses on the site.

Figure 2 Riparian Corridor Offset Plan



Source: Design + Planning

8.4 Neighbourhood Centre

The neighbourhood centre has been removed in accordance with DPHI advice, and to ensure consistency with the retail centres hierarchy of the South West Growth Centre.

8.5 School Size

The school land has been resized from 2ha to 3ha (refer below). The school land now occupies the land previously proposed for the Local Centre, which has been removed. An extract of the revised School land in the ILP is provided below.

8.6 Residential Density

In accordance with DPHI feedback, the proposed residential density bands have been marginally increased across the precinct and adjusted for consistency with other precinct SEPP mapping:

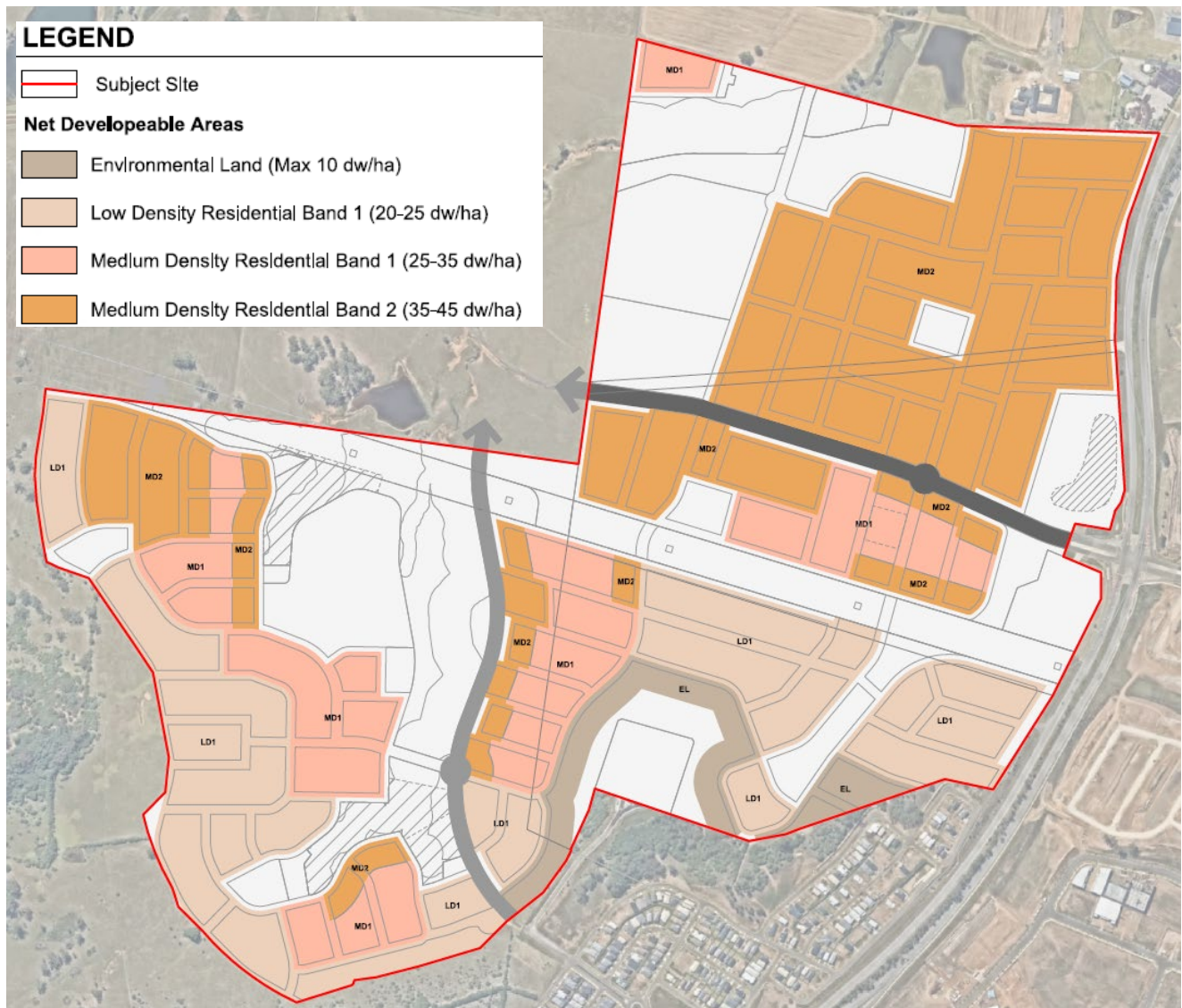
- Environmental Living Zoned Land – Maximum 10dw/ha
- Low Density Residential – Band 1 – 20-25 dw/ha
- Medium Density Residential – Band 1 – 25-35dw/ha
- Medium Density Residential – Band 2 – 35-45dw/ha

Those areas that were previously identified as Low Density Residential Band 2 (25-30dw/ha) have been converted to Medium Density Residential Band 1 (25-35dw/ha). The areas previously identified as Medium Density Residential Band 1 (30-40dw/ha) have been converted to Medium Density Residential Band 2 (35-45dw/ha).

The Residential Densities have been calculated on an NDA of 103.54ha, which results in a site average of 31 dw/ha, yielding 3,197 residential lots.

An excerpt from the updated Residential Density Map, prepared by Design + Planning, is provided below.

Figure 3 Residential Density Map



Source: Design + Planning

9 Council's Geotechnical Peer Review Response

In accordance with The Planning Panel's determination, it was recommended that the "outcomes of the Camden Council peer review of the geotechnical studies ridgeline around the water storage facility" are responded to. A summary of Council's Peer Review, as well as the resolution, is provided below.

9.1 Summary of Concerns

Council's peer review refers to a Marten & Associates Report, dated 13 March 2025. It was noted that the Peer Review was only provided in draft format without appendices and attachments and also was not scientifically peer reviewed internally. It is therefore, herein referred to as the **Draft Peer Review**. In accordance with the Planning Panel's recommendation a letter was provided by the proponent dated 28 March. The letter was accompanied by an Audit Table, prepared by Douglas Partners which responded to the comments made in The Draft Peer Review.

In summary, the Draft Peer Review presented various potential issues in relation to geological conditions, slope stability, and possible future groundwater scenarios. It recommended that further geotechnical investigations be carried out at the rezoning stage. Many of the issues raised related to requests for clarification.

The remaining concerns related to additional ongoing monitoring and engineering design matters such as excavation, drainage, fill and retaining walls, in particular slope stability on the site and adjoining land. These were similar to the comments and recommendations made already by Douglas Partners.

9.2 Resolution

In response to the requests for clarification, Douglas Partners provided comments back in their Audit Table.

On the need for ongoing monitoring and additional investigation, Douglas Partners have already been engaged as the geotechnical engineers to undertake additional monitoring until December 2026. The engineering design matters and intrusive investigations are considered more appropriate to consider at the detailed DA stage and as part of the implementation of the Site-specific DCP.

It is considered that matters such as additional monitoring and investigations should not delay or prevent the Planning proposal from proceeding to Gateway Determination. The Letter prepared by the proponent and the Audit Table prepared by Douglas Partners are again attached to this letter as **Appendix C**.

For the purposes of a rezoning and this Planning Proposal, the issues raised by Marten's in their Draft Peer Review are considered resolved. In accordance with the advice of Douglas Partners, the site is considered suitable for rezoning, from a geotechnical perspective.

10 DCCEEW Response

Always Consultancy on behalf of the proponent, has consulted extensively with DCCEEW on a range of matters, in particular the following:

- **vegetation condition;** DCCEEW considered the vegetation within the riparian corridors in the site to be of high value and that they should be considered for retention and preservation.
- **the online basin strategy;** DCCEEW raised concerns with the online basin strategy, in particular regard to sedimentation, pollution, nutrient load impacts on retained vegetation, weed invasion and erosion from urban development. DCCEEW's position was that an offline basin strategy was critical.
- **stormwater and flooding;** DCCEEW raised concerns in regard to the stormwater and flooding impacts associated with the online basin strategy.

- **biodiversity Certification:** DCCEEW were seeking confirmation that the Planning Proposal is consistent with the Biodiversity Certification orders relevant to the site.

Responses to various comments, have been provided by the proponent's engaged Biodiversity Consultant, Eco Logical Australia (ELA) which was summarised in a letter dated 28 April 2025.

Following consultation, the ILP has been refined even further in accordance with DCCEEW's comments.

10.1 Resolution

Following consultation, the ILP has been refined even further in accordance with DCCEEW's comments. A summary of the actions is provided below.

- **Vegetation rehabilitation:** The Planning Proposal intends to revegetate and manage the entire riparian corridor. This is supported by the proposed dual RE1 Public Recreation Zoning and C2 Conservation Zoning, and the overlay of the Native Vegetation Protection Map, as well as the proposed strategy for Vegetation Management Plans to coordinate ongoing maintenance of the riparian land. Regardless, the Precinct Plan will protect 2.36 ha of Additional High Conservation Value Vegetation.
This approach is expected to have an enhanced biodiversity outcome, with long term tree canopy coverage considered more achievable, as opposed to relying on generally poor-quality vegetation.
- **Offline basins, stormwater & Flooding:** the proponent has moved detention basins offline or otherwise in accordance with the DCCEEW's advice and the Guideline for *Riparian Corridors on Waterfront Land*, with drainage only into Strahler Order 1 or 2 streams. All water quality components are also now located offline. Associated stormwater and flood impacts associated with the basin strategy are therefore considered resolved.
- **Biodiversity Certification:** ELA prepared two formal biodiversity certification consistency reports, dated September 2024. They confirm that:
 - The Planning Proposal is consistent with the Growth Centres Biodiversity Certification Order
 - The Planning Proposal is consistent with the Commonwealth Growth Centres Strategic Assessment Program

The matters raised by DCCEEW are considered in more detailed in a table in **Appendix A**.

In light of comprehensively incorporating DCCEEW's advice, the site is considered suitable for a rezoning from a stormwater, flooding and biodiversity perspective.

11 Future Work Prior to Finalisation

Following gateway determination, the following updated technical studies, which significantly informed the update to the ILP, will be provided:

- Traffic, Transport and Access Assessment, prepared by SCT Consulting
- The Riparian Assessment, prepared by EcoLogical Australia

- The Water Cycle Management Report (including Flood Impact Risk Assessment), prepared by J. Wyndham Prince.

The updated Water Cycle Management Report provides updated TUFLOW modelling and consideration of pre- and post-development flood and stormwater management impacts.

Other technical reports where relevant, have been marginally updated for completeness and consistency to reflect the ILP updates summarised in this letter. These will be provided post-gateway determination, and prior to finalisation.

12 Summary and Conclusion

In summary, the following is noted:

- The recommendations of the Planning Panel have been addressed
- The design options presented by DPHI and GANSW have been thoughtfully considered and incorporated into an updated ILP
- The outcomes of Council's Draft Peer Review have been addressed in previous correspondence, with a majority of matters relating to ongoing monitoring and detailed engineering, considered more appropriate to address at the DA stage.
- DCCEEW's advice has been meaningfully considered, resulting in a change to the basin strategy and validation of riparian corridors.
- Council's comments, in particular relating to stormwater management, flooding and the dual use of open space for detention, have been addressed and incorporated into the updated ILP as well as an updated Water Cycle Management Strategy prepared by JWP.
- Revised TUFLOW modelling is being provided in accordance the Flood Risk Management Manual and Regional Flood Model User Guide. The Water Cycle Management Report and Flood Impact Risk Assessment are therefore suitable for further consideration by the Planning Panel.

In light of the above, its considered that the Planning Proposal is now ready to be supported by the Planning Panel and progressed to Gateway Determination.

Enc:

Appendix A – Response to Council Comments dated 4 July, 2025

Appendix B – Updated ILP and SEPP Maps (and Riparian Corridor Validation by ELA)

Appendix C – Geotechnical Letter and Douglas Partners Response

Appendix D – JWP Stormwater Advice Letter



Appendix A

Table 2: Response to Council comments

Matter	Council Comments	Proponent Response
Camden Council		
1. Relocation of stormwater detention basins away from Category 2 land and third order watercourses	<u>Comments from Council's Catchments Project Officer</u> Supports the redesign of the riparian corridor if it is consistent and complies with the Water Management Act and Regulation, including the Guidelines for Waterfront Land	In accordance with JWP advice, the updated ILP design and offline basin strategy are consistent with the Guidelines for <i>Riparian Corridors on Waterfront Land</i> and the <i>Water Management Act 2000</i> .
	Strategic Officer comment – Council does not support playing fields being used as detention basins (temporary or otherwise)	The sports fields and open space have been redesigned, reducing their inundation period from 17.2 hours to a maximum of 1 hour, in accordance with Council's minimum requirements. Dual use is only supported for a maximum of 10% of the open space area, in accordance with Council's flood duration and location requirements.

Matter	Council Comments	Proponent Response
2. Provision of independent, bespoke offline basins, designed in accordance with Camden Council's specification and consistent with best practice in the NSW Stormwater Management Strategy	<u>Water Quantity</u> It is noted that under the revised Water Cycle Management Strategy, the detention basins previously proposed as "online" to third-order watercourses have been revised to be "offline". These are now identified as Basins B3 and B6 (Reference 2). However, updated digital flood models — the Upper South Creek Regional Flood Model, incorporating the revised SCW5 ILP including all detention basins in accordance with the Regional Flood Model User Guide — must be submitted to Council for review, by Council and Council's consultant. These models should include results for a range of flood events as required to enable assessment of the following: ▪ Flood Impacts and risk to future and existing community in the LGA and downstream LGAs, as stated in Regional Flood Model User Guide. ▪ Consistency with Flood Risk Management (FRM) Manual 2023 and the guidance outlined in FRM Manual LU01 ▪ Adequacy of detention basins ▪ To assess whether the revised ILP is compatible with flood risk ▪ Emergency management requirements The Briefing Note states that planning proposal is consistent with strategic planning documents including Camden LEP 2010	The Water Cycle Management Strategy and associated TUFLOW Modelling will incorporate the regional flood model and comply with the Flood Risk Management Manual and Regional Flood Model User Guide. The updated Water Cycle Management Strategy and accompanying flood studies will incorporate updated



Matter	Council Comments	Proponent Response
	(Reference 1). However, the planning proposal is inconsistent with following legislation, policies, and guidelines as the WCM strategy is incomplete without providing flood modelling with the submissions (April 2024) as required for assessing stormwater.	TUFLOW Flood modelling in accordance the Flood Risk Management Manual and Regional Flood Model User Guide. The Water Cycle Management Report is therefore now considered adequate for consideration by the Planning Panel.
	The preliminary submissions in 2022 were assessed by Council's flood consultant and concluded that the flood modelling is inadequate, and unable to assess any flood impacts and risks without basins included in the TUFLOW model.	Refer to the above. Revised TUFLOW Modelling has been prepared as part of the updated Water Cycle Management Strategy.
	MUSIC models have not been provided for assessment and hence the adequacy of water quality devices cannot be assessed.	Digital TUFLOW modelling has been prepared in support of the Planning Proposal for the Planning Panel.
3. Use of the active open space fields for dual purpose detention during rare storm events	<u>Recreation & Open Space Comments</u> Council officers do not support playing fields to be used as detention basins (temporary or otherwise). It is highly undesirable to design fields within a major overland flow path. If playing fields are used to retain water during a flood event, this will lead to long-term deterioration of the fields and raises fairness issues for the community when fields cannot be used for long periods after the floodwaters have receded.	Refer to above. The playing fields and open space have been redesigned to support a dual use function for only 10% of the area, and for a maximum 1 hour of inundation, consistent with Council's minimum flood duration requirements.

Matter	Council Comments	Proponent Response
	Council officers would like to explore alternatives rather than placing the playing fields within a flood storage or floodway area. Camden Sports Field Specification requires that: - Local fields are constructed above the 5% AEP storm level and; - Regional Fields are constructed at the 1% level as a minimum. The impact that stormwater has on the playing surface is that silt and clay can wash into and mix with the topsoil resulting in a hard playing surface once it dries. Particularly with sand slit drainage, the drainage becomes non-functional after a storm event and places a maintenance burden on Council to repair damaged playing fields. Our preference is to not have fields at any level of inundation. However, in the case that the design is supported by DPHI, in accordance with Council's Sports Field Specification, the maximum inundation period is 1 hour. From our understanding this is not possible with the current proposal which suggests 17.2 hours of inundation during the 1% storm event.	Noted. Refer above.
	If playing fields were to serve as basin/s: Proposed inundation area restricts facilities such as amenities buildings; storage areas and parking areas being constructed within a flood storage. Council considers these crucial to the function of the sportsground, and we have concerns around the feasibility of providing these within the non-impacted areas.	Noted. Refer above.

Matter	Council Comments	Proponent Response
	It should be noted that Council's DCP requires 50 parking spaces per field be provided on site. o Compliance with Council's Sports Field Specification is required. o Sand slit drainage is considered unsuitable for the detention basin area due to the long-term maintenance costs it imposes on Council for the ongoing upkeep of the playing field. <u>Calculation of Open Space</u> It should be noted that Council does not include riparian corridors, drainage basins or electrical easements within open space calculations.	Riparian corridors, drainage basins and electrical easements have been removed from open space calculations.
4. Increased yield through appropriate adjustments to dwelling density, including a revised development scenario that remains below surrounding precinct densities while delivering a	Strategic Planning does not oppose an increase in density, provided the proposal satisfies open space requirements, addresses other social infrastructure needs and resolves traffic and road capacity issues. Additionally, it must ensure no adverse impacts to upstream and downstream properties from a stormwater management and flooding perspective.	Residential densities have been amended to: ▪ Environmental Living Zoned Land – Maximum 10dw/ha ▪ Low Density Residential – Band 1 – 20-25 dw/ha ▪ Medium Density Residential – Band 1 – 25-35dw/ha ▪ Medium Density Residential – Band 2 – 35-45dw/ha The increase in density corresponds with an amendment to open space provision in accordance with DPHI advice, which requires open space at a rate of 15% of the site's NDA.



Matter	Council Comments	Proponent Response
suitable housing mix		Flooding and stormwater management, including within the riparian corridor and through the basin strategy have adopted new TUFLOW modelling, and are now in accordance with DCCEEW and Council requirements.
5. Contributions Plan	<u>Comments from Council's Contributions Team</u> Confirm that the proponent has sent through a draft CP prepared by Urbis. The contribution rate per standard dwelling (with sub-arterials) equates to \$130,699. This poses a significant problem in terms of feasibility for development. Council will be preparing its own Contributions Plan and this process has commenced. Based on the documents reviewed so far, it appears that the per lot rate will be significantly higher than anywhere else in the LGA and would hinder any tangible development of the precinct. It may be prudent to look at measures such as increasing density to achieve the desired outcomes.	The updated planning proposal now incorporates additional residential density, which shall in part assist in ensuring that contribution obligations are more effective and reasonable. Council is making arrangements to advance an updated contribution plan, allowing for public exhibition in parallel with the planning proposal – as soon as gateway determination has been achieved.
Department of Climate Change, Energy, the Environment & Water (DCCEEW)		

Matter	Council Comments	Proponent Response
1. Detention Basins	It is not clear how much alteration and impact the proposed basins and associated works would have on the existing vegetation. Similarly, the ongoing direct and indirect impacts associated with the development on vegetation proposed to be retained have not been adequately addressed. Water pollution, sedimentation, increased nutrient loads, weed invasion and erosion from urban development have all been linked as key threats to Cumberland Plain bushland. As such, the proposed detention basins should still be relocated outside of the proposed C2 Environmental Conservation zone/riparian corridors.	All basins have been moved offline or designed otherwise in accordance with the <i>Guidelines for Riparian Corridors on Waterfront Land</i>.
2. Tree Canopy Cover	It is stated that the proposal will fall short of the 40% Tree Canopy Cover, even if maximum predicted cover capability is reached. It is also noted that there are sections of significant high conservation value vegetation containing threatened ecological communities that are not being retained or conserved. There are several opportunities for further protection and rehabilitation of existing vegetation that would also enable the proposal to achieve the 40% Tree Canopy Cover target. Specifically, the large patch of remnant vegetation along the western boundary that also contains a myriad of habitat trees crucial for many of the native species that occur in the region, and three first order streams towards the south-west of the Subject Land, also containing habitat features. Additionally, it is not clear whether some of the proposed green spaces would contain sporting fields or active uses where trees could not be retained or planted. Clarity on the use and type of green space is required as this would impact the amount of	The vegetation in the western area is on biodiversity certified land. The loss of this vegetation has been accounted for in the biodiversity certification of the Growth Centres and offsets are provided via the Growth Centres Offsets Program. Restoration of riparian corridors will ensure retention and revegetation of approximately 16.8 ha of native vegetation. .

Matter	Council Comments	Proponent Response
	canopy cover retained by the proposal. It is strongly recommended that additional high value vegetation is retained. This would allow the proposal to achieve Canopy Cover targets, along with providing numerous additional benefits from green space and native tree cover to both the people and the environment.	
3. Growth Centres	<u>Proposed Zoning</u> All riparian corridors and retained patches of additional high conservation value vegetation (AHCVV) are to be zoned C2 Environmental Conservation. SPI Special Activities may be considered as an alternative zone in open space areas. Further, areas of C2 should have permissible uses limited to those consistent with the Standard Instrument – Principal Local Environmental Plan. Basins, drainage and sewer infrastructure and roads should not be supported in the C2 zone. The proposed inclusion of multiple large basins within the riparian corridor is not supported. <u>Consistency assessment – Growth Centres Biodiversity Certification</u> Relevant Biodiversity Measure (RBM) 35 of the Order states that during or before any public exhibition of draft precinct plans, an assessment of consistency of the proposed precinct plan with the conditions of biodiversity certification is to be made publicly available. An assessment of consistency must be prepared and provided to DCCEEW for review. This should include consideration	Refer above. Basins have been moved offline out of the C2 Conservation Zoned Land which will accommodate the Riparian Corridor. A Consistency Report was prepared and provided. The report content responds to the RBMs in the Biodiversity Certification Order. The report concluded that the Precinct Plan is consistent with the Certification as the entire precinct is biodiversity certified and therefore no Existing Native Vegetation required protection under the Order.

Matter	Council Comments	Proponent Response
	of how the objectives of the Growth Centres Development Code have been achieved. Additional High Conservation Value Vegetation (AHCVV) A Native Vegetation Retention Area map (Design + Plan, 23 September 2024) is included as part of the PP. The coverage of this map is limited to riparian corridors. In relation to this map: It is unclear how existing vegetation in the mapped corridor will be retained and protected with proposed basins covering large areas of the mapped corridor. It is unclear how vegetation retention could be possible based on concept basin designs. This is particularly relevant for basins 1 and 2. Opportunity to include additional areas of AHCVV and incorporating these into the map should be considered. This should include AHCVV within and adjacent to the ridge top and ridge side investigation area, contiguous patches of vegetation along the edges of proposed riparian boundaries, that is AHCVV between proposed basins 2 and 4, and within footprints of proposed sports fields. It is acknowledged that this could require amendments to the proposed ILP. Riparian corridors, areas of retained AHCVV and areas identified for revegetation must all be identified on relevant SEPP maps and protected under Appendix 5 Clause 6.2 of State Environmental Planning Policy (Precincts–Western Sydney Parklands) 2021. • Asset protection zones must not encroach into these areas.	The Precinct Plan will protect 2.36 ha of Additional High Conservation Value Vegetation. All AHCVV is shown in Figure 12 of a Biodiversity Assessment Report previously prepared by ELA. (Ref: ELA, 2024 v10). Basins are now located offline or otherwise in accordance with the <i>Guidelines for Riparian Corridors on Waterfront Land</i>. T The basins will be revegetated in accordance with a Vegetation Management Plan that is submitted with each adjoining Development Application. The entire riparian corridor is to be revegetated with native species that are found on the Cumberland Plain and will be planted with endemic species. Areas inundated under a 20% and 50% annual rainfall event, will have species planted that will be associated with Freshwater wetlands on coastal floodplains. Beyond these areas the species will seek to establish Riverflat Eucalypt Forest or Cumberland Plain Woodland depending on whether there is existing communities present. In the longer term, the species mix may vary depending on the micro-habitat and regularity of inundation as is



Matter	Council Comments	Proponent Response
		the case with all natural systems. Weed management will be undertaken in accordance with the VMP. The site's Asset Protection Zones do not encroach into the riparian corridor.
	<u>Relevant Biodiversity Measures 19</u> The PP is to be supported by development controls for the reuse of native plants and topsoil, dam dewatering, preclearance and clearance surveys and associated fauna relocation as well as the salvage and reuse of hollows, felled trunks and root balls. This is particularly relevant to support the appropriate reconstruction/revegetation of the riparian corridors through the site.	Development will be subject to the Camden Growth Centres DCP (2016) which includes controls for re-use of topsoil and native plants in section 2.3.5. The requirement for re-use of hollows is not in the DCP, but can be conditioned in a consent.

**Appendix B - Updated ILP and SEPP Maps (and Riparian
Corridor Validation by ELA)**

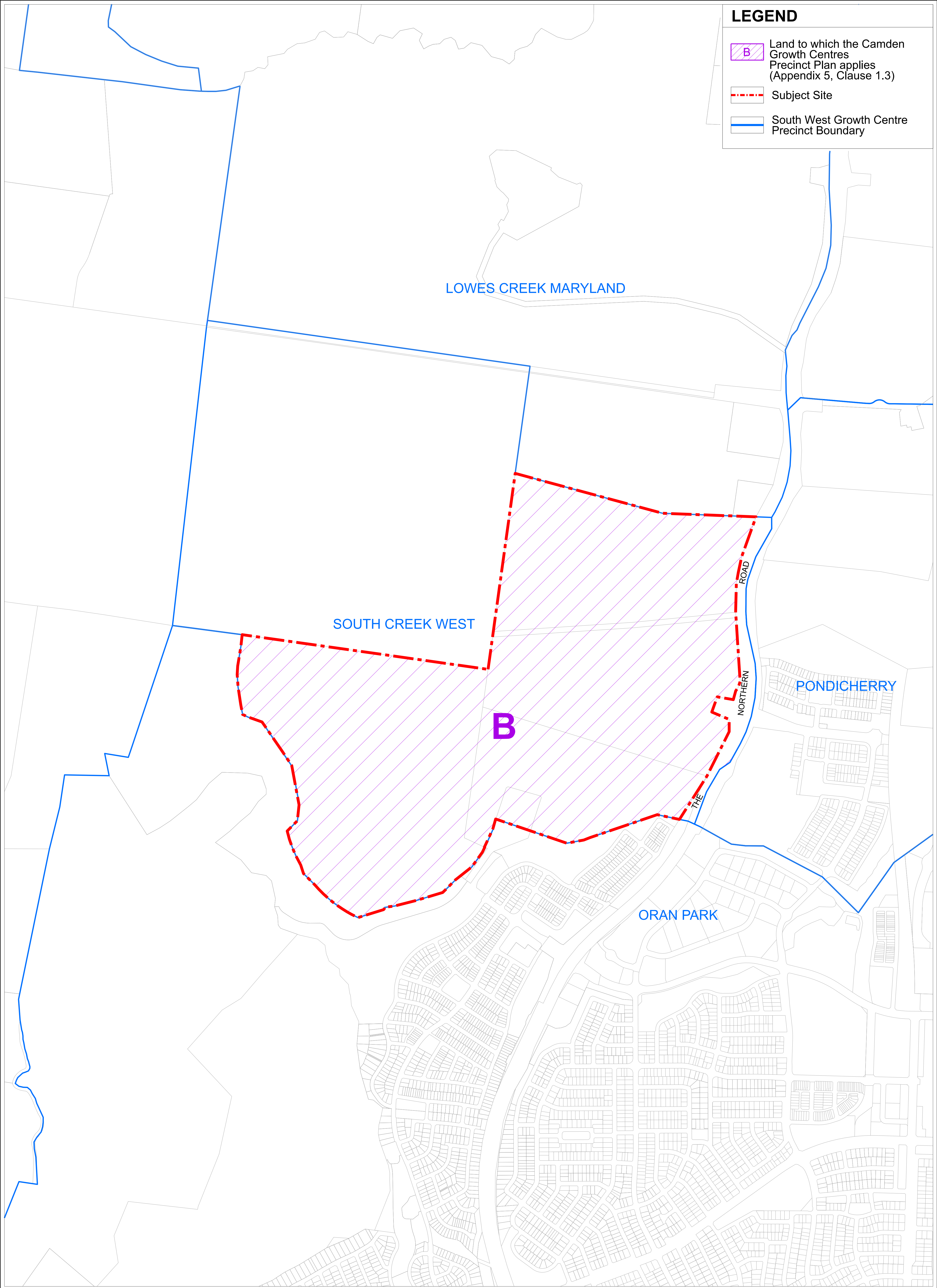
LEGEND

- Subject Site
- 330kV Powerline Easement (Indicative)

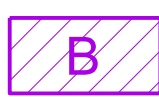
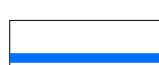
Land Use

- Environmental Living (Maximum 10dw/ha)
- Low Density Band 1 (15 to 25dw/ha)
- Low Density Band 2 (25 to 30dw/ha)
- Medium Density Band 1 (30 to 40dw/ha)
- Open Space
- Open Space (Powerline Easement)
- Playing Field
- Drainage
- Water Body
- Online Dry Basin
- Existing House to be Retained
- Interface with Neighbouring Land to be Coordinated
- Riparian Corridor
- Environmental Conservation
- School (Education Investigation Area)
- Service Station
- Water Tower
- Road - Sub-arterial (4 lanes)
- Road - Sub-arterial (2 lanes)
- Road - Collector
- Road - Local
- Potential Future Road Connection
- Hilltop Investigation Area

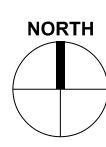
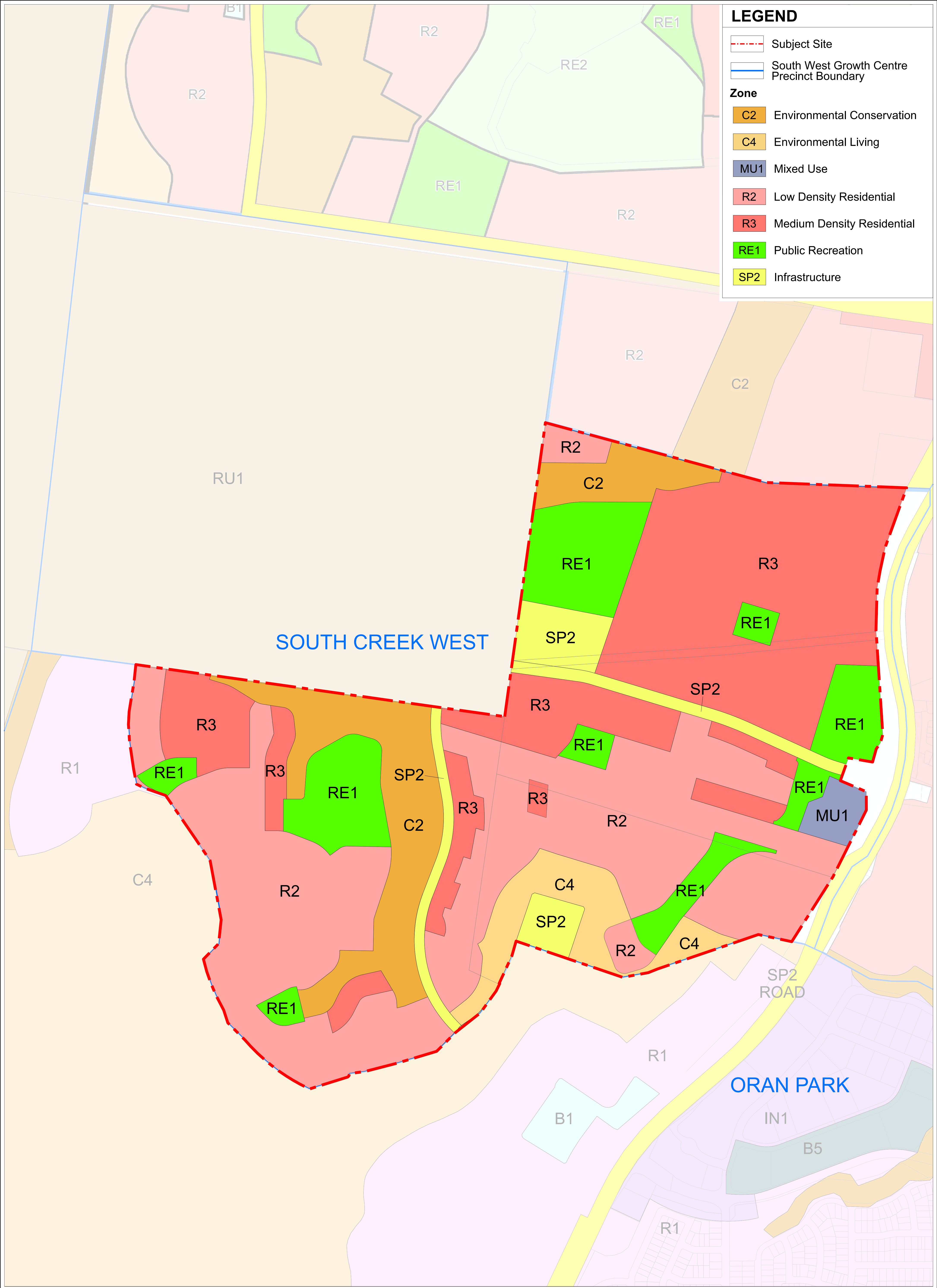


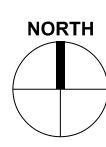
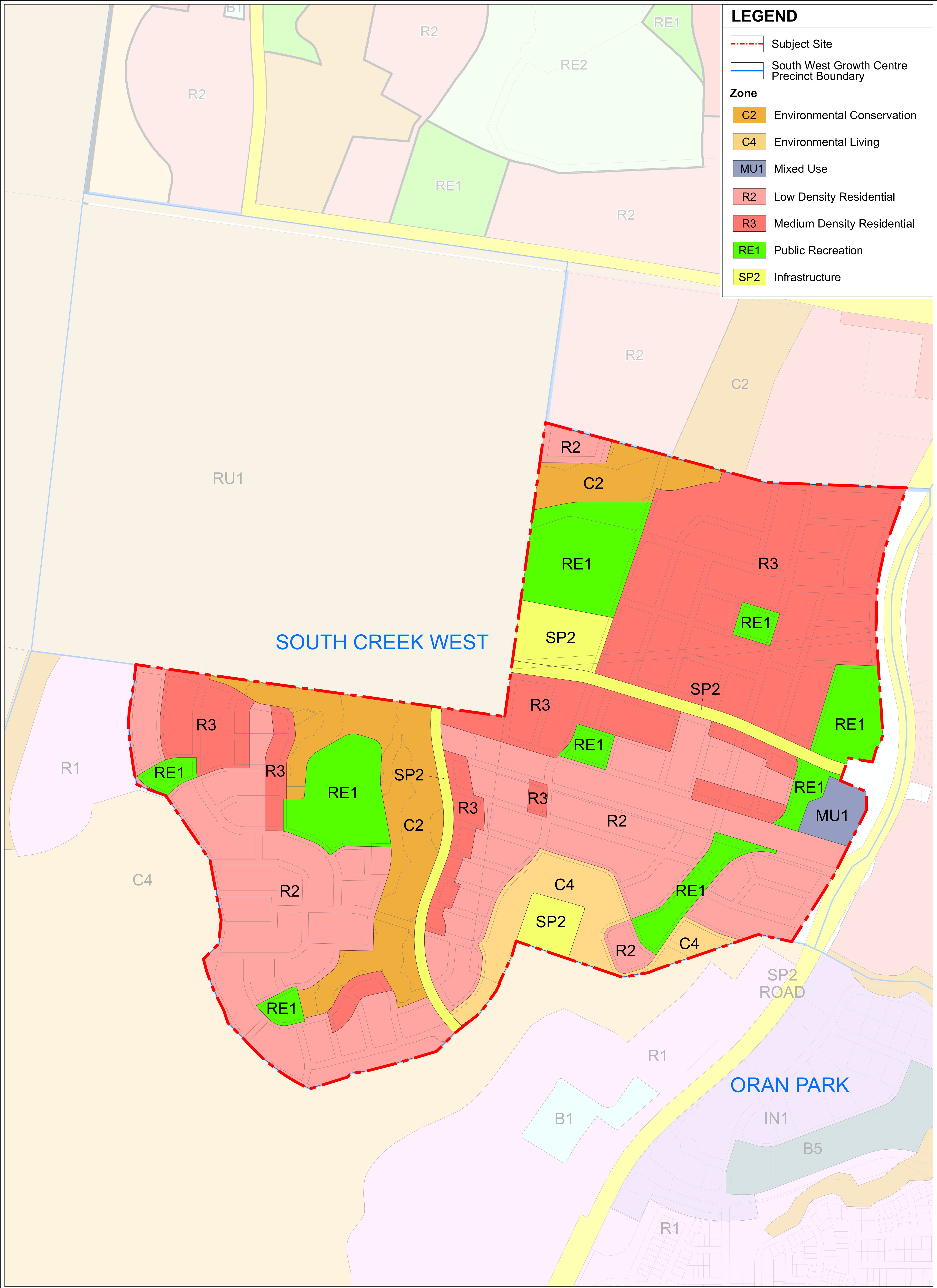


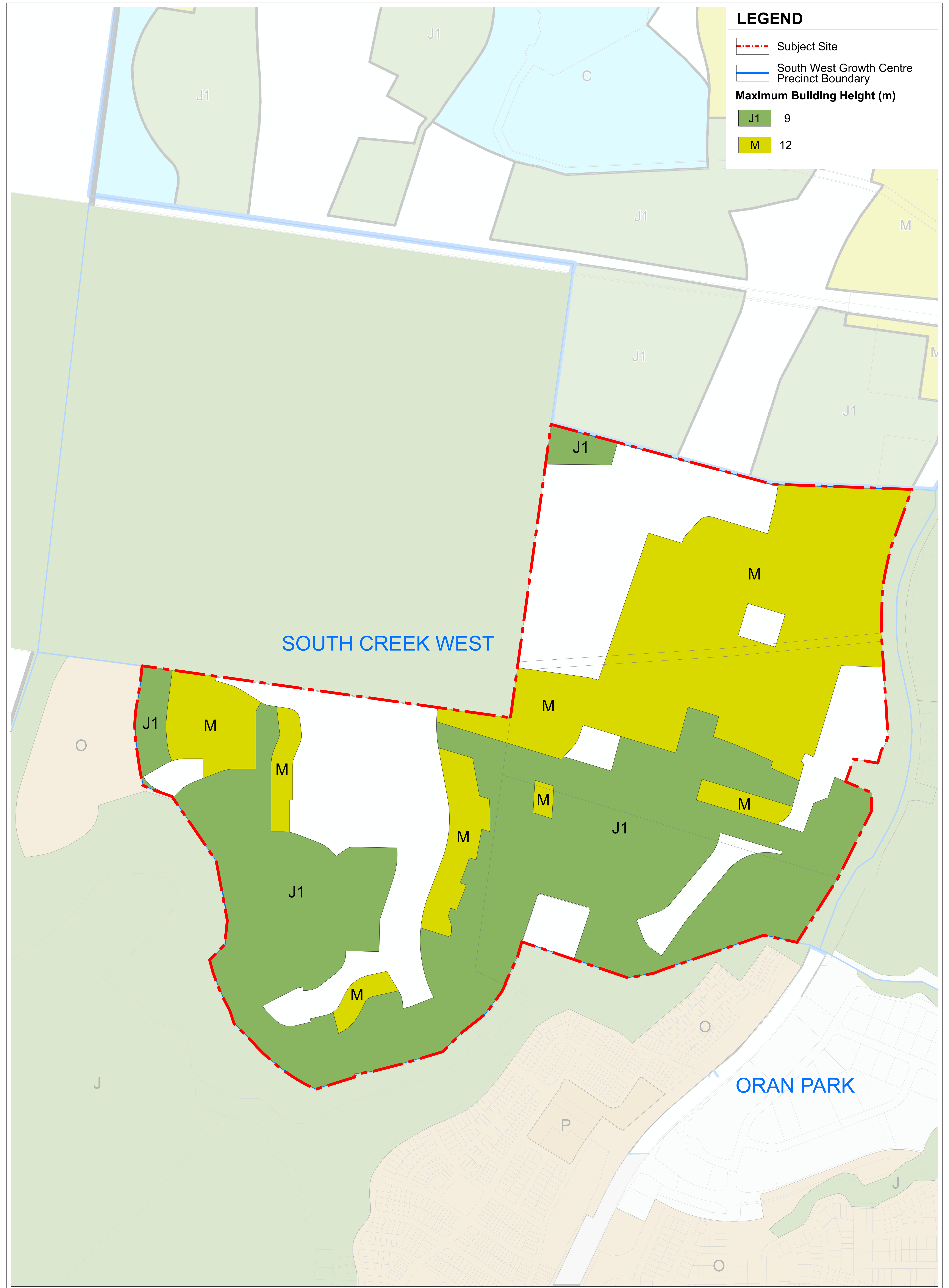
LEGEND

-  Land to which the Camden Growth Centres Precinct Plan applies (Appendix 5, Clause 1.3)
-  Subject Site
-  South West Growth Centre Precinct Boundary









LEGEND

Subject Site

South West Growth Centre Precinct Boundary

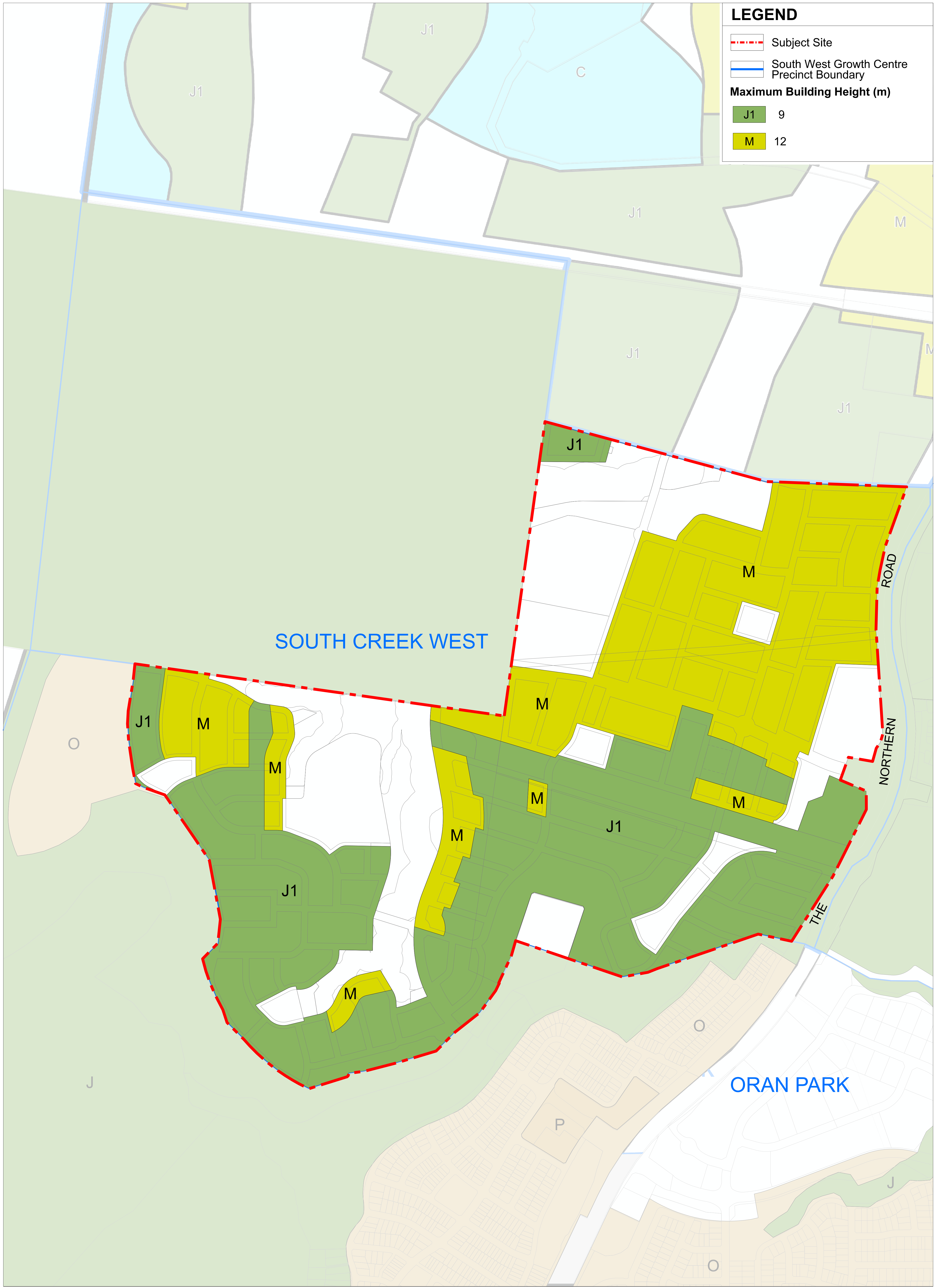
Maximum Building Height (m)

J1

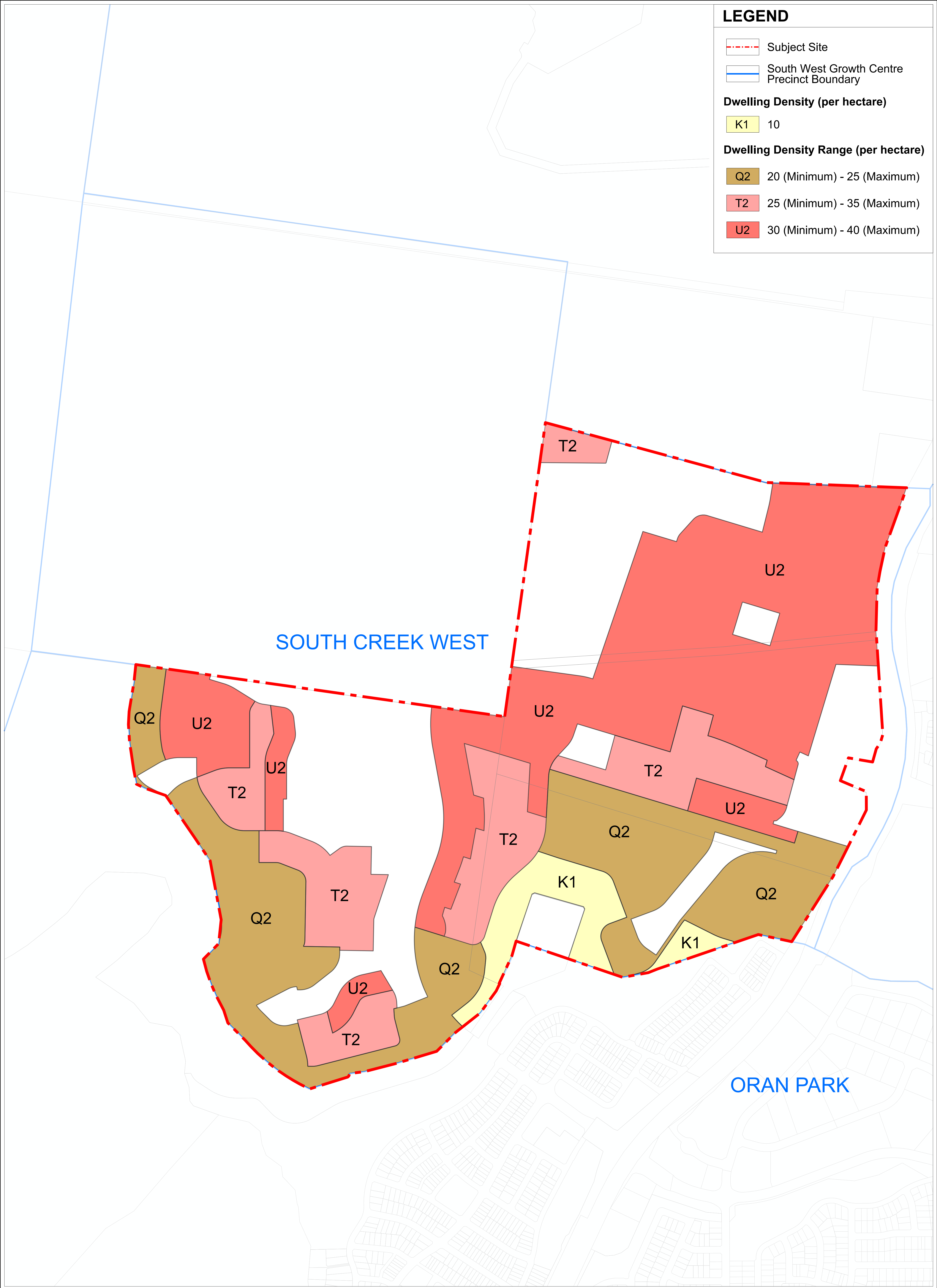
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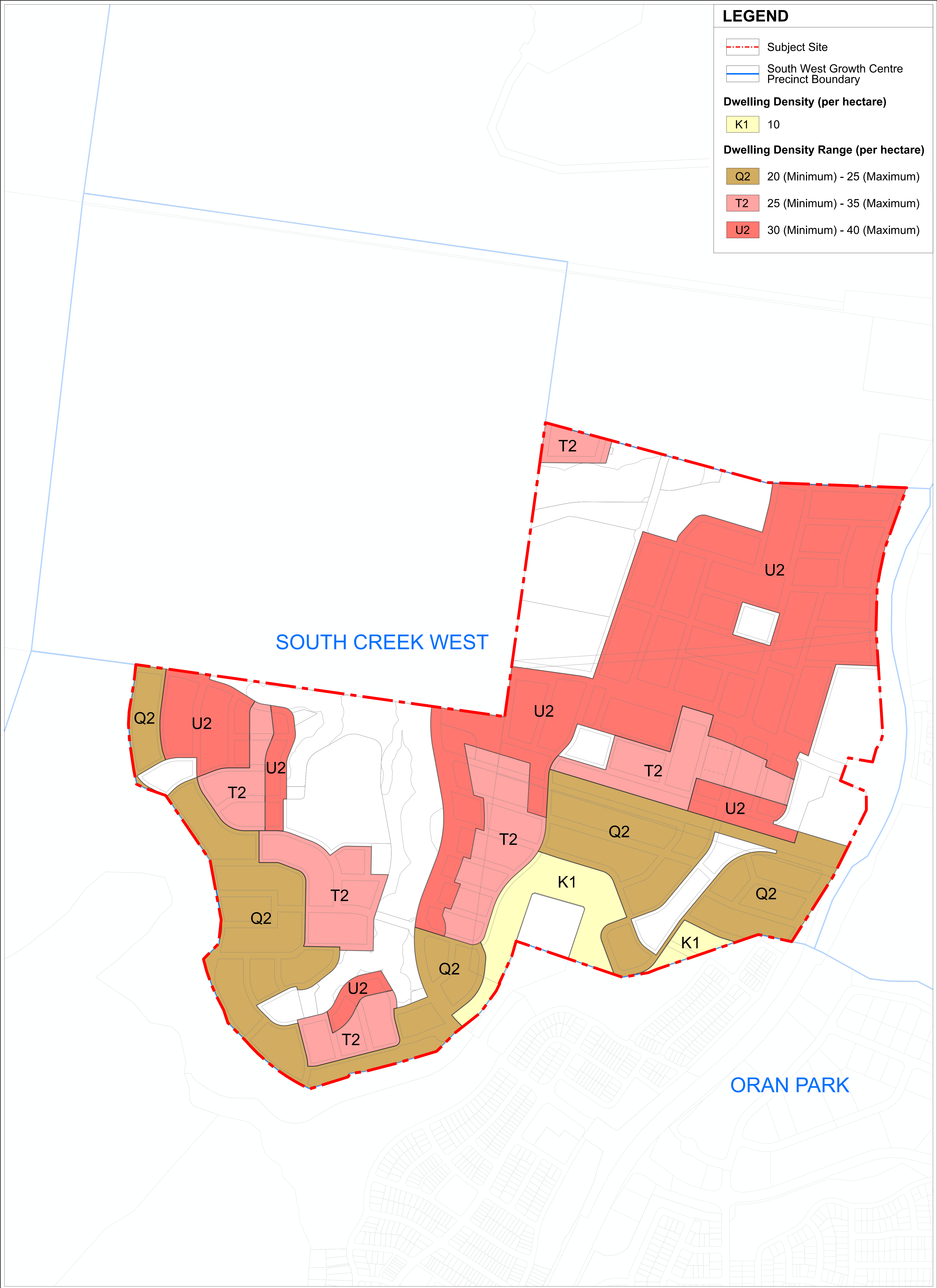
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12



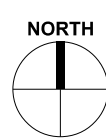
Proposed Height of Building Map
COBBITTY





Proposed Residential Density Map

COBBITTY



40 0 80 160 240 320 400 metres

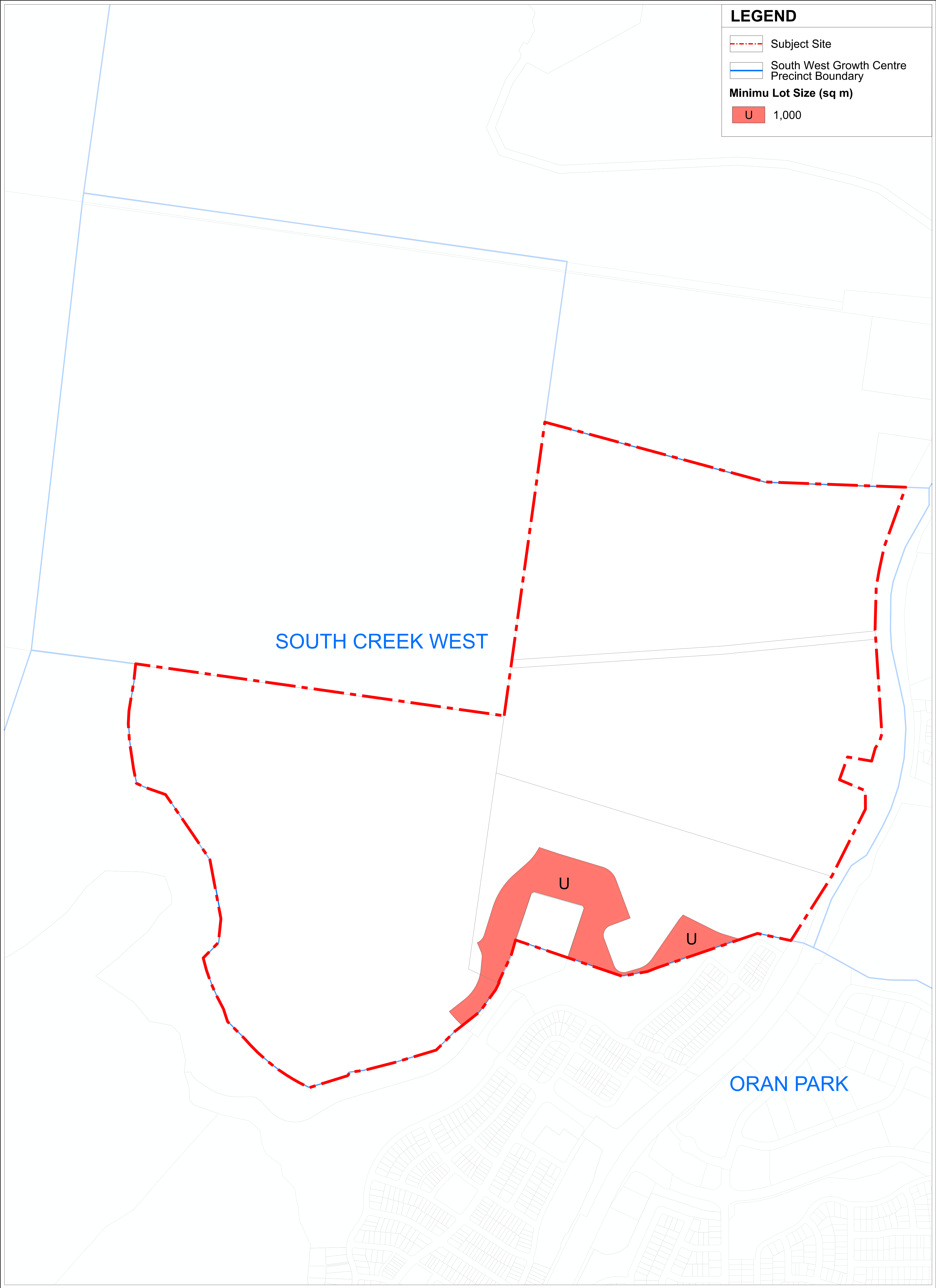
Ref:AWCCO-13-004-2 | Date: 29/08/2025 | Revision: H | Scale: 1:4,000@A1

Note: All areas and dimensions subject to detailed survey

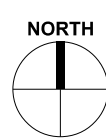
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Proposed Lot Size Map
COBBITTY



Ref: AWCCO-13-006-1 Date: 29/08/2025 Revision: I Scale: 1:4,000@A1

Note: All areas and dimensions subject to detailed survey

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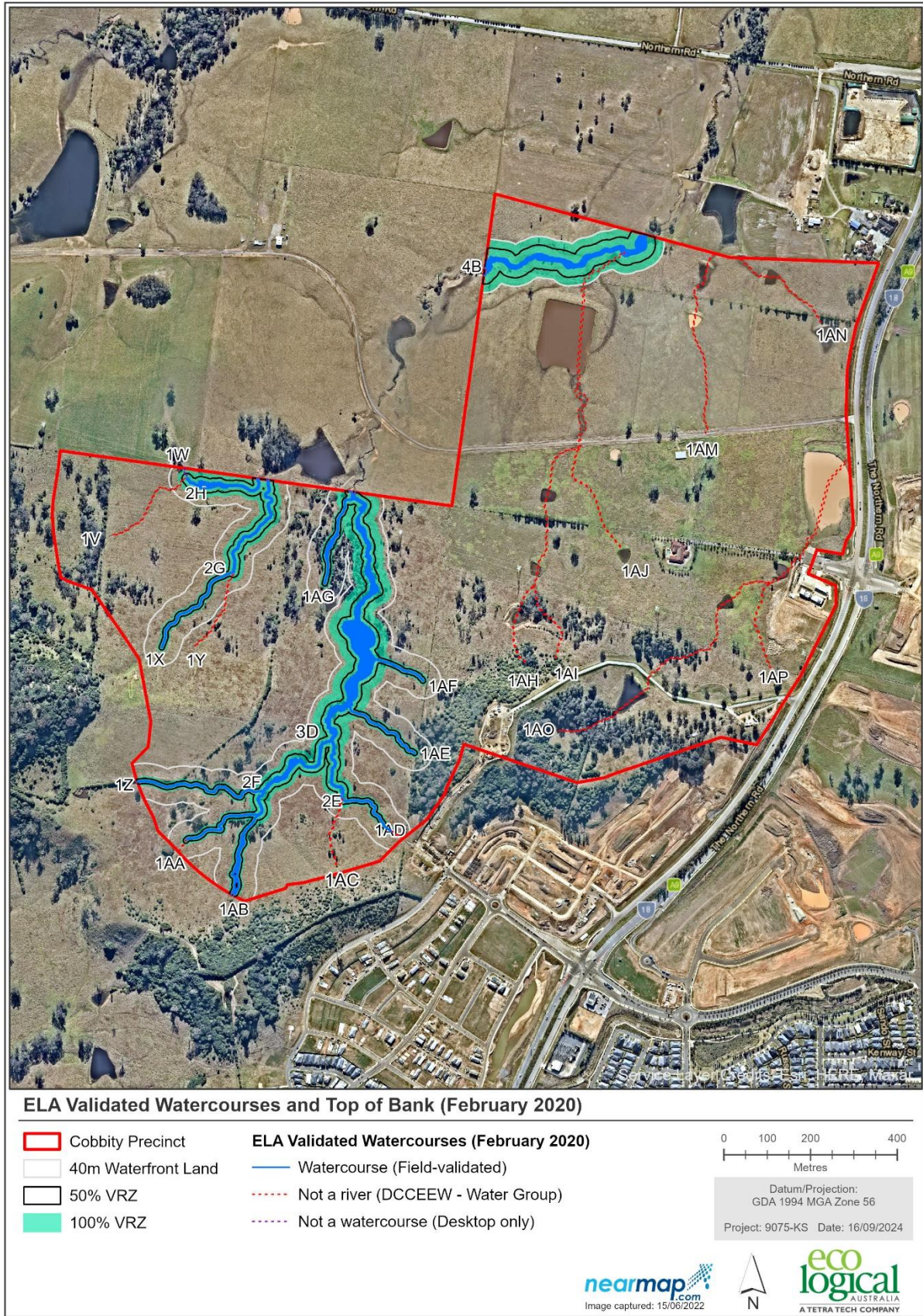


Figure 7: Watercourse validation and riparian corridors

Appendix C – Geotechnical Letter and Douglas Partners Response

JJ Cobbitty Development Pty Ltd
Level 6, 5 Martin Place
Sydney, NSW 2000

Project 92225.11
28 March 2025
R.002.Rev1
HDS

Attention: Xudai Sun
Email: xsun@alwaysconsultancy.com.au

Comments on Geotechnical Peer Review report South Creek West, Sub-Precinct 5, Cobbitty 641 and 657 The Northern Road, Cobbitty NSW

1. Introduction

This report prepared by Douglas Partners Pty Ltd (Douglas) presents geotechnical comments on the 'draft' geotechnical peer review report prepared for Camden Council by Martens & Associates Pty Ltd (Martens), which comprised a review of geotechnical reports prepared by Douglas for a proposed residential subdivision at 641 and 657 The Northern Road, Cobbitty (also referred to as 'Cobbitty Sub-Precinct 5' in the 'South Creek West Land Release Area'). The Douglas reports were prepared with a level of detail and advice intended to be suitable for re-zoning application purposes (understood to be for decisions on strategic land-use).

This report was commissioned by email on 18 March 2025 from Xudai Sun of Always Consultancy Pty Ltd on behalf of JJ Cobbitty Development Pty Ltd and was carried out in general accordance with our proposal 92225.10.P.002.Rev0 dated 15 May 2024.

It is noted that the attachments referenced within the version of the Martens report provided for our comment (document reference 'P2410492JR01V01 250313', dated 13 March 2025) did not include the appendix attachments. Our review and comments therefore respond to the text of the report.

2. Background Context

Douglas are aware that a neighbouring land parcel to the south, adjoining the site, is re-zoned for residential development and that Martens was involved as Council's geotechnical consultant in the latter stage of a recent Development Management Process. Douglas was involved in completing geotechnical engineering services for that land parcel, and it is noted that the neighbouring land has similar geological conditions and slope characteristics as the current site.

The type and depth of investigation carried out for both adjoining land parcels (and subsequent analysis and reporting) was broadly similar and is considered by Douglas to be in accordance with industry standards and to provide a suitable level of information to support rezoning applications.

Further site investigations are typically required for subsequent Development Application (DA) stage(s), to assist with development of design drawings and for construction stage planning. These investigations are generally carried out to obtain site-specific data (such as on the seasonal variation of groundwater levels), and to enable preparation of specific advice for the proposed development layout on issues such as drainage, foundations, and engineering works, and other measures required to maintain slope stability (including for upslope properties and infrastructure).

It is understood that Council has initiated preparation of a draft development control plan (DCP) framework for hillside development, which will provide expectations and site-specific guidance for future detailed engineering design and mitigation strategies for later DA stages. The draft DCP framework has not yet been provided to Douglas.

It is Douglas' opinion that most of the peer review comments predominantly relate to engineering design matters to be addressed during later DA stages, including recommendations for further groundwater monitoring, more detailed slope stability modelling, investigation of geological faults (which are well below the depth of expected development excavations), and loading effects from existing infrastructure.

It is Douglas' opinion that the level of geotechnical investigation and assessment provided is appropriate for rezoning purposes, and that additional site-specific engineering investigations will need to be undertaken for future DA stages.

3. Response to Comments and Queries Raised

The Martens 'draft' geotechnical peer review report has presented various potential issues regarding geological conditions, slope stability, and possible future groundwater scenarios, and recommends that further geotechnical investigations be carried out at the rezoning stage to enable development of detailed engineering and design.

Responses to the comments and queries raised in the Martens 'draft' geotechnical peer review report are presented in Table 1 on the following page.

It is Douglas' opinion that the level of detail of site investigations completed, and geotechnical advice presented in the Douglas 2024 report is consistent with that provided for recent projects nearby, which have similar site characteristics and geotechnical issues.

Table 1: Responses to Comments and Queries raised in the Martens report

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
1	2.2.3	There is an anomalous saddle in the Southern Ridgeline, at the intersection with the Western Ridgeline and at the eastern end of the Southern Ridgeline	- The two areas of lower elevation along the ridgeline are considered to be zones where the layer of sandstone (which forms a more resistant 'cap' on the ridge top) has either - been 'breached' (i.e. eroded), or - was never present (i.e. sandstone lenses rather than a continuous layer), or - was thinner or of a more interbedded lithology (and thus more susceptible to weathering) than due to the action of persistent faulting. - Test pits completed near these locations encountered a relatively shallow thickness of soil overlying weathered bedrock. These features are therefore not considered anomalous.
2	4.1 (Item 1)	The toes of some slides along the western and north-western slopes of the Western Ridgeline... extend further than noted on DP's figures	- Site features observed by Martens could be due to an erosional feature known as 'slope wash'. - The potential for soils formed during this erosion-driven process (i.e. due to surface water flowing downslope) was included in Section 9.1 of the Douglas 2024 report. - The position of the boundaries on the Douglas figures was intended to be approximate for re-zoning and planning purposes, to be further refined during the construction stage.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
3	4.2.1	Inadequate and simplistic generalisation of geological model (report referenced is their DP 2024c, page 18)	The description presented in Section 7.1 of the referenced report was part of a general description of the regional geology, obtained from published sources for the general area. The description for this part of the report is intended to be generalised for a broad, regional area, and is therefore considered appropriate given its position within the text of the report.
4	4.2.1	Geological model focused on near surface conditions affected by former landsliding, with a failure plane near the top of the rock	- The proposed development and engineering works (including cut and fill earthworks, retaining walls and subsurface drainage) will by necessity be focussed on and will interact with the 'near surface'. - It is therefore considered appropriate to focus the investigation, models and advice on the vertical envelope and lateral extent of the proposed development area. - For future DA stage investigations, future site investigations could include investigation to deeper levels, to confirm the geological model at deeper levels of the hillside and below the depth of earthworks and foundations.
5	4.2.1	Little emphasis placed on assessing the broader scale rock structure affecting the region (and the Site) in developing an understanding of reasons for variations in ground conditions	- The Bringelly Shale rock unit is known to be variable in composition comprising mudstone, sometimes very carbonaceous and with bands and lenses of sandstone and siltstone of variable thickness and of variable lateral extent. - This variability is due to the environment in which these materials were deposited, and therefore it should be expected that there will be lithological variations in the ground conditions and subsurface profile within the site. - In Douglas' opinion, assessing in detail the broader scale rock structure to depths which will not be realised by the proposed depth of excavations would provide little additional value for risk management.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
5 (cont)			- Further, from Douglas' experience, regional faults only really have significance where they interact with deep, steep-sided excavations which are not part of this proposed development. - Site investigations during the DA stage could target areas where ground conditions are suspected to vary.
6	4.2.1	Little emphasis placed on assessing... the triggers that have likely caused failure	- Potential triggers for land instability have been raised and discussed multiple times in the Douglas 2024 report, including: - Section 11.1.2 (for steep hillside slopes referred to as geotechnical model 'Terrain Unit 2'); - Section 11.2.2 (Risk Assessment Methodology); - Section 11.2.3 (Identified Slope Instability Hazards, for slow, intermediate-depth failures); and - Section 12 (Slope Stability Constraints: sub-sections 12.2 and 12.3). - Potential triggers included an increase in pore water pressure within the soil and rock (modelled elsewhere in the report as up to 1 m above the soil-rock interface), clearing of vegetation (including by bushfire), erosion, undercutting, and earthquake. - Each potential trigger for instability was considered in preparing the report. The trigger considered to have the highest potential of occurring for current slope conditions was an increase in pore water pressure. This trigger plus earthquake loadings were considered in the slope stability modelling.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
7	4.2.1	Little emphasis placed on assessing... the failure mechanisms of the ground movement affecting the site	- The inferred failure mechanisms of ground movement for the identified slope instability hazards are discussed in Section 11.2.3 of the Douglas 2024 report. - These were further assessed prior to and following completion of rectification and hazard reduction works, as presented in Table 12 and Table 13. - The identified potential failure mechanisms include translational slides, rotational failures and debris slide failures. - The proposed rectification and hazard reduction works are considered to address each of these potential failure mechanisms, as those works would remove movement-affected materials (including disturbed weathered rock) and replace them with compacted engineered fill in conjunction with engineering works (to be further detailed and designed) to achieve a FoS>1.5.
8	4.2.1 (Item 1)	The generalisation of the geology: "shale and interbedded sandstone and siltstone are part of the Bringelly Shale geological formation" is inadequate. Should be separated into areas affected by sandstone dominated geology and shale/siltstone/laminite dominated geology	- Further sub-division of the site geology could be carried out relatively easily by drawing a boundary between the top of the sandstone-capped ridges and the lower slopes where sandstone is not present, although this has been implicitly taken into account with the stability risk zonation. - Where supported by site data, some of the models incorporated a weaker layer of rock which was modelled using soil properties. Details are provided on the section output drawings. - It is Douglas' opinion that introducing sandstone layers and bands into the slope stability model for Section 6 will not result in the calculation of a substantially different or a reduced factor of safety.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
9	4.2.1 (Item 2)	The... geological profile has not considered the presence or impact of deep joints / faults	- The deep joints and sub-vertical faulted zones encountered in boreholes are ancient features, present within the hillside many metres below the limit of earthworks for the proposed development. - As understood from the Martens report, a continuous feature (i.e. “deep joint or fault”) is interpreted to extend into the site from the upslope Lot, being oriented approximately east-southeast to west-northwest. It is Douglas’ experience that one of the laterally and vertically extensive joint sets that is typically present in the Bringelly Shale has this orientation. This orientation is not an adverse orientation for excavation along the topographic contour in the western part of the site, or on the eastern side of the hilltop. - There are no indications in the cored boreholes of a correlation between recent ground movement (i.e. the base of sliding) and faulting of the rock. - The presence of sub-vertical joints and fault zones at greater depth in the rock was considered during preparation of the Douglas 2024 report, however, Douglas did not identify credible trigger or failure mechanisms associated with them.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
10	4.2.2 (para 2)	We consider the groundwater monitoring carried out to date is insufficient to provide reliable data and to carry out an appropriate assessment of impacts on the proposed development or on surrounding land	- Measurement and monitoring of groundwater levels was carried out during and following the fieldwork period and remains ongoing for eleven standpipe piezometers. - The results of the monitoring prior to the date of the report are included in Appendix E of the Douglas 2024 report. - We have been engaged to complete manual and automatic measurement of water levels in each of the piezometers for a total duration of 24 months. The results of the extended groundwater level monitoring are to be presented within a standalone report at the conclusion of the monitoring period.
11	4.2.2 (second item 1, part)	The transient nature of the seasonal fluctuations was not assessed or considered in any assessments	- Groundwater level data available from previous works at the crest of the hill (currently occupied by two large water reservoirs) was reviewed and data presented in the Douglas 2024 report. - Groundwater measurements and monitoring data obtained from the eleven standpipe piezometers prior to reporting was also reviewed. Most of the standpipe piezometers installed into the soil and shallow rock profile were 'dry' (prior to and following completion of permeability testing), including following periods of rainfall, hence an assessment of water fluctuations was not possible but has been taken into account with the slope stability analyses. - Modelling of slope stability adopted a scenario where the water level rose 1 m above the soil-rock interface, which assumes that each of the underlying layers in the model is saturated.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
11 (cont.)			An assessment of transient or seasonal fluctuations in the soil and shallow rock will be included in the groundwater monitoring report (future work, already commissioned to be carried out).
12	4.2.2 (second item 1, part)	Should deeper groundwater levels rise as a result of heavy or prolonged rainfall periods, these conditions would have significant impact on the toe of the ridgeline slopes...	- Standpipes installed from the crest of the ridgeline and screened within the underlying rock (refer Reference item 11 above, and both Section 4 and Section 5 of the Douglas 2024 report) encountered groundwater at depths of 19.8 m and 23.0 m below the ground surface. - Available water level data reviewed by Douglas indicates there was not a substantial rise in water level over time, or in response to rainfall events. - Groundwater level data from piezometers screened within either deeper or shallower sections of rock did not indicate that artesian or sub-artesian groundwater conditions were present. - The completed stability models presented in the report included a scenario for a high groundwater table close to the ground surface, already covering the potential for sub-artesian or artesian groundwater conditions (which Douglas does not believe is present at this site). - The provided rectification and hazard reduction measures include installation of sub-surface drainage, which would lower the water table and therefore further reduce the risk of slope instability, as presented in the report.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
13	4.2.2 (second Item 2)	DP has not considered the local groundwater regime, including potential presence of an elevated ephemeral groundwater, due to influences imposed by geological structures beneath the Site	- Standpipe piezometers were installed at multiple locations and various positions up and down the slope, to assess the local, near-surface groundwater regime. - None of the standpipes have indicated that geological structures beneath the site (if present) have or are influencing the local groundwater regime, rather it is the geology (i.e. interbedded sandstone and mudstone) that appears to be influencing the local groundwater regime by causing localised, ephemeral seepages from along the sandstone/mudstone contacts. Notwithstanding the above, a conservative approach has been adopted with the stability analyses which included assessment of a scenario of an elevated groundwater table up to 1 m above the soil-rock interface. - Measurements of standpipe piezometers previously installed at the slope crest (by both Douglas and others, within the area currently occupied by water reservoirs) did not indicate an elevated phreatic surface (refer Section 5 of the Douglas 2024 report). - Intervals during drilling where there was a loss of drilling flush ('water loss') was considered during preparation of the report, also taken to indicate that artesian conditions are not present. - As previously noted in Reference item 12, the potential for an elevated groundwater level within the slope was considered by the inclusion in the slope stability models of a scenario where the water level rose 1 m above the soil-rock interface (which assumes that every underlying layer in the model is saturated).

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
14	4.2.2 (second Item 3, part)	Should groundwater be present within the depth of excavations required for remedial works, any dewatering impacts on upslope land... have not been considered	- Groundwater is not indicated to be present within the likely depth of proposed excavations during rectification or earthworks, other than as periodic, low flow seepage, as indicated by: - almost all the piezometers remaining dry during the monitoring period (including over the three months following completion of the Douglas 2024 report), - the extended time required (in the order of weeks) following completion of 'falling head' permeability testing for water levels to return to 'pre-test' levels, and - standpipe piezometers installed in upslope parts of the site having measured water levels below the depth of proposed excavations. - Even if the excavations do locally intersect seepage, the localised dewatering will stabilise, not destabilise the upslope. - The boreholes indicate that the bedrock is fractured, and the drilling 'water loss' indicates that if groundwater did enter the upper part of the bedrock profile that it would be able to enter that fracture network and move through the fractured rock mass, as is currently the case. - Groundwater within upslope areas of land (inclusive of seepage) is already being drawn downhill via gravity, and so 'dewatering' of upslope areas is already occurring. - It is Douglas' opinion that there would be negligible effects on upslope areas of land due to the shallow excavations for the proposed development.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
15	4.2.2 (second Item 3, part)	Should the remedial measures include removal of groundwater, no consideration was given to the impacts on down grade watercourses	As outlined in Reference item 14, appreciable volumes of groundwater are not expected to enter any of the proposed shallow excavations, therefore, it is unlikely that interruption to natural seepage flows replenishing downgrade water courses would be affected by the proposed works.
16	4.2.2 (second Item 3, part)	No advice was provided on management of groundwater removal to avoid adverse impacts on surrounding land, water courses and infrastructure	- As outlined in Reference items 14 and 15, groundwater removal is not expected to be required given the very low groundwater yield from the proposed shallow excavations and as measured within the standpipe piezometers, and the low rock mass permeability indicated from permeability testing. - Based on the minimal volumes of water likely to be present within the depth of excavations, following completion of the rectification and hazard reduction works the potential for adverse effects on surrounding land, water courses and infrastructure is low.
17	4.2.3 (page 23)	DP initially advised that development within the 'major' constraint area was to be avoided, however, after further additional investigations and assessments, DP considers this no longer to be the case	- As per Section 5 of the Douglas 2024 report, our previous geotechnical review concluded that "the upper hillside slope areas can be made suitable for development following the implementation of necessary engineering works (which may need to be substantial). The engineering works and development controls needed for the upper hillside slope areas were to be refined based on further geotechnical site investigations (i.e. this report)." - As per advice in Section 12.4 of the report, remedial and hazard reduction works would need to be implemented to reduce the potential for slope instability, in conjunction with the implementation of other engineering recommendations.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
18	4.2.3 (page 24)	There are triggers (for slope movement) other than moist ground conditions... that have led to slope movement	- Other potential triggers for slope movement were identified in the report, as listed in Reference item 6. - The maximum measured bedding dip angles of shale bedrock in boreholes was about 10 degrees, though was typically 5 degrees or less (where bedding plane parting defects were measurable). The presence of bedding parting defects is not a trigger for slope instability. - As previously outlined in Reference items 12 and 13, previous groundwater level measurements do not indicate the presence of artesian or sub-artesian pressures in the bedrock at the site. - Following completion of the rectification and engineering works, which will include surface and subsurface drainage, stormwater runoff and stormwater infiltration will be managed so that there is no net increase in stormwater infiltration. Any changes to the groundwater conditions due to the proposed works are expected to lead to improvements to, rather than degradation of, slope stability therefore the potential for landsliding is reduced rather than increased.
19	4.2.3 (page 24)	Proposed remedial measures are... focused on the soil and upper movement affected rock profiles without considering the need for more substantial mitigation solutions to address alternate landslide triggers	- The landslide triggers considered are previously noted in Reference item 6 and included a variety of potential triggers. - The depth of disturbance due to landsliding does not extend to greater depth, and varies between sliding over residual clay soils, sliding over the top of weathered rock, or sliding through rock, as recorded on the borehole logs and summarised in Table 3 of the Douglas 2024 report. - The Martens report incorrectly refers to 'clay seam' defects (CS) as 'crushed seams'.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
19 (cont.)			There are no indications in the cored boreholes of any relationship between recent ground movement (i.e. the base of sliding) and faulting of the rock, and therefore 'mitigation solutions' for these features are not considered to be required.
20	4.2.3 (page 25)	No consideration given to loading induced by the SWC water tanks and the support piles on the ridgeline crest	- Douglas is aware that the two water reservoir tanks are supported on piles founded at greater depth within the underlying stronger shale bedrock (pile toes believed to be at depths of more than about 20 m). - The pile records supplied to Douglas for the closely-spaced pile retaining wall (encircling the Sydney Water site) indicate the piles are founded at substantial depth in medium to high strength, slightly weathered to fresh shale. - The 'DD6 Geotechnical Design Report' prepared by GHD Pty Ltd for the cantilever contiguous piled retaining wall at the hill crest considered the effects of surcharge loading on the slope, and their calculated global wall stability had a factor of safety of more than 1.5. - The pile retaining wall has been designed not to fail when surcharged by heavy machinery operating next to the wall. - Loading on the slope due to the water reservoirs and piled retaining wall based on the supplied information was considered to be negligible, and therefore a surcharge was not added into the slope stability models. - The water tank owner will be consulted as part of DA stage works, and their requirements will be addressed in the design of upslope engineering works.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
21	4.3 (Item 1a)	For 'Layer 4' (weathered rock), no consideration was given to stressed rock... decomposed and extremely weathered zones within this profile	The parameters selected for 'Layer 4' in the slope stability models are considered to be conservative, particularly as it was modelled as if it was a soil and not as a rock with up to low strength layers.
22	4.3 (Item 1b)	No consideration... given to... the filled platform and additional loading imposed by the water tanks and... pile walls...	- As per Reference item 20, the tanks and walls are founded at greater depth in medium to high strength rock. The piles are connected by a capping beam which provides lateral restraint at the pile 'head'. - It is expected that loads from the tanks and retaining wall are transferred to the foundation material (medium to high strength bedrock).
23	4.3 (Item 2a)	Inconsistency with Model for Section 2, depth to medium strength rock of 8 m adopted (instead of) approximately 14.8 m	- The depth to the first layer of medium strength rock has consistently been adopted in all the models. - There is no evidence of sliding through the rock within any of the boreholes below the section of medium strength rock which has been adopted. - The calculated critical slip surface (i.e. lowest factor of safety) is within the overlying colluvial soils, and increasing the depth to medium strength rock in the models (and replacing it with 'Layer 4') is not expected to change the calculated minimum factor of safety (FoS).
24	4.3 (Item 2b(i))	Inconsistency with Model for Section 3, depth to medium strength rock of 6 m adopted (instead of) 21.1 m	The Martens report incorrectly states that medium strength rock was not identified above 21.1 m. A layer of medium strength shale was encountered at 5.17 m, which was below the base of disturbance due to previous landsliding.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
24 (cont.)			- The Martens report incorrectly states that 'crushed seams' were encountered in this borehole. The defect code 'CS' refers to clay seams. - As per Reference item 23, the depth to the first layer of medium strength rock was adopted in the model, there is no evidence of sliding through the rock below this depth, and the calculated critical slip surface is along the interface of colluvium and very low to low strength rock (and increasing the depth to medium strength rock is not expected to change the minimum FoS.
25	4.3 (Item 2b(ii))	No colluvium is present (in upslope area of the model)... based on (Martens) site observations the upper slopes are also affected by colluvium	- The information provided to Douglas for prior test pit DD6-TP05 and prior borehole I6 were logged as not encountering colluvium, whereas other contemporary test locations at other locations around the hilltop were logged as having colluvial materials. - Though not explicitly stated in the model assumptions section of the Douglas 2024 report, the soils currently exposed at the surface are inferred to be recently placed soils (rather than colluvium) based on the presence of soils with a disturbed appearance, a sediment fence positioned part-way down the slope, and the vegetation in this area being predominantly weeds. - The models were extended a substantial distance into the adjoining property Lot. Even if the extent of colluvial soils was moved further upslope in the Model, the critical slip circles are still present at relatively shallow depths inside the proposed development footprint.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
26	4.3 (Item 2c (i))	Inconsistency with Model for Section 4, rock levels have been taken as near ground surface level upslope of BH604 without reasoning and between BH604 and BH508P	- The encountered rock depth in borehole BH604 was 1 m, rock depth at BH508P was 2.2 m, and extremely weathered rock was encountered in prior borehole CB1-BH1 at 0.3 m (and very low to low strength rock at 2.0 m: test location shown on Drawing 3 and Drawing 7). It is noted that borehole CB1-BH1 is offset from Section S4, however, this part of the site is also now covered by an area of car parking and road. - The rock level in the model was based on the depth to rock at the test locations, which could be described as 'near the ground surface'. - Borehole BH508P was drilled in a flatter, terraced area of the hillside slope, and it was inferred in preparation of the Model for Section 4 that the thickness of 'Layer 4' rock was similar between the upslope and downslope test locations (i.e. BH508P and BH604). This assumption is considered reasonable.
27	4.3 (Item 2c (i))	Inconsistency with Model for Section 4, depth to medium strength rock of approximately 4 m adopted (instead of) 11.8 m	Refer to Reference item 23

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
28	4.3 (Item 2d (i))	Inconsistency with Model for Section 5, absence of Layer 3 or 4 (in TP516)... we consider the inference that all materials beneath the residual soils are... medium strength is incorrect based on... BH605	• 'Layer 3' in the model refers to 'failure plane through rock'. The profile in TP516 included colluvial soils overlying residual soils, overlying medium strength undisturbed rock. There was no failure plane through the rock as the rock at the base of the test pit was undisturbed. Therefore, it is considered reasonable to assume there is no Layer 3 for Section 5. Layer 4 was included in Section 5 at the location of TP516. • Borehole BH605 encountered a boulder and disturbance to 5.1 m depth, and therefore the base of disturbance was taken as 5.1 m and utilised in the Model for Section 5. • The interpretation in the Martens report that the profile adopted for Section 5 of the Douglas 2024 report is incorrect is rejected on the basis that the model is based on the encountered profile and conditions at the test locations without further reinterpretation. • The subsequent flow-on effects noted in the Martens report are therefore not considered further.
29	4.3 (Item 2d (ii))	No colluvium is present (in upslope area of the model)... based on (Martens) site observations the upper slopes are also affected by colluvium	• The information provided to Douglas for prior borehole P2 had 0.7 m depth of colluvium, which was adopted in the model and extended further upslope to an area intended to depict the bitumen-surfaced access track. The Martens report incorrectly states that no colluvium has been adopted for this part of the Model. • As per Reference item 25, though not explicitly stated in the model assumptions section of the Douglas 2024 report, the soils currently exposed at the surface are inferred to be recently placed soils (rather than colluvium).

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
29 (cont.)			The models were extended a substantial distance into the adjoining property Lot. Even if the extent of colluvial soils was moved further upslope in the Model, the critical slip circles are still present at relatively shallow depths inside the proposed development footprint.
30	4.3 (Item 2e (i))	It is unclear why this section was adopted for analysis	This section was adopted to model the factor of safety against slope instability on the Southern Ridgeline, which is north facing.
31	4.3 (Item 2e (ii))	Borehole BH606 identified a disturbed zone at 1.58 m and... decomposed and crushed seams and zones (to depths of) up to 7.14 m	- Borehole BH606 was located 2.6 m higher up the north-facing slope relative to a nearby test pit (through which Section 6 was drawn), and encountered disturbance inferred to be associated with landsliding to 1.58 m. This depth has been adopted in the Model for Section 6. - The Martens report incorrectly states that 'crushed seams' were encountered in this borehole. The defect code 'CS' refers to clay seams. - There is no evidence of disturbance in the ~6m of low or medium strength rock above the weathered seam of rock pointed out by Martens, and it has been concluded that the base of landsliding is as per the depths noted on the investigation logs and summarised in Table 3 of the Douglas 2024 report. - The Model adopted in Section 6 is considered to represent the interpreted ground conditions with reasonable accuracy, and therefore the calculated FoS is also considered to be reasonable.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
	4.3 (para 1, page 27)	Slope stability assessment not 'entirely' carried out in accordance with AGS 2007	
32	Point 1	Did not consider original slope conditions and triggers that have led to the presence of colluvial profile in the first instance	- Original triggers that have led to the formation of the colluvial profile have been considered, refer to Reference item 6. - The stability assessment was carried out using the same methodology as for other nearby stability assessments, including the south-facing slopes of an adjoining site. - The 'original' slope conditions for the proposed development of the site are the current, present-day conditions. - Based on the above points, Douglas disagrees with the Marten assessment.
33	Point 2	Did not consider landsliding in parent material or residual soils from uphill	- As presented and discussed in multiple places in the Douglas 2024 report, sliding through the underlying rock and through residual soils has been assessed, and was based on the type of underlying material (e.g. residual soil). - The various depths of landsliding are depicted on the slope stability Models (e.g. Drawing 20). - Based on the above points, Douglas disagrees with the Marten assessment.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
34	Point 3	Did not consider landslides due to increased water pressures, or softened soils	- Each of the slope stability models assessed the FoS for a case where the water level rose by up to 1 m above the soil-rock interface. - The parameters adopted in the analyses are considered to be conservative. - Based on the above points, Douglas disagrees with the Marten assessment.
35	Point 4	Did not consider additional loading applied to the slope as a result of existing development	- As per Reference item 20, the existing, upslope development (water tanks and retaining wall) are founded on piles. Therefore, the loading on the downslope part of the site (within the Site) is considered to be negligible. - Based on the above, Douglas disagrees with the Marten assessment.
36	Point 5	Did not consider triggers other than... weakened colluvial soils / weathered rock, and perched groundwater at the soil / rock transition, such as deeper groundwater having increased pressures that will impact... rock at depth	- As previously outlined in Reference item 6, each potential trigger for instability was considered in preparing the report, and the triggers considered to have the highest potential of occurring for current slope conditions was an increase in pore water pressure and earthquake. These were then considered in the slope stability modelling. - As previously outlined in Reference items 12 and 13, previous groundwater level measurements do not indicate the presence of artesian or sub-artesian pressures in the bedrock at the site. - The modelling carried out has adopted a case where the groundwater level has been raised by up to 1 m above the soil-rock interface, inclusive of all underlying layers (rock as well as soil), demonstrating this issue has been considered.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
37	Point 6	Did not consider saturation of soils between drains and resultant softening of these soils along the transition to (less permeable) rock... groundwater is expected to flow down grade and not sideways towards the subsurface drains	- The advice in the Douglas 2024 report regarding drains included that subsurface drains would need to be installed and would be required along upslope/downslope lot boundaries (as a minimum). - The spacing, positioning and design of drains is expected to be addressed and optimised at a later stage of the development and can be designed to solve this potential scenario.
38	Point 7	Did not consider constructability of remediation solutions, including excavation >5m of soil and weathered rock into steeply sloping land, with potential rock structure dipping into the excavation and extending into the zone of influence of the SWC water tank foundations	- Section 5 of the Douglas 2024 report advised that upslope engineering works will be needed to support the adjoining upslope land and included that construction of retaining walls together with installation of subsurface drainage would be needed to ensure the stability of adjoining land is maintained. - As the proposed development is at an early stage, the civil design of rectification works is also at an early stage. It is considered appropriate for refinement of engineering solutions to be carried out at a later stage of the development, following re-zoning of the land (the current stage). This would include such activities as constructability and safety in design. - Areas of the site requiring excavation to greater depths (such as for removal of movement-affected material) could be carried out in 'hit-and-miss panels', and near the upslope Lot boundary a retaining wall could be designed that would satisfy requirements for permanent stability, including those of the upslope neighbour. Detailed plans to be prepared at a later DA stage.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
39	Point 8	Did not consider an increased rainfall potential due to climate change	- It was noted in Section 9.3.1 of the Douglas 2024 report that groundwater levels may fluctuate over time in response to climatic variations. - As previously noted, the stability assessments assumed a case where the water level was raised up to 1m above the current soil-rock interface, demonstrating that a higher water level within the hillside slope was considered. - Subsurface drainage systems can be designed for an increased rainfall (such as due to climate change).
40	4.3 (page 27, second Point 1)	In Martens opinion no calibration (of the stability models) was carried out and as a result the analyses are likely flawed	- Calibration of the parameters used in the modelling was carried out using the steepest section of slope with the most obvious features of previous landsliding, including flatter and steeper sections of slope. - Modelling started with parameters which had been used to analyse other projects with similar geological profiles, which were systematically adjusted and included sensitivity checks. The parameters arrived at through this process were compared with parameter ranges for these materials previously advised by a geotechnical consultant peer reviewer (GHD) and are considered to be conservative. - The process followed for model calibration was reviewed as part of the reporting process, and therefore the Martens assertion of 'no calibration and therefore flawed outputs' is rejected.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
41	4.3 (page 27, second Point 2)	The increase in FoS when earthquake loading is included in the model is considered highly irregular (and) no qualifications for such an increase were provided.	- The earthquake loading scenario uses total stress parameters, to model the short term seismic shaking event which is 'undrained', unlike the 'effective' long-term parameters used for the other analyses (guidance is given on this subject in a paper by the New Zealand Geotechnical Society). - The calculated FoS for the earthquake scenario is a function of the total stress parameters, and Douglas considers that the increase in FoS should be expected and therefore is not unusual.
42	4.3 (page 28, second Point 3)	No consideration was given to the potential for fully softened material conditions affecting the ground profile, given the likely long term ground water impacts on the soils and weathered rock	- Based on Douglas experience, fully softened material conditions are not expected to develop, due to the undisturbed ground profile having a constant moisture content. - Fully softened conditions are not present within the ground profile now, and following completion of the rectification and hazard reduction works (and engineering works) this situation is considered unlikely to change. - There is consistently higher strength rock at greater depth in all the boreholes (including upslope of the Site). It is likely that these materials would be subject to seepage flows along rock defects (i.e. bedding planes and rock joint). By the logic advanced by Martens, these materials would already be fully softened due to the presence of groundwater, however the evidence indicates that this has not occurred.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
43	4.3 (page 28, second Point 4)	DP has adopted a 'Tolerable' risk as satisfactory for the development... Martens notes that an 'Acceptable' risk level should be adopted... which is qualitative described as low or very low risk	- The paragraph referred to by Martens does mention 'Tolerable' risk, however, this was in the context of the current site conditions being 'Moderate' risk to property (refer Table 12 of the Douglas 2024 report). - The prior sentence of that same paragraph states that works will need to be carried out to reduce the risk to an 'Acceptable' level. Further support for this is that the two following tables refer to 'Low Risk' following hazard reduction works. - It is considered that what Martens state should be adopted has actually already been adopted in this report.
44	4.3 (page 28, second Point 5)	DP's assessment of risk to life has only considered slow moving intermediate depth slides... which is inconsistent with the presence of fast moving slides with extensive run out distances...	- Following completion of rectification and hazard reduction works, it is considered that most of the identified potential hazards affecting the residential development (tabulated in Table 12, for example) will have been removed or stabilised by engineering works, except for the intermediate depth slide hazard which is why it alone was considered in the risk to life assessment. - Following excavations, installation of drainage, placement of engineered fill and completion of engineering works (e.g. retaining walls) which remove groundwater from the near-surface slope (i.e. remove the trigger), the likelihood of the other hazards occurring was considered to be 'barely credible' to unlikely'. - Based on the above two points, Douglas considers it reasonable to only consider the intermediate depth slide for the assessment of risk to life.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
44 (cont.)			There is no evidence or data for this site that there have been 'fast moving' slides, and in Douglas' experience the rate of movement of slides in this geological terrain (through or over rock) are not rapid.
45	4.4	Marten holds the opinion that the recommended remediation and hazard reduction measures are flawed based on the inconsistencies and inadequacies previously discussed	We reject this statement. The points previously raised are discussed in detail in previous Reference items.
46	4.4 (Point 1)	No consideration... given to potential other trigger(s) than saturation of surface soils... such as localised weak rock structure and high hydrostatic pressures in the rock profile at greater depths.	- We reject this statement; other triggers were considered, as previously outlined. - There is no evidence of sliding through the rock within any of the boreholes below the sections of medium strength rock which have been adopted, hence movement of the deeper parts of the rock profile are considered not to be a credible mechanism of slope failure. - Groundwater level measurements within the hillside slope (as previously outlined and referred to in the Douglas 2024 report) are not indicated to have artesian or sub-artesian pressures. Therefore, the potential trigger for reactivation of sliding is considered not to be a credible trigger for slope failure. - Subsurface drainage installed in the slope would intercept and remove groundwater seepage, thereby eliminating this trigger mechanism.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
47	4.4 (Point 2)	Suggested benching of excavations (grades of no steeper than 8H:1V in slopes of >2H:1V)... would require significant over excavation	- Martens have misunderstood the advice set out in Section 13.2 of the Douglas 2024 report. - As described in the dot point referred to by Martens, the surface will need to be benched prior to placement of new fill for slopes which currently have a slope grade steeper than 8H:1V. - Over-excavation is not proposed for this site, rather our recommended design guidelines for the development of concept design plans (Section 13.4 of the report) include a cut and fill balance, to ensure the overall load on the slope is unchanged.
48	4.4 (Point 3)	Maximum cut batter height of 5 m... considered inappropriate for excavations along upslope Site boundaries	- Engineering works are proposed to be carried out adjacent to the upslope Site boundaries, to mitigate slope instability risks and to ensure the stability of the adjoining land is maintained (Section 5 of the Douglas 2024 report). - As per Reference item 38, the civil design of rectification works is at an early stage. It is considered appropriate for refinement of engineering solutions to be carried out at a later stage of the development, following re-zoning of the land (the current stage).
49	4.4 (Point 4)	No consideration was given to the risk of slope instability and associated impacts on the SWC compound upslope of the Site	- As per Reference item 48 engineering works are proposed to be carried out to mitigate any potential upslope impacts. - As per Reference item 20, the water tank owner will be consulted as part of DA stage works, and their requirements will be addressed in the design of upslope engineering works.

Reference Item	Query raised or comment in peer review report		Geotechnical Comments (Douglas Partners)
	Martens Report Section	Query or Comment	
50	4.4 (Point 4b (i) to (iii))	No consideration was given to the impact of the perimeter pile wall on the condition of the ridgeline crest (and of the potential for) increased stormwater infiltration into crest materials (and) deeper rock profile along the pile margins	- There is no current evidence there is perched groundwater, indicating that these conditions for stormwater infiltration and an increase in groundwater level is not currently occurring. - The potential hazard of the artificial release plane of soil and rock could be included in the assessment of future engineering works for this upslope part of the site, and mitigation measures could be designed. - Potential additional stormwater flows from the upslope land could be captured by surface drainage, to be included in future engineering works design. - The potential for an increase in infiltration to deeper levels of the rock profile from the margin between the piles and the soil is considered to be barely credible, based on wet concrete being placed into a bored hole, with it being more likely that infiltration into the slope will move downslope along the soil-rock interface (which would be intercepted by subsurface drainage).
51	4.4 (Point 5)	No consideration... given to the potential variable ground conditions across the site... associated with the presence of geological structures at the Site	- Refer Reference item 5 for a response to this comment. - Conservative parameters have been adopted in the slope stability Models, and a variety of slope geometry profiles have been assessed around the site. - Geotechnical input will be required during the construction stage of the project, to inspect the stripped surfaces and to confirm whether additional rectification is required (such as more excavation or installation of additional drains).

The comments and queries in the Martens conclusions have been addressed individually in various reference items in the above table. The itemised points in the Martens conclusion are based on and therefore rely upon their previous commentary. On this basis there is not an individual response for the eight listed points in Section 5 of the Martens report.

Their recommendations for additional geotechnical assessments include installation of additional deep piezometers, monitoring of existing inclinometers, installation and monitoring of additional inclinometers adjacent to the upslope boundary, further analysis of slope instability risk and stability analyses, together with during the detailed design and construction phases. These recommendations are assumed to be based on their conclusions, which have been addressed individually in the above table.

It is noted that ongoing monitoring of the existing installed inclinometers and piezometers is already being undertaken for an extended period (currently through to about December 2026).

4. Previous assessments

Douglas is aware that Martens has previously acted as a geotechnical consultant to Camden Council in connection with Land and Environment court matters, for an adjoining subdivision stage located on the southern side of the ridgeline, with geological conditions which are very similar. The ridgeline crest and flanking slopes of the ridgeline are the focus of the latest Douglas report (Douglas document reference 92225.11.R.001.Rev1, dated 20 December 2024). It is understood that the adjoining parcel of land, south of the site, is zoned for residential development.

5. Comments

Douglas' advice presented in the Douglas 2024 report is considered to be consistent with the methodology, approach and staging for the adjoining site to the south, which is part of the same ridgeline and has essentially the same geological profile.

Should you require any further information regarding the above, please do not hesitate to contact the undersigned.

Yours faithfully

Douglas Partners Pty Ltd



Huw Smith

Senior Associate

Reviewed by



John Braybrooke

Principal

Attachments: About This Report

Introduction

These notes have been provided to amplify Douglas' report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

Douglas' reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

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This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Engagement Terms for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather

changes. They may not be the same at the time of construction as are indicated in the report; and

- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, Douglas will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, Douglas cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, Douglas will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, Douglas requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. Douglas would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

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Appendix D JWP Stormwater Advice Letter



Date: 8/09/2025

JJ Cobbitty Developments Pty Ltd

Contact: Paul Hourigan

Phone: 02 9048 9888

phourigan@alwaysconsultancy.com.au

Attention: Paul Hourigan

Subject: Cobbitty Precinct Updated ILP – Stormwater Advice Letter

Hi Paul,

J. Wyndham Prince (JWP) has prepared the Water Cycle Management Strategy (WCMS) in September 2024 to support a Planning Proposal for the site located along the Northern Road and which forms part of Cobbitty Sub-Precinct 5, in the South Creek West Land Release Area.

JWP understands that the Indicative Layout Plan (ILP) for Cobbitty Sub-Precinct 5, has been updated in consideration of the Sydney Western City Panel's recommendation from the meeting held on 13 February 2025. The revised ILP repositions the detention basins previously proposed as "online" to third-order watercourses to be "offline" and outside the playing fields. The updated draft ILP prepared by Design and Planning in August 2025 is provided in Attachment A.

The WCMS is currently in the process of being updated to incorporate the proposed ILP (Aug 2025) changes, including detailed modelling to ensure that water Cycle and flooding outcomes are still achieved.

Currently, the drainage area considered in the ILP (Aug 2025) to manage the water quality and quantity of the proposed development is based on m³/ha assumptions derived from the previous ILP (Sep 2024) and detailed basin modelling. JWP is confident that the drainage area presented in ILP (Aug 2025) would be sufficient to achieve the water quality, water quantity and flood mitigation essential for the rezoning and development of the site.

The updated WCMS, in alignment with the ILP (Aug 2025), will be prepared to ensure that there are no adverse flood impacts external to the site and both the stormwater quality and quantity are effectively managed offline, while preserving the third-order watercourse riparian corridors in their current state to facilitate the gateway process for Cobbitty Sub-Precinct 5.

Yours faithfully

SABINA LOHANI

Technical Lead – Stormwater and Flooding



**j.wyndham
prince**

ATTACHMENT A – Updated ILP

LEGEND

- Subject Site
- 330kV Powerline Easement (Indicative)

Land Use

- Environmental Living (Maximum 10dw/ha)
- Low Density Band 1 (15 to 25dw/ha)
- Low Density Band 2 (25 to 30dw/ha)
- Medium Density Band 1 (30 to 40dw/ha)
- Open Space
- Open Space (Powerline Easement)
- Playing Field
- Drainage
- Water Body
- Online Dry Basin
- Existing House to be Retained
- Interface with Neighbouring Land to be Coordinated
- Riparian Corridor
- Environmental Conservation
- School (Education Investigation Area)
- Service Station
- Water Tower
- Road - Sub-arterial (4 lanes)
- Road - Sub-arterial (2 lanes)
- Road - Collector
- Road - Local
- Potential Future Road Connection
- Hilltop Investigation Area

