1.3 DA-23-00740 Supplementary Report
Supplementary report to the
Sydney Central City Planning Panel

Panel reference: PPSSCC-483

Development application

DA number	DA-23-00740	**Date of lodgement**	10 July 2023
Applicant	Riverstone Parade Pty Ltd		
Owner	Riverstone Parade Pty Ltd		
Proposed development	Integrated Development for site wide bulk earth works in 5 stages including importation of approximately 3.9 million cubic metres of fill material via approximately 340,000 truck movements, removal of existing vegetation, demolition of existing industrial structures, construction of 2 temporary haulage roads (one off Bandon Road and one off Garfield Road West) and the construction of drainage swales and sediment detention basins.		
Street address	36 Garfield Road West, Richards		
Notification period	8 November to 6 December 2023	**Number of submissions**	227 individual submissions including 12 in support, 7 confidential and 1 from Hawkesbury City Council

Assessment

Panel criteria Schedule 6 of the State Environmental Planning Policy (Planning Systems) 2021	• General development over $30 million. The Capital Investment Value is $83 million
Relevant section 4.15(1)(a) matters	• Environmental Planning and Assessment Act 1979 • State Environmental Planning Policy (Biodiversity and Conservation) 2021 • State Environmental Planning Policy (Planning Systems) 2021 • State Environmental Planning Policy (Precincts - Central River City) 2021 • State Environmental Planning Policy (Resilience and Hazards) 2021 • State Environmental Planning Policy (Transport and Infrastructure) 2021 • Riverstone West Precinct Development Control Plan 2009 • Central City District Plan 2018 • Blacktown Local Strategic Planning Statement 2020 • Blacktown Local Environmental Plan 2015
Original report date	28 November 2024
Panel meeting date and deferral	Panel meeting held on 28 November 2024. The Panel deferred the determination of the application until: • The Department undertake a review of all matters where Council's assessment report has indicated that the relevant consideration is satisfied on Departments studies or advice and advise the Panel whether the Department agrees with that conclusion. This should particularly address, but no be limited to, matters where consent cannot be granted unless a particular matter is satisfied (eg. Clause 3.27(2)(a) of Chapter 3 of the Central River City SEPP) • In circumstances where the Department cannot undertake the task, the Panel requests that the Department/Panel Secretariat engages on behalf of the Panel, expert advice to undertake an independent review of Councils

	assessment report as it relates to flooding considerations associated with the development, including advice and information received from the Department. The independent expert report is to provide conclusions on all relevant statutory and merit considerations, such as to enable the Panel to make a final determination on the application • The applicant submits the information identified as being required to satisfy Council's recommended deferred commencement conditions under the heading "heritage requirements", such that they may be assessed prior to the determination of the application • The applicant, at its discretion, may wish to consider addressing all other recommended deferred commencement conditions prior to determination.
This report date	8 July 2025
Report prepared by	Jared Spies
Recommendation	Approve, subject to conditions listed in attachment 3

Checklist

Summary of section 4.15 matters Have recommendations in relation to relevant section 4.15 matters been summarised in the Executive summary of the Assessment report?	Yes
Legislative clauses requiring consent authority satisfaction Have relevant clauses in all applicable environmental planning instruments, where the consent authority must be satisfied about a particular matter, been listed and relevant recommendations summarised in the Executive Summary of the Assessment report?	Yes
Clause 4.6 Exceptions to development standards If a written request for a contravention to a development standard (clause 4.6 of the LEP) has been received, has it been attached to the Assessment report?	Not applicable
Special Infrastructure Contributions Does the DA require Special Infrastructure Contributions conditions (section 7.24)?	Yes
Housing Productivity Contribution (for DA lodged on or after 1 October 2023) Does the DA require Housing Productivity Contribution Condition?	Not applicable
Conditions Have draft conditions been provided to the applicant for comment?	Yes
Biodiversity Is the land bio-certified land under the Biodiversity Conservation Act 2016?	Yes

Attachments

1. Attachment 1 Independent review of flood-related aspects of D A-23-00740 by Rhelm [**1.3.1** - 29 pages]
2. Attachment 2 Supplementary Review and Advice by Rhelm [**1.3.2** - 9 pages]
3. Attachment 3 Draft Conditions [**1.3.3** - 36 pages]
4. Attachment 4 Summary of Meetings [**1.3.4** - 3 pages]
5. Attachment 5 Brisbane City Council's Natural Channel Design Guideline, Nov 2003 [**1.3.5** - 14 pages]
6. Attachment 6 History of Flood Studies [**1.3.6** - 5 pages]
7. Attachment 7 Council Assessment Report - DA-23-00740 | PPSSCC- 483 to SCCPP Chair [**1.3.7** - 292 pages]
8. Attachment 8 Worley's supplementary flood risk impact assessment [**1.3.8** - 12 pages]

1 Executive summary

1.1 This supplementary report is the second report on this proposal. This report is primarily focussed on flooding and heritage matters identified by the Panel on 28 November 2024 when it resolved to defer determination of the application.

1.2 The content of the additional information in relation to flooding matters has been informed by both the:

1.2.1 initial independent flood review prepared by Rhelm – Refer Attachment 1

1.2.2 final report prepared by Rhelm – Refer Attachment 2

1.3 The final report prepared by Rhelm is based on the outcomes of a series of meetings convened by Council and resulting in additional information being submitted to Rhelm by:

1.3.1 The applicant and their consultants

1.3.2 Representatives of the Department of Planning

1.3.3 Blacktown City Council.

1.4 Rhelm's final report includes Table 1 on Page 3, which has been reproduced below. The structure of Table 1 is based on of the outstanding issues identified by Rhelm in its intial February 2025 report. Table 1 therefore provides a summary of the then outstanding issues, updated to provide a summary of the current status of each issue, taking into account the additional information that has been provided.

1.5 Based on the details provided in the table, three (3) issues remain outstanding, namely:

1.5.1 Confirmation of the storm event durations for the Eastern Creek and Riverstone Town Centre catchments

1.5.2 The projects ability to accommodate the "Manning flood modelling roughness factor" into the vegetation management plans that need to be developed and implemented across the site

1.5.3 The final detailed design of the outlet in respect of the previously proposed Bebo Arch drain (since replaced by a box culvert) to ensure appropriate scour protection is achieved.

Issue	**Summary of Matter/Issue (as per Independent Review, February 2025)**	**Addressed in Supplementary Material?**
Matters requiring clarification	Clarity required on the role of the FIRA and the overland flow assessment	Clarity has been provided along with specific confirmation of the storm event durations considered for the different models. The storm event durations tested vary from that understood to be the critical durations in the relevant areas. For example, the critical duration for flash flooding affecting areas east of the railway line is much shorter than considered in the JWP assessment for the 1 in 100 year flood event and the critical duration for Eastern Creek does not appear to have been assessed in the Worley (formerly Advisian) assessments. As such, it is not clear from the information provided as to whether the proposed development will

		have an impact or not. It is recommended that a deferred commencement consent condition be incorporated in any consent issued to address this matter.
	Riparian corridor roughness assumptions	Clarity has been provided on the assumptions. However, as a consequence this matter is not resolved and the concerns raised are considered to remain.
	Apparent Benefits (i.e. flood level reductions) in the Advisian (2023) report are unclear	This matter is generally considered to be resolved.
Issues to be addressed prior to determination	Unrepresentative conditions in the overland flow assessment	This matter is generally considered to be resolved.
	Council Assessment report identifies concerns with fill in the floodplain – the cumulative impact question should be addressed	This is a matter for Council to resolve. It is not considered necessary to achieve a net cut to fill balance from a flood risk perspective.
	Cut to Fill Strategy and Loss of Land above the PMF	A response has been provided identifying some land is retained above the 2024 Probably Maximum Flood level (17 hectares).
	Stormwater Infrastructure Design Issues	The outlet design matter requires comprehensive conditioning. The design solution in the JWP Civil Drawing Set (CD301, Revision B) appears to reference standard drawings that are for smaller culverts (2.5 m diameter or less). A bespoke design is required for this circumstance to avoid potential long-term impacts on the riparian corridor and adjacent property.
	Erosion and Sediment Control Issues: • Sizing of sediment basins • Sediment basin footprints • Proposed access arrangements for basins for maintenance in their temporary form.	This matter is generally resolved and can be conditioned.
	Integrated Water Cycle Management Strategy – to be submitted to accompany the application and meet SEPP (B&C) 2021 requirements	An Integrated Water Cycle Management Strategy report has been prepared. This report is considered generally adequate and related matters can be conditioned.

1.6 This supplementary report also considers additional information submitted by the applicant to address the heritage related deferred commencement conditions referred to in our original report at attachment 7.

1.7 The key issues that need to be considered by the Panel relate to the matters raised in its deferral and these are covered in Section 4 of this report.

1.8 Assessment of the amended plans and documentation against the relevant planning framework and consideration of matters by our technical departments has not identified any issues of concern that cannot be dealt with by deferred commencement conditions of consent.

1.9 The application is therefore satisfactory when evaluated against Section 4.15 of the Environmental Planning and Assessment Act 1979.

1.10 This report recommends that the Panel approve the application subject to the recommended deferred commencement conditions listed in attachment 3.

2 Previous Panel consideration of DA

2.1 The Sydney Central City Planning Panel met on 28 November 2024 to consider this development application and it made the following decision:

2.1.1 The Panel agreed to defer the determination of the matter to allow for further assessment and reporting on flooding and heritage issues associated with the development for the following reasons:

- The Panel identified flooding impacts as a key matter in the determination of this application.
- Council's report has identified statutory and merit-based matters relating to this issue, however, in many instances has deferred to an advice letter received from the DPHI as having addressed and/or satisfied the particular consideration, rather than carrying out or reporting on its own assessment.
- The Panel's understanding of the DPHI letter is that it cannot be construed as representing a detailed assessment of the application against many of the specific matters for consideration.

2.1.2 Consequently, the Panel considers that it is not in a position to be satisfied on certain 'jurisdictional' matters and merit considerations based on the assessment and information currently before it.

2.1.3 In addition, the Panel agreed to defer the determination of the matter until 31 March 2025 so that the applicant has time to submit the information identified as being required to satisfy Council's recommended deferred commencement conditions under the heading "heritage requirements", such that they may be assessed prior to the determination of the application, noting that heritage matters are of reasonable concern to the panel, local community and Council.

2.2 A copy of the original report is at attachment 7.

3 Background on actions taken since Panel deferral

3.1 After the Panel deferred determination of this application, Rhelm was engaged by the Panel to prepare an independent review of the flood related aspects of the application.

3.2 The Panel provided the applicant and Council with Rhelm's independent flood review (attachment 1 of this report) on 13 February 2025. In doing so, the applicant and Council were requested to review the Rhelm report and provide preliminary feedback by 19 February 2025. At this point, the Panel also:

3.2.1 confirmed that Rhelm would now work with Council as its consultant, to prepare a further report to the Panel in relation to this matter

3.2.2 noted that the timing for determination of the application outlined in the Record of Deferral may need to be updated, depending on the time required:

- by the applicant to respond to the matters in the Rhelm report requiring clarification and issues to be addressed prior to determination
- by Council to assess new material.

3.3 By correspondence dated 18 February 2025, Council responded to the matters raised in Rhelm's initial report.

3.4 By correspondence dated 11 March 2025 the applicant provided the following information:

- Sakkara (2025) Letter to Sydney Central Planning Panel RE: PPSSCC-483 – Blacktown – DA-23-00740 - 36 Garfield Road, West Richard, dated 11 March 2025 and the following attachments to that letter:
    - Worley Consulting (2025) Letter to Sakkara Riverstone West Precinct (Richards) site wide civil works (DA-23-00740) responses to Rhelm independent review report, dated 10 March 2025.
    - JWP (2025) Letter to Sakkara 36 Garfield Road West, Richards – Responses to Independent Review of DA-23-00740, dated 7 March 2025.
    - Worley Consulting (2025) Riverstone West Precinct (Richards) Sitewide Civil Works (DA-23-00740) - Integrated Water Cycle Management Strategy, prepared for Sakkara, March, Rev A.
    - GLN (2025) Letter to Sakkara RE: Planning Response to Rhelm Review of Flood-related aspects of DA-23-00740 Property: Lot 50 Deposited Plan 1295449; 36 Garfield Road West, Richards NSW 2765, dated 6 March 2025.

3.5 Commencing on 25 March 2025 a series of rolling meetings were convened to secure the additional information required by Rhelm and Council to inform this report to the Panel. Participants in those meetings comprised representatives of Blacktown City Council, Rhelm, the Department of Planning Housing and Infrastructure, the applicant and their consultant team. The details of the various meetings – who attended, points discussed and action taken, are summarised in Attachment 4.

3.6 Rhelm then provided a final supplementary review and advice (attachment 2 of this report) on 23 June 2025 which assessed all the additional information provided and outlined the issues that are still unresolved or resolved. The final supplementary review identifies the 3 remaining core issues, mentioned at 1.5.1 to 1.5.3 above

3.7 Separate to the above flood related matters and in order to address the heritage related issues identified by Council in the original assessment report, the applicant provided the following additional information:

- Conservation Management Plan by GBA Heritage Issue C dated March 2025 and associated Schedule of Conservation Works 1, 2 and 3
- Statement of Heritage Impact by Worley Consulting dated 14 April 2025

Our assessment of this information is also outlined in Section 4 below.

4 Assessment of Rhelm's independent flood review, supplementary advice and the applicant's additional information

4.1 Rhelm's independent flood review and supplementary advice

4.1.1 Table 7.1 of Rhelm's initial independent review provides a summary of key recommendations including matters requiring clarification and issues to be addressed prior to determination of this application. Table 1 in Rhelm's final report repeats these issues and confirms whether they have been resolved or not, based on the additional information provided. The unresolved items and how they can be addressed are outlined in Section 4.2 below.

4.1.2 Table 7.2 of Rhelm's initial independent review provided a summary of the review against the relevant statutory considerations. Table 2 in Rhelm's final report repeats the statutory considerations and confirms whether they have been resolved or not based on the additional information provided. These matters are covered in Section 4.3 below.

4.1.3 Rhelm's final report identifies the following three (3) remaining flood related matters, that require resolution:

- Confirmation of the storm event durations for the Eastern Creek and Riverstone Town Centre catchments
- The projects ability to accommodate the “Manning flood modelling roughness factor" into the vegetation management plans that need to be developed and implemented across the site
- The final detailed design of the outlet in respect of the previously proposed Bebo Arch drain (since replaced by a box culvert) to ensure appropriate scour protection is achieved.

These three (3) items are addressed in Section 4.2 below.

4.1.4 Rhelm's independent review listed 3 other matters for consideration. However, Rhelm's supplementary review closes with only 1 other matter for Council and the Panel to consider regarding the batter slope for the earthworks being located in the C2 zone. This means the other 2 matters have been resolved. Our position on the remaining matter is outlined in 4.4 below.

4.2 Unresolved items in Table 1 of Rhelm's supplementary advice and how they have been addressed

4.2.1 Storm event duration – Eastern Creek and Riverstone Town Centre:

Rhelm states that some clarity has been provided on the:

- role of the proponents (Advisian 2023) Riverstone West Precinct Sitewide Civil Works Flood Impact and Risk Assessment and the overland flow assessment.
- storm event durations considered for the different models.

The storm event durations tested vary from that understood to be the critical durations in the two areas. As such, it is not clear from the information provided to date, whether the proposed development will have an impact or not. It is recommended that a deferred commencement consent condition be incorporated in any consent issued to address this matter.

J Wyndham Prince also provided a further overland flow ciritical storm duration analysis on 7 July 2025. This was reviewed by Rhelm who is now more confident that the flood levels between the different storm event durations are not significant.

However, as recommended by Rhelm, a deferred commencement condition of consent is an acceptable means to resolve this item beyond any doubt. Council staff have therefore proposed a condition of consent in relation to this matter. This

deferred commencement condition has been recommended in the draft conditions at attachment 3 for the Panel's consideration. Council will engage expert independent advice to confirm compliance is achieved with this condition.

4.2.2 The projects ability to accommodate the “Manning flood modelling roughness factor" into the vegetation management plans

The Manning roughness factor is an input that is incorporated into flood models and other hydraulic calculations that reflects the likely roughness of a surface as water flows over it, thereby influencing the manner and time taken for water to move across a given area. Surface conditions that the Manning roughness factor can account for, range from:

- smooth surfaces such as concrete pipes, channels and roads; to
- less smooth surfaces such as long grass and small shrubs, to
- rougher surfaces such as closely spaces tress, dense shrubs, fences and other obstructions

Higher roughness values in a flood model indicate the likelihood of rougher surfaces being encountered, providing greater resistance to the movement of water. Lower roughness values confirm the likelihood of smoother surfaces and less resistance.

Brisbane City Council has published a document that provided greater guidance in relation to this matter, a copy of which is located at Attachment 5. This document has also been utilised to inform the consideration of this matter because it is referenced and endorsed by TUFLOW, the software used to undertake the modelling.

The Eastern Creek floodplain sits within the Sakarra site and currently comprises:

- Eastern Creek with adjacent vegetation that includes a variety of indigenous and exotic grasses, shrubs and trees
- some pockets of remnant Cumberland Plain Woodland
- extensive grazing lands and buildings of varying sizes associated with the former meatworks

The width of the flood plain between Eastern Creek and the 1 in 100 flood event level varies between approximately 62 m and 700 m.

Section 4.6 of the Riverstone West Development Control Plan 2009 (DCP) requires that environmental corridors must be rehabilitated and revegetated in line with the North West Growth Centre Waterfront Lands Strategy. This Strategy outlines ways to vegetate riparian corridors along waterfront lands and provides the required widths for riparian corridors. Eastern Creek is identified as a Category 1 watercourse in the Strategy. The associated core riparian zone is to be 40 m wide measured from top of bank with an additional 10 m wide vegetated buffer extending out from the edge of the core riparian zone.

Section 4.6 of the DCP also requires that revegetation of the riparian corridor along Eastern Creek must not increase impacts of flooding.

4.2.2.1. Eastern Creek flooding has been the subject of numerous studies over time, the details of which are summarised in Attachment 6.

4.2.2.2. At the time that the amendment to the SEPP was made, a flood model was developed for Sakarra by Advisian to inform their current bulk earthworks plans. It was endorsed by complimentary modelling work commissioned for the Department of Planning by Cardno.

In relation to these matters, Rhelm states that clarity has been provided on the riparian corridor roughness assumptions. However, this matter is not resolved and the concerns raised are considered to remain.

Information is still required to confirm the appropriate roughness factor to satisfy the requirements of Section 4.6 of the 2009 DCP. As a consequence, until this point is clarified, there is still potential for an adverse impact on flood behaviour associated with the effects of meeting the requirements of Section 4.6 of the DCP.

4.2.2.3. A condition of consent has therefore been imposed requiring a 50 m wide riparian protection area (measured from the top bank of Eastern Creek and including the 10m vegetated buffer) to be fenced off to preserve and protect it from any impacts associated with the development. This will also have to be included in the Stage 1 Vegetation Management Plan (VMP) associated with this bulk earthworks development. The Stage 1 VMP will need to:

- indicate any further requirements to ensure protection of the riparian corridor such as installation of jute matting or the like.
- reflect the manning roughness factor required to satisfy the requirements of Section 4.6 of the 2009 DCP.

Therefore, the following additional complimentary conditions have been recommended:

4.2.2.4. All remnant native vegetation being fenced off and protected. At Council's request, the applicant has already relocated some of the temporary sediment basins that were shown to impact remnant native vegetation.

4.2.2.5. A Stage 1 Vegetation Management Plan that reflects:

- a 50 m wide riparian corridor (including 10 m vegetated buffer) being fenced and works undertaken to re-establish and maintain the indigenous vegetation communities of that area. This fenced area will also be extended to incorporate any adjacent remnant Cumberland Plain Woodland vegetation. These areas will need to be protected by physical barriers to manage run off and the movement of sediment form other areas of the site
- a riparian corridor and adjacent areas that will mature over time and will be comprised of larger trees, shrubs and grasses that will have a higher order level of roughness
- beyond the fenced riparian corridor, a series of temporary sediment basins, established within the existing grazing lands. This area will have a lower order roughness level
- an overall roughness level applicable to the Stage 1 VMP, consistent with section 4.6 of the DCP.

4.2.2.6. A Stage 2 Vegetation Management Plan being finalised and submitted to Council for approval prior to commencement of the third stage of the proposed bulk earthworks and will be progressively implemented as the proposed bulk earthworks are completed and the temporary sediment basins removed. It will:

- have to comply with any relevant legislation
- retain the 50 m wide fenced riparian corridor and adjacent areas, established in accordance with the Stage 1 Vegetation Management Plan. Noting that over time this area will continue to mature and be comprised of larger trees, shrubs and grasses that will have a higher order level of roughness
- establish a range of landscapes ranging from regularly mown sporting fields to passive recreation spaces to expansions of the re-established riparian corridor

- the precise design of these landscaping and associated works will be required to achieve a roughness factor consistent with section 4.6 of the DCP.

4.2.2.7. Notwithstanding the applicant's position, Rhelm's response to the additional information provided to date is that the assumptions made for the riparian corridor roughness are still considered to be inconsistent with the requirements of Section 4.6 of the 2009 DCP and the density of shrubs and groundcover proposed by EMM. There is potential for impact on flood behaviour associated with the effects of meeting the requirements of Section 4.6 of the DCP and this has not been quantified. The consequences of an incorrect evaluation of the effects of roughness increase could be material, impacting on the flood immunity of the proposed road upgrade for Garfield Road West. Testing of an increase in roughness is considered by Rhelm as being imperative given there are potential consequences for costly transport infrastructure upgrades.

4.2.2.8. Therefore, a deferred commencement condition has been recommended requiring the applicant to conduct an analysis to demonstrate the compliance of the Stage 1 VMP with a roughness factor consistent with section 4.6 of the DCP. Council will engage expert independent advice to confirm compliance has been achieved with this condition.

4.2.3 The final detailed design of the outlet in respect of the originally proposed Bebo Arch drain (since replaced by a box culvert) to ensure appropriate scour protection is achieved:

Rhelm states that the outlet design for the Crossing 16 culvert is unresolved. The design solution in the JWP Civil Drawing Set (CD301, Revision B) appears to reference standard drawings that are for smaller culverts (2.5 m diameter or less). A bespoke design is required for this circumstance and this needs resolution prior to consent to avoid potential long-term impacts on adjacent property.

In the interest of determining this application, we cannot request a redesign of this outlet at this late stage, as that would delay its determination even further. Therefore, Council has recommended a condition to address Rhelm’s concern.

The condition of consent requires Council to approve an amended design for the culvert outlet prior to the issue of the Section 68 approval which is required prior to the issue of any Construction Certificate. Furthermore, design details for this outlet will require additional ecological advice from a suitably qualified person to ensure that the riparian area it drains into is not impacted and that the scour protection is satisfactory.

4.3 Unresolved items in Table 2 of Rhelm's supplementary advice regarding State Environmental Planning Policy Central River City 2021 and how they have been addressed

4.3.1 With regards to Clause 3.27(2)(a) of State Environmental Planning Policy (Precincts - Central River City) 2021, Rhelm states that the issue of cumulative impacts on flooding has been clarified by the additional information provided by the applicant. Rhelm states that cut to fill balance is a matter for Council to resolve, but notes that it is not considered necessary to achieve a net cut to fill balance from a flood risk perspective.

4.3.1.1. Both Rhelm and the applicant's flood experts agree on this point.

4.3.1.2. In addition, the proposed quantity and profile of the fill to be located on the site was originally established in the flood models that informed the amendment to the SEPP. At that time the Department of Planning supported the amendment on the basis of that modelling that confirmed no adverse impacts on other land.

4.3.2 Clause 3.27(2)(b) of State Environmental Planning Policy (Precincts - Central River City) 2021 requires that the consent authority must not grant consent for development on land in the area relevant to this site unless it is satisfied that the proposed development does not materially increase flood levels on properties adjoining the relevant area in events up to the design 100 year recurrence flood.

4.3.2.1. In Table 2 on page 5 of their final report, Rhelm raised concerns regarding:

- the impact of vegetation on the roughness assumptions in the flood modelling
- the status of Garfield and Bandon Road on the flood modelling

4.3.2.2. In relation to the impact of vegetation, a deferred commencement condition has been proposed requiring confirmation of the roughness factor and its ability to satisfy Clause 4.6 of the DCP. This will in turn be validated for Council by an independent expert to confirm that there will be no material increase in flood levels on adjoining properties.

4.3.2.3. In relation to the status of Bandon Road and Garfield Road, the following observations can be made:

- The future construction of both Bandon Road and Garfield Road are identified in a range of State Government documents – for example the 2015 Road Network Strategy for the North West Growth Centre.
- By way of correspondence dated 13 May 2025, the Department of Planning confirmed that:
  - the following 3 scenarios were modelled to inform the December 2022 amendment to section 3.27 of State Environmental Planning Policy (Precincts - Central River City) 2021:
    - The Existing Scenario - representing existing conditions of the Study Area and surrounding areas and roads
    - The Interim Scenario - representing the existing conditions with the proposed TfNSW Garfield Road West and Bandon Road upgrades
    - Design Scenario - representing the TfNSW Garfield Road West and Bandon Road upgrades and the proposed Riverstone West Development footprint
  - In assessing the Riverstone West development's pre and post development changes to flood behaviour, the Department considered the Design Scenario with respect to the Interim Scenario (i.e. inclusive of changes in flood behaviour as a result of the Garfield Road West and Bandon Road upgrade works). The Department considered this was a reasonable and appropriate assessment approach given the advanced planning and design work undertaken by TfNSW and that assessing pre and post development changes to flood behaviour in the absence of the proposed upgrades would not provide an accurate representation of anticipated long term (i.e. post road upgrade and post Riverstone West development) change in flood behaviour.
  - In this regard Section 3.1.2 of Cardno's Final Report Riverstone West Precinct Flooding Assessment, 25 February 2025 provides details of the flood behaviour scenarios modelled to inform the December 2022 amendment to section 3.27 of State Environmental Planning Policy (Precincts - Central River City) 2021.

- In addition to the above, both Bandon Road and Garfield Road continue to be active projects that are the subject of current actions by State Government Agencies.
- The master planning of both the Marsden Park North and West Schofields Precincts of the North West Growth Area is currently being progressed by the State Government – refer https://www.planning.nsw.gov.au/plans-for-your-area/priority-growth-areas-and-precincts/north-west-growth-area.
- In the case of the Marsden Park North Precinct a range of employment land related uses are being considered, the future viability of which will be dependent upon the completion of the future Bandon Road link.
- In the case of the West Schofields Precinct, a range of residential and employment land related uses are being considered. These outcomes will be dependent upon the completion of the future Garfield Road link for evacuation and other reasons.
- The following is a summary of public statements and current State Government activities that point to the future completion of these two projects:

Bandon Road:

- The TfNSW website advises that:

  it is progressing the planning for the Bandon Road Corridor Upgrade and Extension to support the growing North West community. The new Bandon Road corridor includes a 6.5 kilometre, 4-lane road with a central median to allow for future widening, a shared path for pedestrians and cyclists, a new road underpass of the Richmond railway line at Vineyard and improvements to the flood evacuation route on Wallace and Bandon Roads.

  As part of the planning for the upgrade and extension, Transport has identified early safety works at the corner of Bandon Road and Riverstone Parade at Vineyard which will provide a safer intersection for motorists and pedestrians.

  This early work is presently being designed by TfNSW, as they have received funding for that purpose.

  They also received funding to do Early Works as detailed on their website https://www.nsw.gov.au/have-your-say/early-works-for-bandon-road-upgrade

Garfield Road:

- The TfNSW website advises that the Garfield Road Central upgrades are in the strategic design phase. The next phase is for TfNSW to consult with the community on design options.
- Garfield Road Central is the portion of Garfield Road between Denmark Road (west of the rail line) and Piccadilly Street (east of the rail line). The proposed works are in 2 stages.
- Stage 1 – realignment of Railway Terrace to upgrade the Garfield Road – Railway Terrace – Riverstone Parade intersection.

- Stage 2 – Widen Garfield Road from 2 to 4 lanes, central median, shared user paths and grade separation between Garfield Road and the railway line (overpass).
- This information is available at: https://www.transport.nsw.gov.au/projects/current-projects/garfield-road-central

4.3.2.4. Notwithstanding this, Worley's 9th June 2025 supplementary flood risk impact assessment (at attachment 8) modelled the application against the existing condition which excludes the planned Garfield Road West and Bandon Road upgrades. It shows that the proposed development, whether the proposed Bandon Road and Garfield Road West upgrades are constructed or not, is not predicted to cause any notable adverse off-site impacts on 1 in 100 year peak flood levels or flow velocities. The development would also not result in any material change in the risk to life or property on land surrounding the site.

4.3.2.5. Rhelm's supplementary review confirms that the information provided by the applicant on 9 June 2025 has provided the clarity required to partly address this Clause, apart from the roughness assumptions which is addressed in 4.2.2 above.

4.4 Other matter for the Panel and Council to consideration

4.4.1 Rhelm's supplementary advice states that the matter of the entire batter slope for the earthworks being located in the C2 zone as a permanent feature of the development is a matter for Council and the Panel to consider.

4.4.2 Earthworks are permissible in the C2 zone. Furthermore, the earthworks proposed are consistent with the flood modelling that informed the amendment to the SEPP. We have, however, recommended a condition to make it clear that the sediment basins that encroach into the C2 zone are temporary only during the course of the earthworks. Furthermore, future applications will need to ensure no adjustment is made to the scale and slope of the proposed bulk earthworks and batters.

4.5 Information provided to address our Heritage requirements

4.5.1 The applicant provided additional heritage related information to Council on 10 March 2025 including:

- A Statement of Heritage Impact
- Conservation Management Plan for the heritage buildings and 3 associated schedules of conservations works.

4.5.2 The information has been reviewed by our heritage planner who found the Statement of Heritage Impact to be unsatisfactory. A list of items to be addressed was sent to the applicant on 31 March 2025. The applicant provided an amended Statement of Heritage Impact on 14 April 2025. This has been assessed and is now considered acceptable, subject to amended conditions that are at attachment 3.

4.5.3 Whilst the heritage documentation provided requires further refinement, the key documents have now been provided, so there is no longer a requirement for heritage related deferred commencement conditions and now are in the prior to commencement of work section of the conditions.

5 Conclusion

5.1 The proposed development has been assessed against all relevant matters and is considered to be acceptable. It is considered that the likely impacts of the development have been addressed and that the proposal is in the public interest, subject to a deferred

commencement development consent. The site is considered suitable for the proposed development, subject to conditions in a deferred commencement development consent.

6 Disclosure of political donations and gifts

6.1 Under Section 10.4 of the Environmental Planning and Assessment Act 1979, a disclosure statement must be lodged in certain circumstances in relation to any planning application, i.e. a development application, an application to modify a consent and an application to make an environmental planning instrument or development control plan.

6.2 A disclosure statement of a reportable political donation or gift must accompany a planning application or submission (including a submission either objecting to or supporting the proposed development) if the donation or gift is made within 2 years before the application or submission is made. If the donation or gift is made after the lodgement of the application, a disclosure statement must be sent to Council within 7 days after the donation or gift is made. The provision also applies to an associate of a submitter.

6.3 A disclosure statement may be made available for viewing upon a written request to Council in line with Section 12 of the Local Government Act 1993.

6.4 Disclosures:

• Political donations	Has a Disclosure statement been received in relation to this application?	No
	If yes, provide Disclosure statement register reference	Ref:
• Gifts	Have staff received a 'gift', that needs to be disclosed, from anyone involved with this application?	No

7 Recommendation

1 Approve DA-23-00740 for the reasons listed below, and subject to the conditions in the draft deferred commencement consent listed in attachment 3.

a The proposal will not result in any unacceptable impacts, subject to implementing appropriate mitigation measures and the deferred commencement conditions being satisfactorily addressed (Section 4.15(b) of the Environmental Planning and Assessment Act 1979)

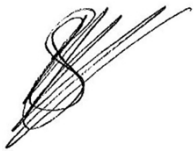
b The site is considered suitable for the proposed development since the proposed cut and fill scenario is suitable at this site from a flooding perspective (Section 4.15(c) of the Environmental Planning and Assessment Act 1979)

c The proposal is considered to be in the public interest as it will facilitate the release of the land for employment purposes as per its current zoning. Development of this site will lead to social, environmental, and economic benefits and ultimately provide industrial, general business and open space uses for nearby and surrounding residents to benefit from (Section 4.15(e) of the Environmental Planning and Assessment Act 1979).

2 Council officers to notify the applicant and all the submitters of the Panel's decision.

8 Declaration and endorsement

We, the undersigned, declare, to the best of our knowledge that we have no interest, pecuniary or otherwise, in this development application or persons associated with it; and we have provided an impartial assessment.



Jared Spies
Senior Development Assessment Planner

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Director City Planning and Development

Independent Review of Flood-related aspects of DA-23-00740

36 Garfield Road West, Richards

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1 Introduction

1.1 Purpose and Context

This document presents the findings of an independent review by Rhelm Pty Ltd (Rhelm) of the surface water related aspects of the development application (DA) DA-23-00740 described as site wide civil works at 36 Garfield Road West, Richards, in the Blacktown Local Government Area and the associated assessment report by Blacktown City Council (Council). .

At the time of completion of this review (February 2025), the DA was with the Sydney Central City Planning Panel for determination. The Panel deferred a decision on 2 December 2024 due to concerns for potential flooding impacts. The deferral indicated that:

"… the Panel requests that the Department / Panel Secretariat engages on behalf of the panel, expert advice to undertake an independent review of Council's assessment report as it relates to flooding considerations associated with the development, including advice and information received from the Department. The independent expert report is to provide conclusions on all relevant statutory and merit considerations, such as to enable the panel to make a final determination on the application."

1.2 Overview of Development Application

The DA is for earthworks and related infrastructure across an extensive land area of approximately 234 ha to facilitate future industrial and commercial development on Lot 50 DP 1295449 (the **site**).

A summary of the proposed works as they relate to surface water and flood impacts can be found in **Section 4.1**.

The site forms part of the Riverstone West Precinct in the North West Growth area.

1.3 Catchment and Floodplain Context

The site is located on the eastern side of Eastern Creek, with the top of the creek bank forming the western boundary of the site. It contains a number of first order watercourses and two second order watercourses.

Eastern Creek is a tributary of South Creek, which is a tributary of the Nepean River. It flows in a northerly direction at the site. The downstream end of the site is approx. 2.5 km from the confluence of South Creek and Eastern Creek. The creek and its riparian area are zoned C2 on the site.

Areas surrounding the site, to the east and to the south, drain in a north-westerly direction through the site, either as flows discharged onto the site watercourses or as overland flows. There are 13 separate inflow points from the east and south into the site (from pipe culverts ranging from small pipes of 225 mm diameter up to large pipes of 2100 mm diameter) (Cardno, 2022 and JWP, 2024) (**Figure 1-1**). These stormwater pipes are located under Riverstone Parade/the Rail line or Garfield Road West.

The site is affected by flooding from:

- **Local catchment areas and overland flow** (from the east and south) – this flood mechanism is generally classified as 'flash flooding' and occurs where there is intense rainfall in the immediate locality
- **Eastern Creek mainstream flooding**, which is also largely flash flooding and associated with intense rainfall in the catchment to the south of the site (this might occur with South Creek

mainstream flooding, being generally longer duration events, associated with rainfall occurring in the larger South Creek catchment (to the south of the site)

- **Hawkesbury Nepean Valley flooding**, which can also be referred to as backwater flooding, which can occur due to regional rainfall in the catchment and flows being restricted and 'backing' up into the site from the Nepean River. The depth and duration of flooding associated with this mechanism is the most significant for the site, with the Probable Maximum flood level of 30.3 mAHD (NSW Reconstruction Authority, 2024) resulting in depths of over 20 m in lower areas of the site. The extent of the regional Probable Maximum Flood (PMF) event is shown in **Figure 1-2**.
- **Combinations of the above**. This was the case for the March 2022 flood, which is documented in INSW (2023)[1]. A view of the site (looking north) during that event is shown in **Figure 1-3**.

[1] https://www.infrastructure.nsw.gov.au/media/vl3jdi3t/hnv-river-mar-jul-2022-floods-review.pdf , accessed 15 January 2025.

Figure 1-1 Existing drainage inflow points in blue (Source: Extract of Figure 3-6 of Cardno 2022)

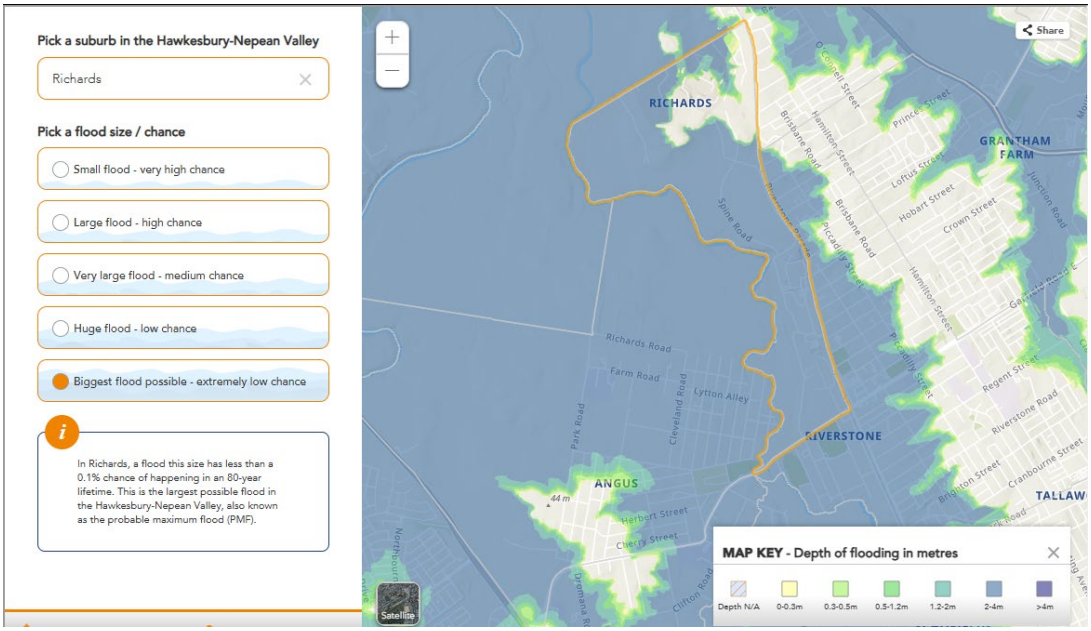

Figure 1-2 Probable Maximum Flood Extent and Depth (Source:NSW RA, 2024 in SES Portal[2])

View north across Garfield Road West, Riverstone, 12:30pm, 9/3/22 (Windsor gauge 13.76m - near peak)

Photo by Adam Hollingworth courtesy of Infrastructure NSW

Figure 1-3 View of Site at March 2022 Flood Peak (Source: Extract from INSW, 2023)

[2] https://www.ses.nsw.gov.au/hawkesbury-nepean-floods , accessed 15 January 2025

2 Documents Reviewed

The following design and flood-related documents were considered as part of this review:

Worley Parsons (2014) *Riverstone West Precinct Floodplain Management Strategy*, Prepared for Riverstone West Parade Pty Ltd, September, Issue 7 (the **2014 Flood Strategy**). (Noting that the flood impact assessment portion of this report is superseded by the Advisian (2023) study referenced below and that the relevant portion of the Strategy is primarily Appendix H – the Flood Emergency Response Plan for the Precinct insofar as it relates to the site).

CSS (2016) *Eastern Creek Catchment Development Scenario Hydraulic Assessment Final Report*, VOLUME 1: Report and Appendices, Prepared for Blacktown City Council (the **CSS 2016 report**).

Cardno (2022) *Riverstone West Precinct Flooding Assessment,* Final Report, Prepared for the Department of Planning and Environment, February (the **Cardno flood assessment**).

Advisian (2023) *Riverstone West Precinct Sitewide Civil Works Flood Impact and Risk Assessment*, Prepared for Sakkara Pty Ltd, May (the **2023 FIRA**).

J.Wyndham Prince (2024) Riverstone West Bulk Earthworks Eastern Creek Tributary Overland Flow Assessment, Prepared for Sakkara, May (the **Overland Flow Assessment**).

J.Wyndham Prince (2024) *Riverstone West Precinct* SITEWIDE CIVIL WORKS Civil Design Plan Set – Various Sheets and Revisions, Prepared for Sakkara, 10 October 2024 (the **DA Civil Design**).

Council Assessment Report – Panel reference PPSSCC-483/ DA-23-00740 dated 28 November 2024, prepared by Blacktown City Council (the **Council assessment report**).

Supporting documents reviewed included:

GLN Planning (2023) *Statement of Environmental Effects Sitewide Civil Works*, Prepared for Riverstone Parade Pty Ltd (the **SEE**).

EMM (2024) Riverstone West Bulk Earthworks Biodiversity Development Assessment Report, Prepared for Sakkara Pty Ltd, March (the **BDAR**).

EMM (2014) Riverstone West Precinct Vegetation Management Plan - Draft, Prepared for Highgate Pty Ltd, April (the **VMP).**

3 Planning and Development Control Context

3.1 SEPP Central River City 2021

State Environmental Planning Policy (SEPP) Central River City 2021 (CRC SEPP) specifically refers to the Riverstone West lands (Clause 3.27) and states that:

(2) Despite any other provision of this Chapter (including any Precinct Plan), the consent authority must not grant consent for development on land in the relevant area unless it is satisfied that the proposed development—

(a) will be undertaken in a way that is consistent with the floodplain management strategy in the Riverstone West Precinct Development Control Plan published by the Department in August 2009, and

(b) does not materially increase flood levels on properties adjoining the relevant area in events up to the design 100 year recurrence flood, and

(c) limits any increases in flood velocities on properties adjoining the relevant area in events up to the design 100 year recurrence flood to minor increases only, and

(d) is not likely to result in adverse flood impacts on properties adjoining the relevant area (including during any construction stage of the proposed development).

(3) This section does not apply to development that the consent authority is satisfied is minor and will not result in unacceptable adverse flood impacts on properties adjoining the relevant area.

3.2 SEPP B&C 2021

Chapter 6 Water Catchments of the State Environmental Planning Policy (SEPP) Biodiversity and Conservation 2021 (B&C SEPP) applies to the Hawkesbury Nepean catchment (Clause 6.1(d)).

Clause 6.6 *Water quality and quantity* states that:

(1) In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the following—

(a) whether the development will have a neutral or beneficial effect on the quality of water entering a waterway,

(b) whether the development will have an adverse impact on water flow in a natural waterbody,

(c) whether the development will increase the amount of stormwater run-off from a site,

(d) whether the development will incorporate on-site stormwater retention, infiltration or reuse,

(e) the impact of the development on the level and quality of the water table,

(f) the cumulative environmental impact of the development on the regulated catchment,

(g) whether the development makes adequate provision to protect the quality and quantity of ground water.

(2) Development consent must not be granted to development on land in a regulated catchment unless the consent authority is satisfied the development ensures—

(a) the effect on the quality of water entering a natural waterbody will be as close as possible to neutral or beneficial, and

(b) the impact on water flow in a natural waterbody will be minimised.

Clause 6.8 *Flooding* states that:

(1) In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the likely impact of the development on periodic flooding that benefits wetlands and other riverine ecosystems.

(2) Development consent must not be granted to development on flood liable land in a regulated catchment unless the consent authority is satisfied the development will not—

(a) if there is a flood, result in a release of pollutants that may have an adverse impact on the water quality of a natural waterbody, or

(b) have an adverse impact on the natural recession of floodwaters into wetlands and other riverine ecosystems.

3.3 Riverstone West DCP 2009

The Riverstone West DCP has a range of requirements. Those relating to water are set out in Section 4.

Section 4.2 relates to the requirements for cut and fill.

Section 4.3 of the DCP requires that the development be in accordance with Appendix C (Floodplain Management Strategy) and Appendix D (Integrated Water Cycle Management Strategy).

3.4 Blacktown LEP Clause 5.21

The Council assessment report makes reference to the need for consideration of Clause 5.21 of the Blacktown LEP 2015 (at Item 8.1.2 of that report).

It is unclear as to why this might be the case, as it is understood that the LEP does not specifically apply to the site. If this is not the case and Clause 5.21 is also to be considered then the relevant clauses are as follows:

(1) The objectives of this clause are as follows—

(a) to minimise the flood risk to life and property associated with the use of land,

(b) to allow development on land that is compatible with the flood function and behaviour on the land, taking into account projected changes as a result of climate change,

(c) to avoid adverse or cumulative impacts on flood behaviour and the environment,

(d) to enable the safe occupation and efficient evacuation of people in the event of a flood.

(2) Development consent must not be granted to development on land the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development—

(a) is compatible with the flood function and behaviour on the land, and

(b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and

(c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and

(d) incorporates appropriate measures to manage risk to life in the event of a flood, and

(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.

(3) In deciding whether to grant development consent on land to which this clause applies, the consent authority must consider the following matters—

(a) the impact of the development on projected changes to flood behaviour as a result of climate change,

(b) the intended design and scale of buildings resulting from the development,

(c) whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,

(d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.

4 Summary of Proposed Works and Flood/related Assessments

4.1 Proposed Works

The proposed works essentially involve the creation of elevated areas set at or above the 1%AEP flood level of 17.3 mAHD as a series of pads. The works include excavation to partly offset the fill demand, largely in the floodplain (as defined by the Probable Maximum Flood level, 30.3 mAHD). The remainder of the fill will be imported to the site. Fill depths of up to 16 m appear to be required across the site. Cut (excavation) of up to 16 m appears to be proposed across the site. Batter slopes are set at a maximum of 1V: 4H.

With respect to stormwater and flooding, the proposed works include:

- Removal/demolition of a range of existing features including:
  - Desilting and dewatering a range of small farm dams and removal of associated outlet infrastructure (such as headwalls etc). These dams will then be filled.
  - Desilting and dewatering a number of first order watercourses on the site (and some portions of second order watercourses). These watercourses will then be filled.
- New stormwater drainage pipes/culverts/channels to convey flow from upstream of the site around the newly filled areas – these take the form of (as described in the JWP civil plans):
  - 'Catch drains' (1, 2, 3)
  - 'Surcharge' channel around Stage E pad and running between Stage E and D pads
  - Bebo arch enclosed drain under Stage B pad (a 12 m base precast unit approximately 350 m in length) – referred to as Crossing 16 (upstream catchment approximately 56 ha)
- Temporary 375 mm diameter pipe to address the creation of a trapped low point on the east side of the Stage D pad near Riverstone Station
- Retention of an existing 1800 mm diameter pipe under Stage E pad
- Possible decommissioning of an existing stormwater pipe – there is a 1200 mm diameter pipe under the Stage E pad for which outlet protection works are proposed but it is unclear as to why this pipe is being retained as it does not appear to be needed (see JWP Drawing CD052 Rev E).
- Retention of a 40 m riparian buffer to Eastern Creek (noting that the offset agreement for removal of watercourses on the site is the retention of riparian areas as shown in Figure 8 of the Rezoning Final report of 2009, reproduced as **Figure 4-1**). This riparian buffer also importantly functions as a floodway (Worley Parsons, 2014, reproduced as **Figure 4-2**).
- A range of 'temporary works' largely to control and manage sediment transport from the pad areas. The basins are documented in the JWP civil plans to be sized using the 'Blue Book' to account for the 85%ile 5 day rainfall. There are:
  - 17 separate sediment basins (footprint only shown in the civil plans, no batters)
  - Temporary stormwater catch drains and rock lined chute or similar conveyance structures to convey flows from the pads to the sediment basins.

A number of the stormwater features (new and retained) will be required both under the bulk earthworks arrangement (the DA at hand) and in the final developed form (future DA). Each of these features will require an easement under their temporary arrangements.

The works identified to be temporary sediment basins (and associated inlet arrangements) would be assumed to be potentially converted to some form of permanent water quality/detention basin features in the final developed form. In this regard, these is no apparent access available to those basins for maintenance in their temporary form. Given the need for testing and pumping out of the basins on a regular basis, a temporary track for maintenance vehicles will be required around the base of the batter in the C2 zone area given the steepness of the batters. This does not appear to be compatible with the objectives of the C2 zone (within which the batters and basins are wholly located).

The site also contains a range of large utility easements for electricity, fuel, sewer and water. These easements place controls on the extent and depth of earthworks.

Access to the site is proposed via a new left in intersection from Garfield Road West. The location of this intersection (west of Pacer Street) appears to be inconsistent with the future plans by Transport for NSW for Garfield Road West[3] (where the intersection is identified to be at the Denmark Road junction). The location of the intersection and ancillary filling proposed is located in C2 zoned lands. A large triple cell box culvert (3 x 3.3 x 1.5 m) is required to be placed for the access road to cross proposed Catch Drain 3. This does not appear to be compatible with the objectives of the C2 zone (within which the batters and basins are wholly located).

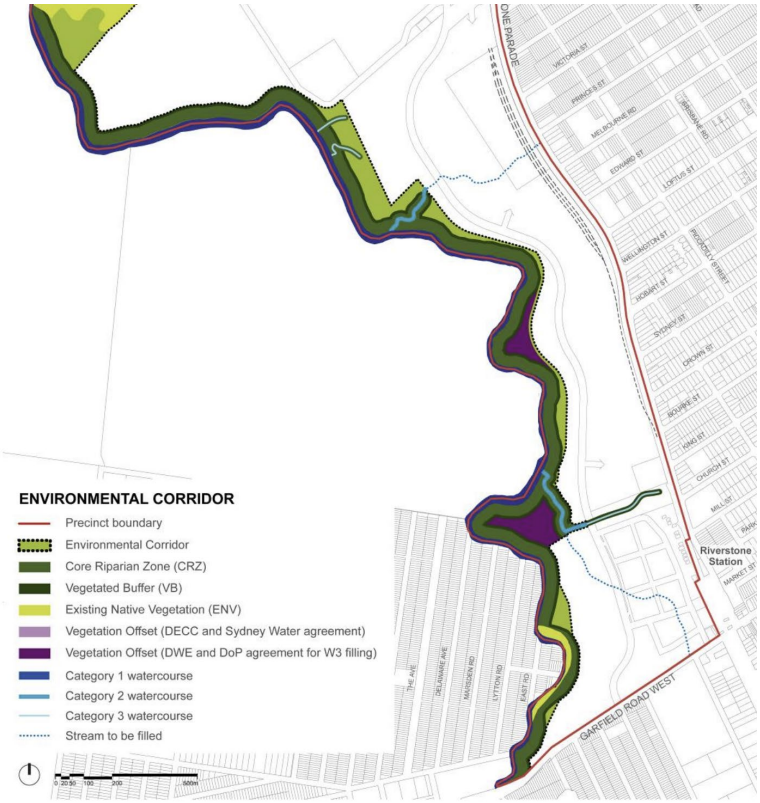

Figure 4-1 Agreed Riparian Corridor Offset Arrangements for Rezoning (Source: Figure 8 Department of Planning, 2009)

[3] https://www.transport.nsw.gov.au/projects/current-projects/garfield-road-west-richmond-road-to-denmark-road

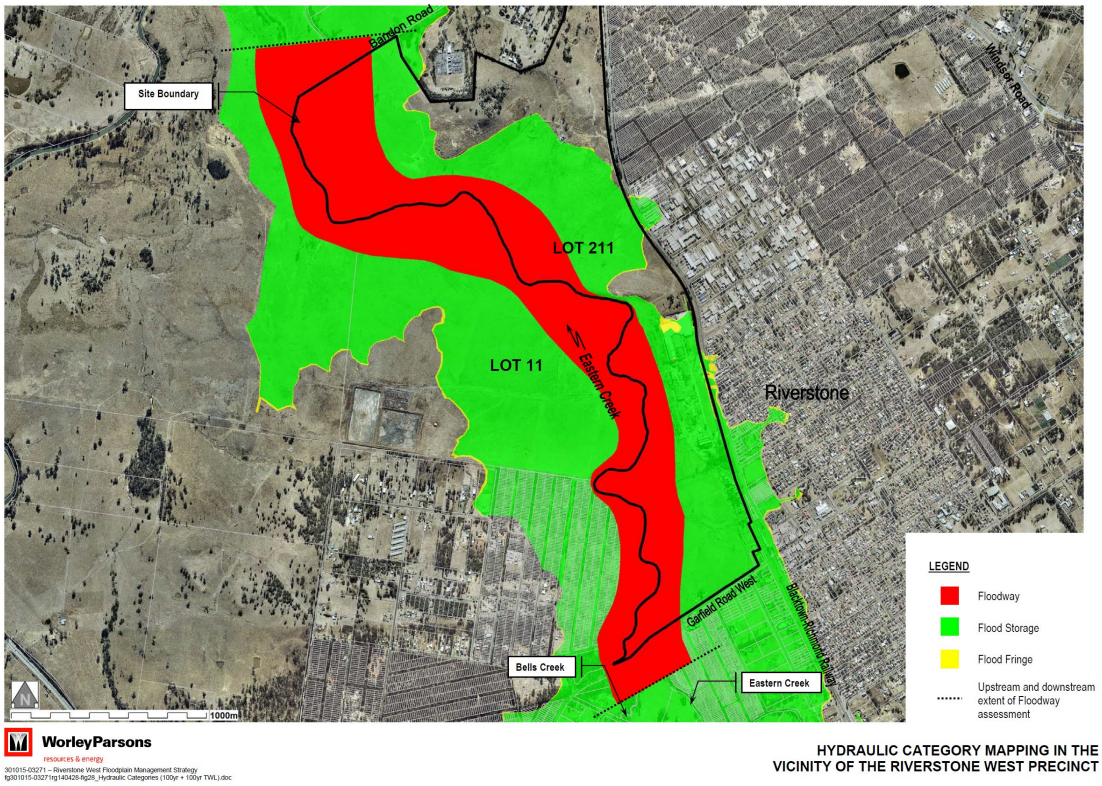

Figure 4-2 Floodway Extent (Source: Figure 28 Worley Parsons, 2014)

4.2 Flood Assessments

Multiple flood assessments have been completed for the site. The most contemporary studies (Cardno, 2022, Advisian, 2023 and JWP, 2024, being respectively the Cardno assessment, the FIRA and the Overland flow assessment) all have a common hydrological analysis, being the XPRAFTS model created by CSS for the 2014 Eastern Creek Flood Study for Blacktown City Council. This assessment involved the use of Australian Rainfall and Runoff 1987 intensity frequency duration (IFD) inputs which is considered reasonable for the purpose of generating hydrological inputs to a separate hydraulic model.

Cardno 2022 Assessment Overview

With respect to the hydraulic modelling, the most recent model created was the TUFLOW model created by Cardno for the Department of Planning and Environment (Cardno, 2022) which was then used by Advisian (2023) for the Flood Impact and Risk Assessment that supports the development application. The model grid is a 2 x 2 m grid based on a gridded elevation model using 2019 aerial survey (LIDAR) with site survey patched in from 2008. A grid size of 2 x 2m provides a good representation of the site and offers a good resolution for the purposes of impact assessment. The patching in of 2008 survey provides a representative condition of the site as at that date (noting there have been more recent approvals/development for parts of the site where the 2008 survey will not be representative of 2019 conditions to match the 2019 LiDAR). No roughness map is provided to assist with understanding the assumed riparian revegetation arrangements under the developed scenario.

Three event durations were considered for the 5%AEP and 1%AEP events. The 2 hour critical duration was adopted for both of these events.

FIRA Overview (Advisian, 2023)

The FIRA used that same baseline conditions of flood model results from the Cardno assessment and includes analysis of impacts for the 1%AEP flood event with a range of tailwater scenarios (no tailwater for all events and 1%AEP Eastern Creek event with a 20%AEP tailwater level of 11.1 mAHD and a 1%AEP tailwater scenario of 17.3 mAHD) to evaluate the potential for flooding under the range of flood mechanisms identified in **Section 1.3**. The FIRA included a refined version of the proposed earthworks in the TUFLOW model update from that assumed in the Cardno assessment (see extract in **Figure 4-3**). No roughness map is provided to assist with understanding the assumed riparian revegetation arrangements under the 2014 VMP that accompanies the DA. However, the overland flow assessment states that the roughness assumptions were the same as the FIRA (see below). The critical duration(s) adopted for the events considered are not described in the report.

It is not entirely clear as to whether the FIRA has been superseded by the JWP (2024) overland flow assessment (discussed below). However, it would appear perhaps that it is superseded.

Overland Flow Assessment Overview (JWP, 2024)

The overland flow assessment then used the Advisian TUFLOW model as its basis, with an update of the 2008 survey to more recent 2016 and 2023 surveys of the site and immediate surrounds to form the baseline conditions. The extent of the model grid is slightly altered on the eastern boundary but appears otherwise the same as the Cardno assessment and FIRA. The assessment also involved reported minor changes in the XP-RAFTS catchment extents to refine catchments to seek to direct flows to the associated local culvert. The overland flow assessment includes an analysis of impacts for the 0.5 EY, 20% AEP, 5% AEP, 1% AEP, 0.5% AEP, 0.2% AEP and the PMF event. These flood events with three tailwater scenarios: no tailwater for all events and 1%AEP Eastern Creek event with a 20%AEP tailwater level of 11.1 mAHD and a 1%AEP tailwater scenario of 17.3 mAHD.

The critical duration adopted for these events is not described in the report. It is likely that the critical duration for smaller local catchments is smaller than the critical duration for the broader Eastern Creek catchment. This is usually considered via an 'envelope' process, where multiple durations are run and the worst depth or level is selected. It is possible that if the critical duration is not appropriately selected, then the peak flood depth (or condition) may not be evaluated, particularly for impact assessment.

Note that the overland flow assessment is dated May 2024, whilst the most recent plans submitted to accompany the DA are dated October 2024. In this regard, it appears that the Crossing 16 arrangements (**Section 4.1**) have been updated from a 5 cell culvert (3.3 x 2.1 m) to a Bebo arch arrangement in the most recent revisions of the plans. In theory, this arrangement should reduce offsite flood impacts but may result in more significant velocities at the outlet under the no tailwater scenario. A roughness map is provided for the assessment and is reproduced as **Figure 4-4**. This shows that whilst Eastern Creek itself appears to be assigned 'vegetated creek' (with a roughness of 0.1), the riparian corridor is assumed to be 'open space' (with a roughness of 0.05). Open space does not appear to be representative of the likely outcomes under the VMP 2014 (noting there is uncertainty about planting density). A side by side

comparison of the assumed roughness and the offset arrangements intended under the rezoning is shown in **Figure 4-5** for reference.

The assessment is not accompanied by a velocity difference maps nor hazard difference maps.

The assessment does not include an evaluation of any offsite impacts in the PMF to evaluate change in hazard or duration of inundation to understand the effects of the proposal on evacuation routes.

Cumulative Impacts

With respect to cumulative impacts, the Cardno assessment and the FIRA do consider the potential for localised cumulative impacts of the proposed future road upgrades (Bandon Road and Garfield Road West). The overland flow assessment, whilst more representative of the proposed site conditions in the DA, does not include a cumulative impact analysis.

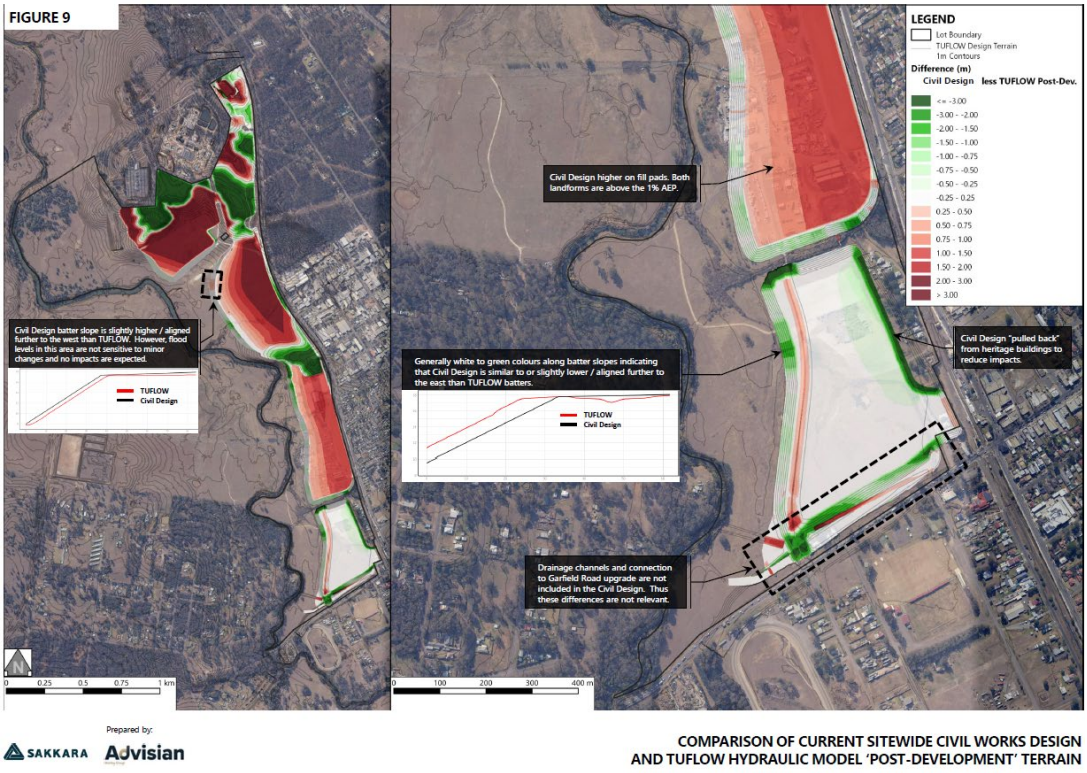

Figure 4-3 Model versus Design Comparison (Source: Advisian, 2023)

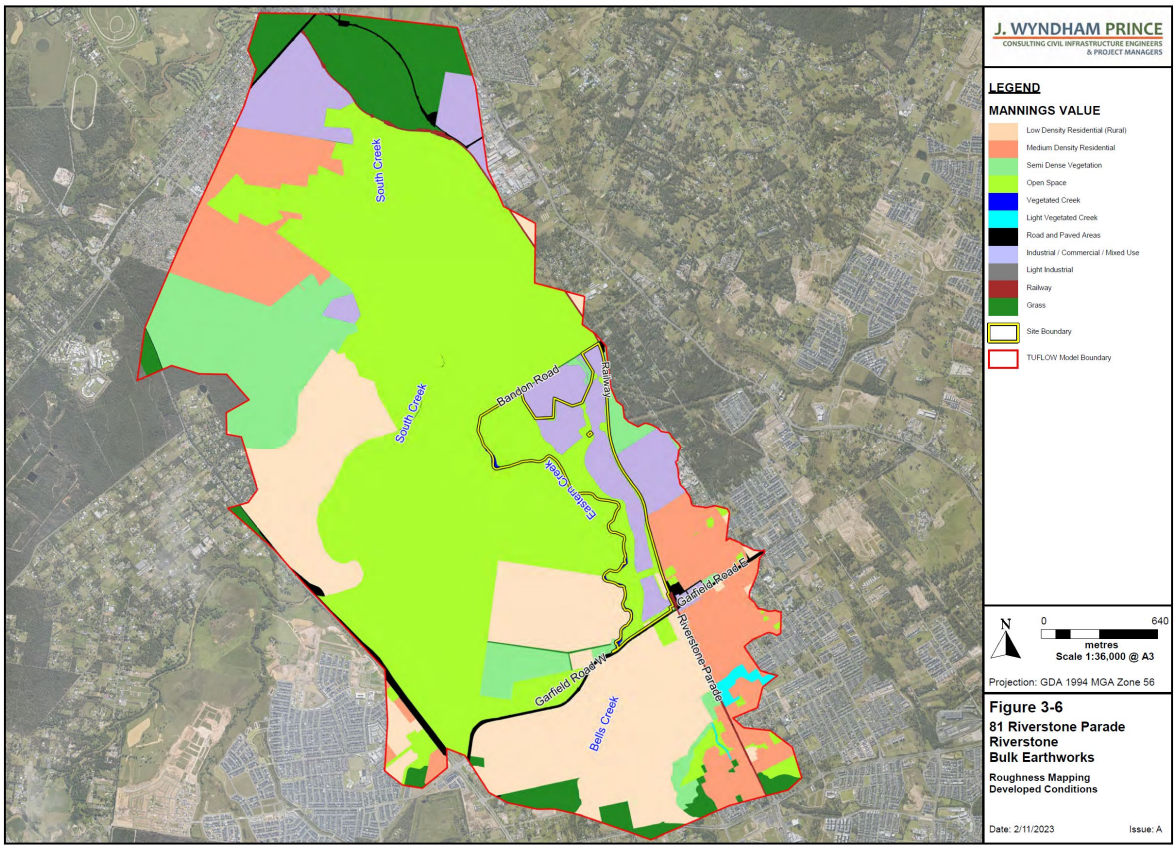

Figure 4-4 Roughness Map for Developed Conditions (Source: JWP, 2024)

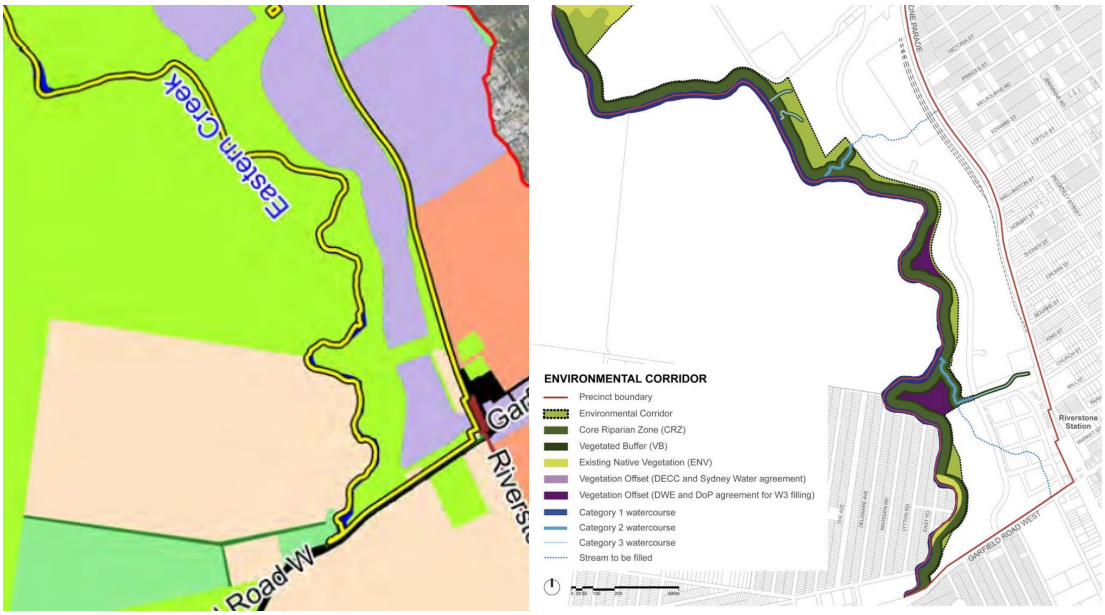

Figure 4-5 Comparison of Roughness versus Riparian Corridor Conditions in Final Rezoning

5 Key Water-related Issues relevant to Making a Determination

As an outcome of the review of the documents listed in **Section 2**, the following key water-related issues have been identified that are relevant to making a determination. Other matters that have the potential to interface with water-related issues are identified in **Section 6**.

Flood Impact Assessment Issues

- *Clarity on the role of the FIRA and the overland flow assessment* with respect to flood impact assessment supporting the application. The FIRA by Advisian (2023) does not include modelling of the effects of the proposed development in isolation or an analysis of a full suite of design flood events – the assessment only offers the results of the subtraction of flood levels between scenarios this potentially not representative of the impact of the actual proposal. The overland flow assessment appears to supersede the FIRA. Note that the Council assessment report does not appear to directly consider the outcomes of the Advisian (2023) FIRA on the basis that there is no numerical limit set on flood impact to define the term 'material increase' and instead defers to advice from DPHI as to the acceptability of the Cardno (2022) flood assessment. The Council assessment report (Attachment 4, Item 7.3) references to JWP (2024) overland flow assessment as only for the purpose of sizing e the required overland flow channel along the eastern boundary of the site to manage existing flows from the Riverstone Township that enter the site under the Blacktown - Richmond Railway line and to size an appropriate culvert to convey these flows under the proposed development pad to Eastern Creek. However, the study appears to serve a greater purpose than this.
- *Unrepresentative conditions in the overland flow assessment* - The overland flow assessment model does not appear to represent the proposed civil design in its October 2024 format nor the outcomes associated with the VMP implementation (see below for roughness commentary). This issue needs to be resolved before the consent is issued and is not considered something that should be incorporated as a deferred commencement consent condition. Further, the critical duration adopted for these events is not described in the report. It is likely that the critical duration for smaller local catchments is smaller than the critical duration for the broader Eastern Creek catchment. This is usually considered via an 'envelope' process, where multiple durations are run and the worst depth or level is selected. It is possible that if the critical duration is not appropriately selected, then the peak flood depth (or condition) may not be evaluated, particularly for impact assessment. Clarification of the adopted approach is required.
- *Riparian corridor roughness assumptions* – The EMM (2014) VMP does not give densities for planting and whilst there are areas shown with different treatments in the VMP, these give only a basic idea of the future density of vegetation in the C2 lands. There are no post-development roughness maps provided in the Cardno (2022) or Advisian (2023) flood assessments to understand the effects of assumptions but the JWP (2024) assessment does include a riparian corridor roughness assumption, which appears to be unrepresentative of the likely conditions (**Section 4.2**). The effect of riparian corridor roughness change (or incorrect assumptions) need to be understood before the impact assessment review can be fully completed.
- *Apparent Benefits (i.e. flood level reductions) in the Advisian (2023) report are unclear* for some areas near culverts on the upstream side of Riverstone Parade. This suggests that perhaps the model schematisation is not representative of the proposed works. However, if the JWP report

supersedes the FIRA as the relevant flood impact assessment supporting the application then this issue may be superseded.

Consistency of Proposed Fill with DCP Provisions

- *Council Assessment report identifies concerns with fill in the floodplain* – The Council assessment report raises concerns that the CRC SEPP is inconsistent with the DCP insofar as it relates to the requirement for consistency with the floodplain management strategy associated with the DCP (but an assumed cut to fill balance, which is not proposed in the DA, instead the DA proposes a net fill import of over 3 million m^3 of fill). The strict application of a net cut to fill balance is generally applied where fully dynamic two dimensional flood modelling has either not been completed and/or where cumulative impacts are either not defined and/or not well understood. Both the JWP overland flow assessment and the Advisian FIRA generally use the appropriate form of modelling to evaluate impacts indicate that impacts are not expected to be material (noting deficiencies/clarifications identified in this review require resolution). Avoidance of cumulative impact is identified as an objective of Clause 5.21(1)(c) of the Blacktown LEP. In this regard, it is noted that:
    - A form of cumulative impact assessment has been completed in the Advisian (2023), with the consideration of the potential effects of some future road upgrades. However, the effects of development in adjacent areas, such as the Marsden Park North Precinct, or upstream in the West Schofields Precinct have not been explicitly considered. However, a form of cumulative impact assessment has been completed for Eastern Creek (CSS, 2016) and reference potentially could be made to the outcomes of that assessment in an updated or supplementary report by the applicant to address this matter.
    - Council's website[4] indicates that Council is currently completing the Eastern Creek Flood Risk Management Study and Plan and this project may include some form of contemporary cumulative impact assessment that may inform the assessment.

Flood Emergency Response Plan Issues

- *Date of FERP* - The proposed FERP is assumed to be that from the 2014 Worley Parsons Strategy, which uses outdated extreme flood levels for the PMF and is not integrated with recent NSW Reconstruction Authority regional flood evacuation assessment. It is understood there will be some temporary uses on the site permitted and therefore this document will require an update to be relevant to 2024 data. This could be a consent condition.

Cut to Fill Strategy and Loss of Land above the PMF

- The cut to fill strategy results in areas in the north of the site that are currently above 30.3 mAHD (the PMF level associated with the Hawkesbury Nepean River system) will become flood-prone. Loss of lands above the PMF reduce local high points where plant and materials could be relocated to in times of flood as well as refuge areas of last resort. Altering the cut to fill strategy to maintain areas above 30.3 mAHD will increase the import fill volume.

[4] Flood studies - Blacktown City, accessed 30 January 2025

Stormwater Infrastructure Design Issues

- *Crossing 16 within the Stage B pad area is proposed as a Bebo arch*. It is unclear if this has been incorporated in its proposed format in the JWP or Advisian modelling (or the Cardno modelling). Further, the outlet 'tail out' of this large structure is set at a very steep (10%) grade. The scour protection shown in the civil design plans prepared by JWP appears to inadequate. The civil plans showing the details indicate a 1%AEP flow of 25 m^3/s, which is a material flow. There is insufficient information on the design process to evaluate the adequacy but it appears to be materially undersized. The core issue is that the proposed scour control area is wholly within lands identified as riparian corridor and if it is insufficiently sized this will further encroach on riparian lands that were identified to be vegetated.
- *Trapped low point* - Drawing CD053 shows the presence of a trapped low point near the train station and no overland flow path is provided in the event of blockage of the proposed stormwater pipe. This would be more appropriate to wrap the new diversion channel (Catch Drain 3) to drain this area but would require a redesign of the pad area.
- *Surcharge channel outlet* - There is a proposed 'Surcharge' channel between Stages D and E pads to convey flows from areas outside (upstream) of the Precinct to Eastern Creek. This channel this has no outlet treatment to dissipate energy before flows enter the riparian corridor and concentrated flows are likely to result in scour of the channel and potentially impact on Eastern Creek.
- *Easement L* - It is unclear as to what is proposed for the existing drainage easement L over Crown Street drainage line. It appears that potentially this easement is proposed to be extinguished and flows appear to be directed into 'surcharge' (70 m wide) channel. However, there is no new headwall or energy dissipation shown on the civil plans.

Erosion and Sediment Control Issues

- *Sizing of sediment basins* – inconsistent with the intentions of the B&C SEPP – will need to be larger (and therefore have a larger footprint). This needs to be resolved before the consent is issued given the knock on effects for other impacts.
- *Sediment basin footprints* – no batters are shown – without batters annotated it is difficult to understand whether the basin extent is its entire extent – they also need to be larger to meet a 95%ile 5 day rainfall (as opposed to the 85%ile identified in Drawings CD406 and 407) given they will be present effectively in perpetuity under the consent to meet SEPP B&C intentions – redesign required to show they are confined to the non-C2 lands.
- *Extent of batters* - Batters of 1 in 4 for the central pad areas will require significant temporary stabilisation works to avoid sediment transport and flows down the batters will not be captured in the proposed sediment basins. Only sediment fences are shown at the base of the batter, which are unlikely to withstand flows down a steep 1 in 4 batter that drops from 17 m to 7 m. There are also what appear to 'borrow' areas beyond the extent of the sediment controls. These do not appear to have any suitable erosion controls.
- *Access for maintenance* - No apparent access available to those basins for maintenance in their temporary form. Given the need for testing and pumping out of the basins on a regular basis, a temporary track for maintenance vehicles will be required around the base of the batter in the C2

zone area given the steepness of the batters. This does not appear to be compatible with the objectives of the C2 zone (within which the batters and basins are wholly located).

Documentation

- The application does not appear to be accompanied by an Integrated Water Cycle Management Strategy in accordance with the provisions of the DCP 2009. Whilst acknowledge that the application is for earthworks (and therefore not every element of the DCP is required, there are relevant sections not suitably addressed). Note that the B&C SEPP has an over-ride function with respect to Chapter 6 controls in that SEPP.

6 Other Matters for Consideration

There are a range of inter-related issues that may require further amplification of the proposed consent conditions. These include:

- Compatibility of earthworks batter and sediment basins with C2 zone objectives (where there is encroachment).
- Compatibility of proposed intersection from Garfield Road West with C2 zoned land and future Garfield Road West and Denmark Road intersection. Noted that proposed Condition 7.7.2 on the consent seeks to require no infrastructure in C2 zoned land, which means that the culvert (Culvert crossing B) and temporary left in intersection would need to be relocated and amended plans prepared.
- Risk of Asbestos Contaminated Materials (ACM) and the management of those types of materials. In other locations these types of materials have been encapsulated in fill under a Long term management plan. No additional fill areas would be reasonable on the site for this purpose and any future ACM encapsulation would need to be associated with the proposed fill areas only.

7 Recommendations

7.1 Key Recommendations

The key recommendations arising from the findings of the review are documented in **Table 7-1**.

Table 7-1 Key Recommendations

Issue	Summary of Matter/Issue
Matters requiring clarification	Clarity required on the role of the FIRA and the overland flow assessment
	Riparian corridor roughness assumptions
	Apparent Benefits (i.e. flood level reductions) in the Advisian (2023) report are unclear
Issues to be addressed prior to determination	Unrepresentative conditions in the overland flow assessment
	Council Assessment report identifies concerns with fill in the floodplain – the cumulative impact question should be addressed
	Cut to Fill Strategy and Loss of Land above the PMF
	Stormwater Infrastructure Design Issues
	Erosion and Sediment Control Issues: • Sizing of sediment basins • Sediment basin footprints • Proposed access arrangements for basins for maintenance in their temporary form.
	Integrated Water Cycle Management Strategy – to be submitted to accompany the application and meet SEPP (B&C) 2021 requirements
Issues able to be addressed through conditions	Update of Flood Emergency Response Plan to be specific to the site and include contemporary flood information.

7.2 Statutory Considerations

A response to each of the key statutory considerations is provided in **Table 7-2**.

Table 7-2 Statutory Considerations

Relevant EPI Clause	Consideration
SEPP Central River City 2021 Clause 3.27(2)	
(a) will be undertaken in a way that is consistent with the floodplain management strategy in the Riverstone West Precinct Development Control Plan published by the Department in August 2009	Application is generally consistent with the 2014 Floodplain Management Strategy, with the exception of the requirement for a balance of cut and fill. Clarity required on cumulative effects as per **Section 5** findings of this review.

Relevant EPI Clause	Consideration
(b) does not materially increase flood levels on properties adjoining the relevant area in events up to the design 100 year recurrence flood	Clarity on which assessment is the relevant one to rely on is required. Clarity on assumptions as per comments in **Section 5** findings of this review.
(c) limits any increases in flood velocities on properties adjoining the relevant area in events up to the design 100 year recurrence flood to minor increases only	Clarity on which assessment is the relevant one to rely on is required. Clarity on assumptions as per comments in **Section 5** findings of this review.
(d) is not likely to result in adverse flood impacts on properties adjoining the relevant area (including during any construction stage of the proposed development)	Clarity on which assessment is the relevant one to rely on is required. Clarity on assumptions as per comments in **Section 5** findings of this review.
SEPP B&C 2021 Clause 6.6 *Water quality and quantity*	
1(a) whether the development will have neutral or beneficial effect on the quality of water entering a waterway,	This matter has does not appear to have been considered.
1(b) whether the development will have an adverse impact on water flow in a natural waterbody,	This matter has does not appear to have been considered.
1(c) whether the development will increase the amount of stormwater run-off from a site	Earthworks only proposed at present. Future detention strategy may involve an increase in the size of the proposed erosion and sediment control basins.
1(d) whether the development will incorporate on-site stormwater retention, infiltration or reuse	No retention, infiltration or reuse appears to have been considered.
1(e) the impact of the development on the level and quality of the water table	This matter does not appear to have been considered.
1(f) the cumulative environmental impact of the development on the regulated catchment	This matter does not appear to have been considered.
1(g) whether the development makes adequate provision to protect the quality and quantity of ground water.	This matter does not appear to have been considered.
2(a) the effect on the quality of water entering a natural waterbody will be as close as possible to neutral or beneficial	As per comment on 1(a).
2(b) the impact on water flow in a natural waterbody will be minimised.	As per comment on 1(b).
SEPP B&C 2021 Clause 6.8 *Flooding*	
(1) In deciding whether to grant development consent to development on	This matter does not appear to have been considered.

Relevant EPI Clause	Consideration
land in a regulated catchment, the consent authority must consider the likely impact of the development on periodic flooding that benefits wetlands and other riverine ecosystems.	
(2) Development consent must not be granted to development on flood liable land in a regulated catchment unless the consent authority is satisfied the development will not— *(a) if there is a flood, result in a release of pollutants that may have an adverse impact on the water quality of a natural waterbody*	This matter does not appear to have been considered for the proposed temporary uses.
(b) have an adverse impact on the natural recession of floodwaters into wetlands and other riverine ecosystems	This matter does not appear to have been considered.
Riverstone West DCP 2009	
Section 4.2 requirements for cut and fill	Clarity required on cumulative effects as per **Section 5** findings of this review.
Section 4.3 requirements for development be in accordance with Appendix C (Floodplain Management Strategy) and Appendix D (Integrated Water Cycle Management Strategy).	As per comment on Section 4.2 of the DCP. Noted no development-specific integrated water cycle management strategy and how this interfaces with the provisions of the SEPP B&C 2021.
Clause 5.21 of BLEP 2015	
1(a) to minimise the flood risk to life and property associated with the use of land,	Updated FERP required as a condition of consent.
1(b) to allow development on land that is compatible with the flood function and behaviour on the land, taking into account projected changes as a result of climate change	Climate change does not appear to have been considered in the impact assessment.
1(c) to avoid adverse or cumulative impacts on flood behaviour and the environment	Clarity required on cumulative effects as per **Section 5** findings of this review.
1(d) to enable the safe occupation and efficient evacuation of people in the event of a flood.	As per comment on 1(a).
2(a) is compatible with the flood function and behaviour on the land	As per comment on 1(b).
2(b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood	Clarity on which impact assessment applies as per **Section 5** findings of this review.

Relevant EPI Clause	Consideration
affectation of other development or properties	
(c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood	As per comment on 1(a).
(d) incorporates appropriate measures to manage risk to life in the event of a flood	As per comment on 1(a).
(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses	Unquantified effects of the effects of the outlet of proposed Crossing 16 and the proposed surcharge channel on riparian vegetation.
3(a) the impact of the development on projected changes to flood behaviour as a result of climate change	As per comment at 1(b).
3(b) the intended design and scale of buildings resulting from the development	No buildings proposed. However, a range of temporary uses are intended to be authorised and this aspect is not fully quantified.
3(c) whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,	Updated FERP required
3(d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.	As per comment on 3(a).

8 Conclusions

The primary outcome of this independent review is that clarification and potential additional information and on a range of matters (merit and statutory) is required as per the recommendations in **Section 7**.

Note that clarification and/or additional information may necessitate further review and/or may result in recommendations for a variance to the proposed draft conditions of consent and/or additional conditions of consent.

9 References

Advisian (2023) *Riverstone West Precinct Sitewide Civil Works Flood Impact and Risk Assessment*, Prepared for Sakarra Pty Ltd, May.

Cardno (2022) *Riverstone West Precinct Flooding Assessment,* Final Report, Prepared for the Department of Planning and Environment, February.

EMM (2024) Riverstone West Bulk Earthworks Biodiversity Development Assessment Report, Prepared for Sakkara Pty Ltd, March.

EMM (2014) Riverstone West Precinct Vegetation Management Plan - Draft, Prepared for Highgate Pty Ltd, April.

INSW (2023) *Hawkesbury-Nepean River March and July 2022 Floods Review: Hydrology, Riverbank Erosion, and Flood Mitigation Scenarios*, Final Report February 2023.

JWP (2024) Riverstone West Bulk Earthworks Eastern Creek Tributary Overland Flow Assessment, Prepared for Sakkara, May.

GLN Planning (2023) *Statement of Environmental Effects Sitewide Civil Works*, Prepared for Riverstone Parade Pty Ltd.

NSW Reconstruction Authority (2024) *Hawkesbury-Nepean River Flood Study Overview*, ISBN: 978-0-646-88496-7.

Worley Parsons (2014) *Riverstone West Precinct Floodplain Management Strategy*, Prepared for Riverstone West Parade Pty Ltd, September, Issue 7.

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23 June 2025

Our ref: RL-01-2242-02

Peter Conroy
Blacktown City Council
62 Flushcombe Road
Blacktown NSW 2148

Dear Peter,

Supplementary Review and Advice re DA-23-00740 (Riverstone West Precinct)

As requested, Rhelm Pty Ltd (Rhelm) has prepared the following advice for Blacktown City Council (**Council**) regarding DA-23-00740 (the **DA**).

Reference should be made to our report prepared for the Department of Planning, Housing and Infrastructure (**DPHI**) to assist the Sydney Central Planning Panel (the **Panel**) entitled *Independent Review of Flood-related aspects of DA-23-00740* dated 3 February 2025 (our reference RR-01-2242-01, the **Independent Review**). This report contained a number of matters for clarification and recommendations with respect to the surface water aspects of the DA.

This letter should be read in conjunction with the Independent Review.

This advice has been prepared with consideration of the following information provided by the applicant (**Sakkara**) in response to the matters for clarification and recommendations described in the Independent Review:

Sakkara (2025) Letter to Sydney Central Planning Panel *RE: PPSSCC-483 – Blacktown – DA-23-00740 - 36 Garfield Road, West Richard*, dated 11 March 2025 and the following attachments to that letter:

- Worley Consulting (2025) Letter to Sakkara *RIVERSTONE WEST PRECINCT (RICHARDS) SITE WIDE CIVIL WORKS (DA-23-00740) RESPONSES TO RHELM INDEPENDENT REVIEW REPORT*, dated 10 March 2025.

- JWP (2025) Letter to Sakkara *36 Garfield Road West, Richards – Responses to Independent Review of DA-23-00740*, dated 7 March 2025.
- Worley Consulting (2025) *Riverstone West Precinct (Richards) Sitewide Civil Works (DA-23-00740) - Integrated Water Cycle Management Strategy*, Prepared for Sakkara, March, Rev A.
- GLN (2025) Letter to Sakkara *RE: Planning Response to Rhelm Review of Flood-related aspects of DA-23-00740 Property: Lot 50 Deposited Plan 1295449; 36 Garfield Road West, Richards NSW 2765*, dated 6 March 2025.

Sakkara (2025) Letter to Blacktown City Council *RE: DA-23-00740 - 36 Garfield Road, West Richard – Project Timeline Attachments*, dated 7 April 2025.

Sakkara (2025) Letter to Blacktown City Council *RE: DA-23-00740 - 36 Garfield Road, West Richard – Vegetation O□set Response*, dated 10 April 2025, including the following attachments:

- GLN (2025) Letter to Sakkara *RE: DA-23-00740 Vegetation Offset Requirement & works within C2 Zoned Land Property: Lot 50 Deposited Plan 1295449 (formerly Lot 211 Deposited Plan 830505); 36 Garfield Road West, Richards NSW 2765*, dated 10 April 2025.

Worley Consulting (2025) Letter to Sakkara *RIVERSTONE WEST PRECINCT (RICHARDS) SITE WIDE CIVIL WORKS (DA-23-00740) COMPILED LIST OF COMPLETED FLOOD STUDIES AND FLOOD RELATED INVESTIGATIONS*, dated 14 April 2025.

GLN (2025) *Memorandum from GLN to Sakkara Base Flood Model Scenario DA-23-00740 - 36 Garfield Road West, Richards NSW 2765*, dated 2 May 2025.

GLN (2025) *Memorandum from GLN to Sakkara Water Management Act DA-23-00740 - 36 Garfield Road West, Richards NSW 2765*, dated 2 May 2025.

Digital files (SHP format) of various water management features provided by Sakkara to Blacktown City Council.

JWP (2025) Amended Sitewide Civil Works Drawing Package (Various Sheets, Revisions ranging from A-I), dated 9 April 2025.

GLN (2025) Letter to Sakkara *Response to Final Issues DA-23-00740/ PPSSCC-483 Lot 211 Deposited Plan 830505; 36 Garfield Road West, Richards NSW 2765*, dated 13 June 2025, including the following attachments:

- Worley Consulting (2025) Letter to Sakkara *RICHARDS SITE WIDE CIVIL WORKS (DA-23-00740) ASSESSMENT OF FLOOD LEVEL IMPACTS WITHOUT MAJOR ROAD UPGRADES*, dated 9 June 2025

- EMM (2025) Letter to Sakkara *Riverstone West Precinct - Bulk Earthworks Development Application - Vegetation Management Plan advice* dated 13 June 2025.

Worley Consulting (2025) Letter to Sakkara *RICHARDS (RIVERSTONE WEST) SITE WIDE CIVIL WORKS (DA-23-00740) CLARIFICATION OF STORM DURATIONS ADOPTED IN FLOOD MODELLING*, dated 18 June 2025.

Further consideration has also been made of the flood impact assessment that accompanies the *Garfield Road West Upgrade Review of Environmental Factors* (Transport for NSW, 2020) (the **GRWREF**). The flood assessment in this report has been reviewed to inform a qualitative understanding of the potential effects of the road upgrade project on its own. The key relevant matter relates to the assumptions for roughness vary between the TfNSW study and other studies – this is relevant to the impacts of the effects of the riparian corridor (light vegetation assumes 0.07, trees and shrubs as 0.1 and 0.12 for dense vegetation, c.f. the Cardno and applicant assessment which assumes a value of 0.05 for the majority of the riparian corridor which is quite low (c.f. the TfNSW assessment refers to this value as similar to remnant cleared pasture land (0.045)).

Update of Key Recommendations Tables

Table 7.1 of the Independent Review provided a summary of key recommendations. This table is reproduced below as **Table 1** with an additional column to incorporate the outcomes of the review of the additional materials provided (being those materials listed above). Table 7.2 of the Independent Review provided a summary of the review against statutory considerations. This table is reproduced below as **Table 2** with an additional column to incorporate the outcomes of the review of the additional materials provided (being those materials listed above).

Table 1 – Matters Requiring Consideration

Issue	Summary of Matter/Issue (as per Independent Review, February 2025)	Addressed in Supplementary Material?
Matters requiring clarification	Clarity required on the role of the FIRA and the overland flow assessment	Clarity has been provided along with specific confirmation of the storm event durations considered for the different models. The storm event durations tested vary from that understood to be the critical durations in the relevant areas. For example, the critical duration for flash flooding affecting areas east of the railway line is much shorter than considered in the JWP assessment for the 1%AEP event and the critical duration for Eastern Creek does not

Issue	Summary of Matter/Issue (as per Independent Review, February 2025)	Addressed in Supplementary Material?
		appear to have been assessed in the Worley (formerly Advisian) assessments. As such, it is not clear from the information provided as to whether the proposed development will have an impact or not. It is recommended that a deferred commencement consent condition be incorporated in any consent issued to address this matter.
	Riparian corridor roughness assumptions	Clarity has been provided on the assumptions. However, as a consequence this matter is not resolved and the concerns raised are considered to remain.
	Apparent Benefits (i.e. flood level reductions) in the Advisian (2023) report are unclear	This matter is generally considered to be resolved.
Issues to be addressed prior to determination	Unrepresentative conditions in the overland flow assessment	This matter is generally considered to be resolved.
	Council Assessment report identifies concerns with fill in the floodplain – the cumulative impact question should be addressed	This is a matter for Council to resolve. It is not considered necessary to achieve a net cut to fill balance from a flood risk perspective.
	Cut to Fill Strategy and Loss of Land above the PMF	A response has been provided identifying some land is retained above the 2024 PMF level (17 ha).
	Stormwater Infrastructure Design Issues	The outlet design matter requires comprehensive conditioning. The design solution in the JWP Civil Drawing Set (CD301, Revision B) appears to reference standard drawings that are for smaller culverts (2.5 m diameter or less). A bespoke design is required for this circumstance to avoid potential long term impacts on the riparian corridor and adjacent property.
	Erosion and Sediment Control Issues: • Sizing of sediment basins • Sediment basin footprints • Proposed access arrangements for basins for	This matter is generally resolved and can be conditioned.

Issue	Summary of Matter/Issue (as per Independent Review, February 2025)	Addressed in Supplementary Material?
	maintenance in their temporary form.	
	Integrated Water Cycle Management Strategy – to be submitted to accompany the application and meet SEPP (B&C) 2021 requirements	An IWCM strategy report has been prepared. This report is considered generally adequate and related matters can be conditioned.

Table 2 Statutory Considerations Update

Relevant EPI Clause	Consideration (as per Independent Review, February 2025)	Addressed in Supplementary Material?
SEPP Central River City 2021 Clause 3.27(2)		
(a) will be undertaken in a way that is consistent with the floodplain management strategy in the Riverstone West Precinct Development Control Plan published by the Department in August 2009	Application is generally consistent with the 2014 Floodplain Management Strategy, with the exception of the requirement for a balance of cut and fill. Clarity required on cumulative effects as per **Section 5** findings of this review.	Cut to fill balance is a matter for Council to resolve. It is not considered necessary to achieve a net cut to fill balance from a flood risk perspective. Further detail has been provided by the applicant.
(b) does not materially increase flood levels on properties adjoining the relevant area in events up to the design 100 year recurrence flood	Clarity on which assessment is the relevant one to rely on is required. Clarity on assumptions as per comments in **Section 5** findings of the review.	The consequences of some of the assumptions indicate the impact assessment is unlikely to be representative of the future conditions required by the DCP (Section 4.6). Flood levels on properties adjoining identified to materially increase in the Cardno (2022) assessment. Further assessments were completed by the applicant to evaluate the effects of the development without the effects of the

Relevant EPI Clause	Consideration (as per Independent Review, February 2025)	Addressed in Supplementary Material?
		road upgrade of Garfield Road West and Bandon Road.
(c) limits any increases in flood velocities on properties adjoining the relevant area in events up to the design 100 year recurrence flood to minor increases only	Clarity on which assessment is the relevant one to rely on is required. Clarity on assumptions as per comments in **Section 5** findings of the review.	Further detail has been provided by the applicant.
(d) is not likely to result in adverse flood impacts on properties adjoining the relevant area (including during any construction stage of the proposed development)	Clarity on which assessment is the relevant one to rely on is required. Clarity on assumptions as per comments in **Section 5** findings of the review.	Further detail has been provided by the applicant.
SEPP B&C 2021 Clause 6.6 *Water quality and quantity*		
1(a) whether the development will have neutral or beneficial effect on the quality of water entering a waterway,	This matter has does not appear to have been considered.	Further detail has been provided by the applicant. This matter is generally resolved.
1(b) whether the development will have an adverse impact on water flow in a natural waterbody,	This matter has does not appear to have been considered.	Further detail has been provided by the applicant. This matter is generally resolved.
1(c) whether the development will increase the amount of stormwater run-off from a site	Earthworks only proposed at present. Future detention strategy may involve an increase in the size of the proposed erosion and sediment control basins.	Further detail has been provided by the applicant. This matter is generally resolved.
1(d) whether the development will incorporate on-site stormwater retention, infiltration or reuse	No retention, infiltration or reuse appears to have been considered.	Further detail has been provided by the applicant. This matter is generally resolved.
1(e) the impact of the development on the level and quality of the water table	This matter does not appear to have been considered.	Further detail has been provided by the applicant. This matter is generally resolved.
1(f) the cumulative environmental impact of the development on the regulated catchment	This matter does not appear to have been considered.	Further detail has been provided by the applicant. This matter is generally resolved.

Relevant EPI Clause	Consideration (as per Independent Review, February 2025)	Addressed in Supplementary Material?
1(g) whether the development makes adequate provision to protect the quality and quantity of ground water.	This matter does not appear to have been considered.	Further detail has been provided by the applicant. This matter is generally resolved.
2(a) the effect on the quality of water entering a natural waterbody will be as close as possible to neutral or beneficial	As per comment on 1(a).	Further detail has been provided by the applicant. This matter is generally resolved.
2(b) the impact on water flow in a natural waterbody will be minimised.	As per comment on 1(b).	Further detail has been provided by the applicant. This matter is generally resolved.
SEPP B&C 2021 Clause 6.8 *Flooding*		
(1) In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the likely impact of the development on periodic flooding that benefits wetlands and other riverine ecosystems.	This matter does not appear to have been considered.	Further detail has been provided by the applicant. This matter is generally resolved.
(2) Development consent must not be granted to development on flood liable land in a regulated catchment unless the consent authority is satisfied the development will not— *(a) if there is a flood, result in a release of pollutants that may have an adverse impact on the water quality of a natural waterbody*	This matter does not appear to have been considered for the proposed temporary uses.	Further detail has been provided by the applicant. This matter is generally resolved.
(b) have an adverse impact on the natural recession of floodwaters into wetlands and other riverine ecosystems	This matter does not appear to have been considered.	Further detail has been provided by the applicant. This matter is generally resolved.
Riverstone West DCP 2009		
Section 4.2 requirements for cut and fill	Clarity required on cumulative effects as per **Section 5** findings of the review.	Cut to fill balance is a matter for Council to resolve. Due to the unique circumstances of the site it is not considered necessary to achieve a net

Relevant EPI Clause	Consideration (as per Independent Review, February 2025)	Addressed in Supplementary Material?
		cut to fill balance from a flood risk perspective.
Section 4.3 requirements for development be in accordance with Appendix C (Floodplain Management Strategy) and Appendix D (Integrated Water Cycle Management Strategy).	As per comment on Section 4.2 of the DCP. Noted no development-specific integrated water cycle management strategy and how this interfaces with the provisions of the SEPP B&C 2021.	An IWCMS has been provided.

Core Issues Discussion

Impact of the Application without appropriate roughness assumptions

Despite the information provided by the applicant, the assumptions made for the riparian corridor roughness are considered to be inconsistent with the requirements of Section 4.6 of the 2009 DCP and the density of shrubs and groundcover proposed by EMM (2025).

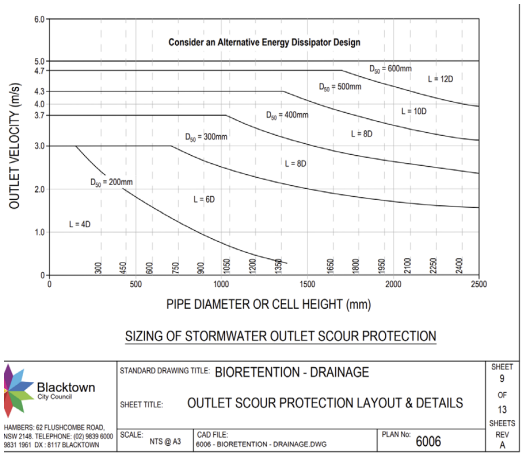
There is potential for impact on flood behaviour associated with the effects of meeting the requirements of Section 4.6 of the DCP and this has not been quantified.

The consequences of an incorrect evaluation of the effects of roughness increase could be material, impacting on the flood immunity of the proposed road upgrade for Garfield Road West. Testing of an increase in roughness is considered imperative given there are potential consequences for costly transport infrastructure upgrades.

It seems highly unusual that over the time since the initial independent review was completed (February 2025) that the applicant has somehow been able to commission and complete additional flood modelling to evaluate the effects of the proposed development without the upgrade of Garfield Road West and Bandon Road and yet has not been able to conduct the required analysis to demonstrate the effect of a change in roughness.

Insufficient Proposed Scour Protection Arrangements for Bebo Arch Outlet

The proposed outlet scour protection is not considered to be sufficient as this type of outlet necessitates a more complex design. The application of Council's standard engineering specifications (reproduced below) is not appropriate. Given the potential for scour within the area identified to be riparian corridor (and potential impact of a larger footprint of works) it would be appropriate to condition a design amendment, that is informed by further ecological assessment.



Suggested conditions will be forwarded to Council for consideration by email.

Other Matters

The matter of the entire batter slope for the earthworks being located in the C2 zone as a permanent feature of the development is a matter for Council and the Panel to consider. If the flood impact matters cannot be resolved then a re-design of the earthworks to have the toe of the batter align with the edge of the C2 zone may be required.

Should you have any queries regarding this advice, please do not hesitate to contact me on 02 9098 6998.

Sincerely,

Louise Collier
Director/Principal (B.E.(Hons) MEngSc FIEAust CPEng)

Attachment 3

Conditions of consent (draft)

Proposed development	Integrated Development for site wide bulk earth works in 5 stages including importation of approximately 3.9 million cubic metres of fill material via approximately 340,000 truck movements, removal of existing vegetation, demolition of existing industrial structures, construction of 2 temporary haulage roads (one off Bandon Road and one off Garfield Road West) and the construction of drainage swales and sediment detention basins.
Property description	36 Garfield Road West, Richards (Lot 50 DP 1295449)

1 ADVISORY NOTES

1.1 Terminology

1.1.1 Any reference in this document to a "consent" means a "development consent" defined in the Environmental Planning and Assessment Act 1979.

1.1.2 Any reference in this consent to a Construction, Compliance**,** Occupation or Subdivision Certificate is a reference to a certificate as defined by Section 6 of the Environmental Planning and Assessment Act 1979.

1.2 Scope of Consent

1.2.1 The granting of this consent does not imply or confer compliance with the requirements of the Disability Discrimination Act 1992. The applicant is advised to investigate any liability that may apply under that Act. The current suite of Australian Standard 1428 - Design for Access and Mobility, should be consulted for guidance. The prescriptive requirements of Part 1 of the Standard apply to certain buildings requiring development consent.

1.3 Other Approvals

1.3.1 The applicant’s attention is drawn to the need to obtain separate appropriate approval for any ancillary development not approved by this consent, including:

(a) the removal of any tree(s) not indicated on the approved plans, and

(b) any fence, retaining wall, land excavation or filling, advertising structure or other development not being exempt development, and

(c) demolition of any existing buildings and associated structures in accordance with the requirements of the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, and

(d) the installation of vehicular footway crossings servicing the development, and

(e) the use of any crane that swings over public air space. If a crane is used to construct this development that swings over public air space, separate Council approval under the Roads Act 1993 and Local Government Act 1993 is required.

1.4 Services

1.4.1 The applicant is advised to consult with:

(a) Sydney Water Corporation Limited

(b) Energy provider

(c) Jemena Gas

(d) The relevant local telecommunications carrier

regarding any requirements for the provision of services to the development and the location of existing services that may be affected by proposed works, either on the land or on the adjacent public road(s).

All approved plans should be submitted to Sydney Water Tap In, to determine whether the development will affect Sydney Water's sewer and water mains, stormwater drains and/or easements and if further requirements need to be met. The plans are to be appropriately stamped and all amended plans will require re-stamping. For further information go to: www.sydneywater.com.au, then follow the "Developing Your Land" link or telephone 1300 082 746 for assistance.

Sydney Water may also require the applicant to obtain a Trade Waste Approval as part of the operation of the approved development. Enquiries should be made to ascertain the Sydney Water requirements for the eventual operation of the approved use.

1.4.2 Prior to any demolition works, all relevant services or utilities should be disconnected in consultation with the relevant service provider.

1.4.3 Underground assets may exist in the area that is subject to your application. In the interests of health, safety, and in order to protect damage to third party assets, please contact Dial Before You Dig at www.1100.com.au or telephone on 1100 before excavating or erecting structures (this is the law in NSW). If alterations are required to the configuration, size, form or design of the development upon contacting the Dial Before You Dig service, an amendment to the development consent (or a new development application) may be necessary. Individuals owe asset holders a duty of care that must be observed when working in the vicinity of plant or assets. It is the individual's responsibility to anticipate and request the nominal location of plant or assets on the relevant property via contacting the Dial Before You Dig service in advance of any construction or planning activities.

1.4.4 Telstra (and its authorised contractors) are the only companies that are permitted to conduct works on Telstra's network and assets. Any person interfering with a facility or installation owned by Telstra is committing an offence under the Criminal Code Act 1995 (Cth) and is liable for prosecution. Furthermore, damage to Telstra's infrastructure may result in interruption to the provision of essential services and significant costs. If you are aware of any works or proposed works which may affect or impact on Telstra's assets in any way, you are required to contact: Telstra's Network Integrity Team on phone number: 1800 810 443.

1.4.5 The developer shall be responsible for all public utility adjustment/relocation works, necessitated by the above work and as required by the various public utility authorities and/or their agents.

1.5 Identification Survey

1.5.1 The applicant is advised to obtain an identification survey from a registered surveyor to ascertain the correct location of the property boundaries, and to ensure the development does not encroach upon adjoining properties.

1.6 Engineering Notes

1.6.1 All works requiring approval under the *Roads Act 1993* (except standard vehicular crossings) or *Local Government Act 1993* must be approved PRIOR to the development application being operational.

1.7 Payment of Engineering Fees

1.7.1 If the applicant wishes for Council to issue the Construction Certificate or Subdivision Works Certificate as nominated in the 'Prior to Construction Certificate/Subdivision Works Certificate please:

- Complete application form
- Submit all relevant plans produced by a suitably qualified person and in accordance with Councils Standards.

1.8 Road Damage

1.8.1 The cost of repairing any damage caused to Council's assets in the vicinity of the land as a result of the development works shall be met in full by the applicant/developer.

1.9 Imported Fill Material

1.9.1 Any potential re-use of excavated soils is to be assessed against the threshold concentrations for sensitive land use as described in National Environment Protection Council “National Environment Protection (Assessment of Site Contamination) Measure” (2013). Excavated soil with contaminate concentrations below the health investigation levels may be used onsite.

1.9.2 Any fill material imported to the site shall be certified at the source by a suitably qualified consultant as VENM or ENM fill material, non-slightly saline and nonaggressive to concrete or steel. If the importation of fill is undertaken under a specific EPA exemption, relevant details of the EPA exemption shall be forwarded to Council prior to the importation of fill to the site. All VENM is also to be validated to NEPM 2013 Guidelines.

1.10 Endeavour Energy Requirements

1.10.1 Full compliance with the relevant requirements contained in Endeavour Energy’s standard conditions for development applications dated August 2023 and included at Annexure A of this consent is required.

1.11 Ampol Requirements

1.11.1 All actions are to be completed as detailed in the Encroachment Safety Management Study by Asset Engineering Solutions dated 23 June 2023 and the variations outlined in PDF 1 & 2 held at Council Record Number D23/586720

1.12 Department of Planning and Environment-Water

1.12.1 Full compliance with the requirements contained in Department of Planning and Environment-Water’s General Terms of Approval dated 1 July 2025 and included at Annexure B of this consent is required.

1.13 Jemena Requirements

1.13.1 Full compliance with the requirements contained in Jemena’s comments dated 18 October 2023 and included at Annexure C of this consent is required.

1.14 Sydney Water Requirements

1.14.1 Full compliance with the requirements contained in Sydney Water’s comments dated 15 May 2024 and included at Annexure D of this consent is required.

1.15 Transport for NSW (Sydney Train’s) Requirements

1.15.1 Full compliance with the requirements contained in Transport for NSW (Sydney Train’s) comments dated 23 May 2024 and included at Annexure E of this consent is required.

1.16 TransGrid Requirements

1.16.1 Full compliance with the requirements contained in TransGrid’s comments dated 25 March 2024 and included at Annexure F of this consent is required.

1.17 Transport for NSW Requirements

1.17.1 Full compliance with the requirements contained in Transport for NSW comments dated 22 November 2024 and included at Annexure G of this consent is required.

1.18 Easement for public access

1.18.1 In the future, when the bulk earthworks have been completed in this area of the site, Council will pursue a 7.5m wide easement in gross benefitting Council over the subject land, from the creek to the west to the railway line to Eastern Creek, for the purpose of a future strategic link through the site. This will need to be registered on the title of the land under the Conveyancing Act 1919 (NSW).

2 GENERAL

2.1 Scope of Consent

2.1.1 The proposed development is to be in accordance with the drawings/details as referenced in engineering Condition 8.1.2, subject to compliance with any other conditions of this consent.

2.1.2 The development is approved to take place in 5 stages as identified on Staging Plan Drawing Number 110847-03-CD500 Revision F dated 1 May 2024. The developer is to formally notify Council of their intention to commence works in respect of each of the 5 stages in order that applicable conditions can be enforced with each relevant stage.

2.1.3 The location of any sediment basins within the area of the site occupied by the proposed bulk earthworks batters or in the area between the limit of the bulk earthworks batters and Eastern Creek, are approved as temporary works only. Future applications cannot encroach into the C2 zone unless they are a permissible land use in this zone.

2.2 Suburb Name

2.2.1 The land the subject of this consent is known to be located in the following suburb. This suburb name shall be used for all correspondence and property transactions:

Suburb: Richards

2.3 Engineering Matters

2.3.1 Design and Works Specification

3.3.1.1 All engineering works required by this consent must be designed and undertaken in accordance with the relevant aspects of the following documents except as otherwise authorised by this consent:

a) Blacktown City Council's Works Specification - Civil (Current Version)

b) Blacktown City Council's Engineering Guide for Development (Current Version)

c) Blacktown City Council Development Control Plan (Current Version) including Part J – Water Sensitive Urban Design and Integrated Water Cycle Management

d) Blacktown City Council Growth Centre Precincts Development Control Plan

e) Blacktown City Council On Site Detention General Guidelines, S3QM online tool and standard drawing A(BS)175M

2.3.2 The Applicant is required to submit to Council, Bonds and/or Contributions for works associated with the development in conjunction with the civil engineering works required to be constructed as part of this development. Works may include:

- Maintenance of the construction works – Crossing 16 and the existing 1800mm-dia pipeline located opposite Wellington Street.

These matters will be individually addressed within the consent.

Note: A bond release inspection fee will apply.

2.3.3 Prior to release of any bond securities held by Council for civil engineering works, the payment of a bond release inspection fee in accordance with Council's Goods and Services Pricing Schedule must be made.

2.3.4 Written notice must be provided to adjacent properties, at least 5 days prior to works commencing, where works are approved by this consent and located within Council controlled lands (i.e. Roads, drainage reserves, parks, etc.)

A copy of this notice must be provided to Council's Co-ordinator of Engineering Approval.

2.4 Other Necessary Approvals

2.4.1 A separate application will be required for the following approvals, under the Local Government Act 1993 and/or the Roads Act 1993.

- Concrete box culverts (Crossing 16) and associated catch drains
- Vehicular Crossings
- Works on or occupation of existing public roads (Not including works covered by a Roads Act Approval).

3 PRIOR TO DEMOLITION WORKS COMMENCING

3.1 Safety/Health/Amenity

3.1.1 Security fencing shall be provided around the perimeter of the demolition site to prevent unauthorised entry to the site. Notices complying with AS 1319-1994 and displaying the words "DANGER - DEMOLITION IN PROGRESS", or similar message shall be fixed to the fencing at appropriate places to warn the public.

3.1.2 A sign shall be erected in a prominent position on the land indicating the name of the person in charge of the work site and a telephone number at which that person may be contacted outside working hours.

3.1.3 Should the demolition work:

(a) be likely to be a danger to pedestrians in a public place or occupants of any adjoining land or place,

(b) be likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or

(c) involve the enclosure of a public place,

3.1.4 A hoarding or protective barrier shall be erected between the work site and the public place or adjoining land or place. Such hoarding or barrier shall be designed and erected in accordance with Council's current Local Approvals Policy under the Local Government Act 1993.

3.1.5 Where necessary, an awning shall be erected, sufficient to prevent any substance from, or in connection with, the work falling into the public place or adjoining land or place.

3.1.6 The hoarding, awning or protective barrier shall be effectively illuminated between sunset and sunrise where it may be hazardous to any person in the public place.

3.1.7 Toilet facilities shall be provided on the land at the rate of 1 toilet for every 20 persons or part thereof employed at the site.

Each toilet provided shall be:

(a) a standard flushing toilet, and

(b) connected:

(i) to a public sewer, or

(ii) if connection to a public sewer is not practicable, to an accredited sewage management facility provided by the Council, or

(iii) if connection to a public sewer or an accredited sewage management facility is not practicable to some other sewage management facility approved by Council.

3.1.8 Soil erosion and sediment control measures shall be provided in accordance with Council's Soil Erosion and Sediment Control Policy.

3.2 Tree Protection

3.2.1 Unless specific approval is given in this consent, no trees, located within the subject allotment and/or within the Council Road Reserve (verge/nature strip) or any adjoining public open space, may be removed or pruned during demolition works.

3.2.2 Any tree not indicated to have consent for removal shall be effectively protected against damage as specified in the Tree Protection Plan.

3.2.3 Tree Protection measures must be installed before Demolition work begins.

3.3 Other Matters

3.3.1 The Applicant is to advise all adjoining neighbours, and those located opposite the subject development site, by letter, of their intention to commence demolition work. The letter shall be distributed at least 2 days prior to the intended work and include the following information:

- date/s, hours and duration of the works.
- contact name and phone number of the applicant
- contact name and phone number of the licensed demolisher
- SafeWork NSW contact number 131050, and email address contact@safework.nsw.gov.au

3.3.2 Photographic archival records of non-listed heritage buildings associated with the existing Meatworks buildings are to be collected and submitted to Council for its records prior to their demolition. The images are to be of a scope and quality to be used as part of the heritage interpretation for the site.

3.4 Traffic Management Plan

3.4.1 Prior to the demolition works, an appropriately qualified person is to prepare a comprehensive Traffic Management Plan (TMP). The TMP should document the controls and procedures for vehicles accessing the site. This TMP is to be maintained on-site and issued to every contractor or truck driver accessing the site and the principal issues to be documented are:

- the prescribed route for access (i.e. Garfield Road West and Bandon Road)
- the prescribed route for egress (ie. Bandon Road directly to Windsor Road)
- the hours available for access (i.e. 7.00am - 6.00pm Monday to Friday and 8.00am 1.00pm Saturday with no access on Sunday or Public Holidays)
- the co-ordination and communication to avoid any “bunching” of arriving or departing truck movements
- the maximum truck speeds within the site and on Bandon Road particularly approaching and departing the railway level crossing
- the prohibition of movement onto the level crossing unless there is adequate space available to “clear” the level crossing
- the prohibition of movements on Railway Parade and Garfield Road East
- drivers requirement to comply with the “7.0 Driver Code of Conduct, Monitoring & Review described in Traffic Impact Assessment dated April 2023 prepared by ttpa.

- the onsite traffic control and supervision of access and egress points for all truck movements

The final, approved TMP shall be submitted to Council for its records.

4 DURING DEMOLITION WORKS

4.1 Safety/Health/Amenity

4.1.1 Security fencing shall be maintained around the perimeter of the demolition site to prevent unauthorised entry to the site at all times during the demolition works. Notices lettered in accordance with AS 1319-1994 and displaying the works "DANGER - DEMOLITION IN PROGRESS", or similar message shall be maintained on the fencing at appropriate places to warn the public.

4.1.2 A sign shall be maintained in a prominent position on the land indicating the name of the person in charge of the work site and a telephone number at which that person may be contacted outside working hours.

4.1.3 Any hoarding or protective barrier required to be erected between the work site and the public place on adjoining land or place shall be maintained in an effective condition.

4.1.4 The required toilet facilities shall be maintained on the land at the rate of 1 toilet for every 20 persons or part of 20 persons employed at the site.

4.1.5 Soil erosion and sediment control measures shall be maintained in accordance with Council's Soil Erosion and Sediment Control Policy.

4.1.6 Any excavation and/or backfilling associated with the demolition works shall be executed safely and in accordance with appropriate professional standards, with any excavation properly guarded and protected to prevent them from being dangerous to life or property.

4.1.7 All demolition work and handling of materials shall be in accordance with Australian Standard 2601-2001 (Demolition of Structures) and all applicable SafeWork NSW requirements including the Code of Practice for the Safe Removal of Asbestos" – National Occupational Health and Safety Commission:2005 (if applicable).

4.1.8 All plant and equipment used on the land shall be operated by a competent person. Cranes used for hoisting and lowering of materials shall comply with AS 1418.1 and AS 1418.5 and be fitted with a load indicator and hoist limited device.

4.1.9 A valid public liability insurance policy of at least $10,000,000 shall be maintained throughout the demolition works.

4.1.10 Demolished materials, plant, equipment and the like shall not be stored or placed at any time on Council's footpath, roadway or any public place.

4.1.11 Should any excavation associated with the demolition works extend below the level of the base of the footings of a building on an adjoining allotment of land, including a public road or place, the person causing the excavation to be made:

(a) must preserve and protect the building from damage, and

(b) if necessary, must underpin and support the building in an approved manner, and

(c) must, at least 7 days before excavating below the level of the base of the footings of a building on an adjoining allotment of land, give notice of intention to do so to the owner of the adjoining allotment of land and furnish particulars of the excavation to the owner of the building being erected or demolished.

4.1.12 The owner of the adjoining allotment of land is not liable for any part of the cost of work carried out for the purposes of this condition, whether carried out on the allotment of land being excavated or on the adjoining allotment of land.

4.1.13 All previously connected services are to be appropriately disconnected as part of the relevant demolition works. The applicant is obliged to consult with the various service authorities regarding their requirements for the disconnection of services.

4.1.14 The demolisher has an obligation to ensure that the adjoining buildings and property are not damaged.

4.1.15 Any soils requiring excavation, onsite reuse and/or removal must be classified in accordance with “Waste Classification Guidelines Part 1: Classifying Waste” NSW EPA (2014)

4.2 Nuisance Control

5.2.1 Any noise generated during demolition shall not exceed those limits specified in the Protection of the Environment Operations Act 1997 and shall be limited to between 7 am and 6 pm, Monday to Friday, and 8 am to 1 pm, Saturday, with no demolition work being undertaken on Sundays or public holidays.

4.3 Waste Management

4.3.1 The waste material sorting, storing and re-use requirements of the approved Waste Management Plan and Council's Site Waste Management and Minimisation Development Control Plan shall be implemented during the course of the demolition works.

4.4 Tree Protection

4.4.1 The measures required to effectively protect trees on the land shall be maintained throughout the demolition works.

4.5 Hours of Operation

4.5.1 The hours of operation are limited to between 7.00am to 6.00pm, Mondays to Fridays; 8.00am to 1pm, Saturdays; and no such work to be undertaken at any time on Sundays or public holidays.

4.5.2 If any other activities are proposed to be undertaken outside of these hours, Council is to be notified and approval may be required depending on the activity.

4.6 Traffic Management

4.6.1 The applicant must comply with the approved traffic management plan during demolition works.

5 COMPLETION OF DEMOLITION WORKS

5.1 Final Inspection

5.1.1 A final inspection is required to ascertain compliance with the condition of approval prior to the release of the road damage deposit

5.2 Hazardous Materials and Waste

5.2.1 A clearance certificate/statement prepared in accordance with the National Code of Practice for the Safe Removal of Asbestos shall be issued by an independent licensed asbestos assessor or the competent demolition contractor who holds an appropriate Demolition Licence issued by the SafeWork NSW under the provisions of the Work Health and Safety Act 2011 (and any relevant Regulation there under). The certificate/statement must state that the pre-existing building/s was/were demolished in accordance with the conditions and terms of that licence, Australian Standard 2601-2001 – The Demolition of Structures and that any asbestos removal has been carried out in accordance with NOHSC-2002 – Code of Practice for Safe Removal of Asbestos. A copy of the clearance certificate/statement shall be lodged with Council.

5.2.2 Submit to Council the receipt from the trade waste depot for disposal of the asbestos from the removal/demolition of the existing buildings.

6 PRIOR TO CONSTRUCTION CERTIFICATE (GENERAL)

6.1 DA Plan Consistency

6.1.1 A Construction Certificate for the proposed development shall only be issued when the accompanying plans, specifications and/or details are consistent with the approved Development Application design plans.

6.2 Site Works and Drainage

6.2.1 Any required retaining wall(s) and/or other effective method to retain excavated or filled ground (not being Exempt Development under an environmental planning instrument), together with any associated groundwater drainage system, shall be designed by an appropriately qualified person. Details of such site works shall accompany a Construction Certificate.

6.3 Footpath/Road Condition Assessment Fee

6.3.1 A footpath/road condition assessment fee is to be paid prior to the issue of any Construction Certificate. The applicable fee will be charged in accordance with Council's Goods and Services Pricing Schedule.

Council will undertake an initial inspection of civil assets outside the development site. The applicant will be held liable for any damage arising from construction activities. Council will undertake reinstatement works and recover the costs from the applicant, which will be charged in accordance with Council's current Goods and Services Pricing Schedule in effect at the time of the work.

6.4 Special Infrastructure Contributions

6.4.1 The applicant is to make a special infrastructure contribution in accordance with any determination made by the Minister administering the Environmental Planning and Assessment Act 1979 under Section 7.23 of that Act that is in force on the date of the consent, and must obtain a certificate to that effect from the Department of Planning, Industry and Environment.

More information

Information about the special infrastructure contribution can be found on the Department of Planning and Environment's website: http://www.planning.nsw.gov.au/Policy-and-Legislation/Infrastructure/Infrastructure-Funding

6.5 Groundwater Management

6.5.1 A Groundwater Management Report for the proposed works is to be prepared by a suitably qualified consultant and submitted to Council.

6.6 Tree Management

6.6.1 The applicant is to provide our Greenspace Services Section with an Arboricultural Impact Assessment and Tree Management Plan for all trees located within the area that extends outside of the extent of the proposed bulk earthworks, as identified on the demolition plan.

6.6.2 All documentation, including plans, must be amended to reflect tree work approved in these conditions of consent. All trees shown on the plans are required to be numbered in accordance with an Arboricultural Impact Assessment Report. All trees, approved for removal, are to be identified with dashed circles. All trees, conditioned to be retained, are to be identified with a solid circle and have their Tree Protection Zone, compliant with the calculations of AS4970:2009, clearly plotted around the tree

6.6.3 Prior to issue of a Construction Certificate, a Project Arborist is to be appointed for the duration of the works on site. The Project Arborist must hold a minimum qualification of Australian Qualification Framework (AQF) Level 5 in arboriculture and have Public Liability Insurance (minimum $20 million) for the duration of the project. The name and

contact details of the Project Arborist are to be notified to Council prior to the commencement of any works on site, including demolition.

6.7 Natural Areas Requirements

6.7.1 An Arboricultural Impact Assessment and Tree Protection Plan for the hollow bearing trees in adjacent Sydney water land at the base of the existing steep batter on site is to be submitted by the proponent for Council's consideration. These and other neighbouring Lot trees must be protected from impacts of the proposed earthworks on site.

6.8 Threatened species credit retirement

6.8.1 The applicant shall retire the class and number of species credits in Table (1) to offset the impacts of the development.

Table (1): Ecosystem credits required to be retired - like for like

Impacted species credit species	Number of species credits	IBRA sub-region
Fauna: 4025 Myotis Macropus/ Southern Myotis	1	Anywhere in NSW

The requirement to retire credits outlined in Table (1) may be satisfied by payment to the Biodiversity Conservation Trust of an amount equivalent to the class and number of ecosystem credits, as calculated by the Biodiversity Offsets Payment Calculator.

A link to the Biodiversity Conservation Trust website, for directions on payment can be found at Pay into the fund to offset development | BCT (nsw.gov.au). You can also contact the BCT on 1300 992 688 or info@bct.nsw.gov.au

Evidence of the retirement of credits or payment to the Biodiversity Conservation Trust in satisfaction of Table (1) requirements shall be provided to Council prior to earthworks commencing.

6.9 Submission and approval of a Vegetation Management Plan

6.9.1 An updated Stage 1 Vegetation Management Plan (VMP) aligned with the bulk earthworks and comprising a detailed site plan and an accompanying report in a legible format prepared by a person who has qualifications and experience in respect of ecology is to be submitted by the proponent to Council for approval. The updated VMP is to be fully costed with a timeline of activities over 5 to 10 years detailing actions proposed to mitigate the impacts of the proposal to fauna and native vegetation, with a focus on the Eastern Creek Riparian Corridor and adjacent C2 and RE2 zones and areas with high biodiversity value. The updated VMP is to have a commencement date at the time of, or in advance of, bulk earthworks commencement. It must include full details of the actions to be undertaken in respect of the following:

- vegetation proposed to be removed
- protective fencing at the boundary of works adjacent to the 50m wide riparian corridor (including 10m wide vegetated buffer) measured from the top of bank and other areas of high biodiversity value
- measures to mitigate biodiversity impacts prior to and during vegetation clearing and on-site earthworks as proposed;
- strict erosion control strategies such as sediment fencing, sediment control traps, jute matting and a schedule of native planting for protection of Eastern Creek and other waterways;

- protection of adjacent high-quality areas of CEEC vegetation and hollow bearing trees, particularly in neighbouring Sydney Water land;
- weed control measures across the bulk earthworks boundaries that cover weed removal, storage and disposal to reduce the spread of seed or other propagules;
- measures to remove and control the dominant weed species along the 5km site boundary to Eastern Creek on site including Coral Trees (Erythrina x sykesii), Privet (Ligustrum sp.), Kikuyu (Cenchrus clandestinus), Paspalum (Paspalum dilatatum), Rhodes Grass (Chloris gayana), African Lovegrass (Eragrostis curvula), Blackberry (Rubus aggregatus), Crofton Weed (Ageratina Adenophora) and Pigeon Grass (Setaria pumila);
- measures to restore and reconnect riparian vegetation tracts along the 5 km site boundary to Eastern Creek on site which were identified in the ecology reports as important to streambank stabilisation and fauna movements in the area;
- emplacement of salvaged habitat resources from clearing into the retained riparian zones e.g. logs, as well as enhancement nestboxes appropriate to locally occurring fauna; and
- stabilisation of the entire bulk earthworks boundary e.g. with a native hydroseed mix.

The updated Stage 1 VMP is to be prepared in accordance with BCC Vegetation Management Plan Guidelines 2019.

6.9.2 The Stage 1 VMP must demonstrate that the works satisfy the requirements of Section 4.6 of the DCP for the riparian corridor.

6.9.3 A Stage 2 VMP must be submitted to Council for approval prior to commencement of the third stage of the bulk earthworks. It must include full details of the actions to be undertaken in respect of, but not limited to the following:

- revegetation of the Eastern Creek Riparian Corridor and adjacent C2 and RE2 zones
- species and spacing for trees, shrubs and groundcovers
- ongoing weed control measures
- ensure that the proposed revegetation works are consistent with Section 4.6 of the DCP
- ongoing maintenance of vegetation below the 1 in 100 year flood level to ensure it remains consistent with the requirements of Section 4.6 of the DCP.

The Stage 2 VMP is to be prepared in accordance with BCC Vegetation Management Plan Guidelines 2019 and to the satisfaction of Council.

6.9.4 A report and associated flood model is to be submitted to and approved by the Director City Planning and Development:

- a revegetated 50 m wide riparian corridor is included
- a roughness factor reflective of the 40m wide revegetated riparian corridor and 10m wide vegetated buffer in the stage 1 and stage 2 Vegetation Management Plans, in accordance with Section 4.6 of the Riverstone West Development Control Plan 2009.
- no adverse material flood impact on the adjoining propertie

6.10 Bond on Vegetation Management plan

6.10.1 Once the updated VMP is approved, a bond will be calculated at 100% of the cost of implementing the VMP to be provided to Council as security. The bond shall be returned to the proponent in stages following verification in writing by the Project

Ecologist that the performance targets and actions related to restoration works within the updated VMP have been met. Council may conduct inspections to support this.

6.11 Nomination of a Project Ecologist

6.11.1 A Project Ecologist for implementing, monitoring and reporting on the updated VMP, and to be present for and report on dam dewatering works and tree clearing works, must be nominated to Council with contact details provided prior to earthworks commencing.

6.12 Dust Control

6.12.1 A Construction Air Quality Management Plan is to be prepared by a suitably qualified consultant and submitted to Council for approval. It is to incorporate the dust control measures in the document held at Council's Record number D23/322012. It must also include specific dust monitoring and control strategies for each stage of construction.

6.13 Heritage matters

6.13.1 Should the historic cottages remain unoccupied, security measures must be implemented throughout the period of non-occupation to mitigate risks of fire, vandalism and neglect. Remediation to any associated damage must be completed prior to the issue of any Construction Certificate, and in accordance with the CMP.

6.14 Traffic Management Plan

6.14.1 Prior to the issue of a Construction Certificate, an appropriately qualified person is to prepare a comprehensive Traffic Management Plan (TMP). The TMP should document the controls and procedures for vehicles accessing the site. This TMP is to be maintained on-site and issued to every contractor or truck driver accessing the site and the principal issues to be documented are:

- the prescribed route for access (i.e. Garfield Road West and Bandon Road)
- the prescribed route for egress (ie. Bandon Road directly to Windsor Road)
- the hours available for access (i.e. 7.00am - 6.00pm Monday to Friday and 8.00am 1.00pm Saturday with no access on Sunday or Public Holidays)
- the co-ordination and communication to avoid any "bunching" of arriving or departing truck movements
- the maximum truck speeds within the site and on Bandon Road particularly approaching and departing the railway level crossing
- the prohibition of movement onto the level crossing unless there is adequate space available to "clear" the level crossing
- the prohibition of movements on Railway Parade and Garfield Road East
- drivers requirement to comply with the "7.0 Driver Code of Conduct, Monitoring & Review described in Traffic Impact Assessment dated April 2023 prepared by ttpa.
- the onsite traffic control and supervision of access and egress points for all truck movements

The final, approved TMP shall be submitted to Council for its records.

6.15 Construction Environmental Management Plan

6.15.1 A Construction Environmental Management Plan (CEMP) shall be submitted to show the staging of works to set out how clearing will be minimised, vehicle access roads, stockpiling areas, tree protection barriers, operations machinery, cleaning protocols, hours of operation, noise and vibration control, salinity management, a procedure for controlling the introduction and spreading of weeds and pathogens, including hygiene protocols and the arrangements for monitoring; erosion and sediment control and dust control. The Plan must be submitted to Council for approval.

The applicant must include the following:

(a) Construction Traffic Management Plan

(b) Erosion and Sediment Control Plan

(c) Construction Noise Management Plan

(d) Unexpected Finds Protocol

(e) Community Consultation and Complaints Handling

6.16 Updated Flood Emergency Response Plan

6.16.1 Submit an updated of Flood Emergency Response Plan prior to the issue of a Stage 1 Construction Certificate for Council's separate approval. This Plan is to be specific to the site and include contemporary flood information.

7 PRIOR TO CONSTRUCTION CERTIFICATE (ENGINEERING)

7.1 General

7.1.1 All relevant conditions within the 'Prior to Construction Certificate' section of this consent shall be satisfied before any Construction Certificate can be issued.

7.1.2 The engineering drawings referred to below are not for construction. The Construction Certificate drawings shall be generally in accordance with the approved drawings and conditions of consent. Any significant variation to the design shall require a section 4.55 application

Construction Certificate plans shall be generally in accordance with the following drawings prepared by J. Wyndham Prince and relevant Consent conditions:

CIVIL PLAN INDEX				
PLAN NO.	PLAN NAME	REV	DATE	Council Trim
110847-03-CD001	COVER SHEET	F	31/10/24	D25/183936
110847-03-CD002	INDEX, LEGEND & GENERAL NOTES	I	09/04/25	D25/183936
110847-03-CD003	OVERALL SITE PLAN	F	31/10/24	D25/183936
110847-03-CD004	HAUL ROAD TYPICAL SECTIONS	A	27/04/23	D25/183936
110847-03-CD010	CUT & FILL PLAN SHEET 1	D	10/10/24	D25/183936
110847-03-CD011	CUT & FILL PLAN SHEET 2	G	09/04/25	D25/183936
110847-03-CD015	SITE SECTIONS SHEET 1	B	31/10/23	D25/183936
110847-03-CD016	SITE SECTIONS SHEET 2	B	31/10/23	D25/183936
110847-03-CD017	SITE SECTIONS SHEET 3	C	31/10/23	D25/183936
110847-03-CD018	SITE SECTIONS SHEET 4	B	31/10/23	D25/183936
110847-03-CD040	DEMOLITION PLAN SHEET 1	A	27/04/23	D25/183936
110847-03-CD041	DEMOLITION PLAN SHEET 2	B	16/06/23	D25/183936
110847-03-CD050	ENGINEERING PLAN SHEET 1	D	10/10/24	D25/183936
110847-03-CD051	ENGINEERING PLAN SHEET 2	B	31/10/23	D25/183936
110847-03-CD052	ENGINEERING PLAN SHEET 3	E	10/10/24	D25/183936
110847-03-CD053	ENGINEERING PLAN SHEET 4	H	09/04/25	D25/183936
110847-03-CD060	INTERSECTION PLAN	F	31/10/24	D25/183936
110847-03-CD061	TURNING PATH PLAN SHEET 1	A	31/10/24	D25/183936
110847-03-CD062	TURNING PATH PLAN SHEET 2	A	31/10/24	D25/183936
110847-03-CD063	TURNING PATH PLAN SHEET 3	A	31/10/24	D25/183936
110847-03-CD200	CATCHMENT PLAN SHEET 1	C	10/10/24	D25/183936

110847-03-CD201	CATCHMENT PLAN SHEET 2	G	09/04/25	D25/183936
110847-03-CD300	CULVERT DETAILS	C	1/05/24	D24/233705
110847-03-CD301	CULVERT TAILOUT DETAILS (EXCLUDING BEBO ARCH)	B	10/10/24	D24/574538
110847-03-CD305	CATCH DRAIN DETAILS	C	18/10/24	D24/574538
110847-03-CD400	SOIL & WATER MANAGEMENT PLAN SHEET 1	B	10/10/24	D25/183936
110847-03-CD401	SOIL & WATER MANAGEMENT PLAN SHEET 2	B	31/10/23	D25/183936
110847-03-CD402	SOIL & WATER MANAGEMENT PLAN SHEET 3	D	10/10/24	D25/183936
110847-03-CD403	SOIL & WATER MANAGEMENT PLAN SHEET 4	G	09/04/25	D25/183936
110847-03-CD405	SOIL & WATER MANAGEMENT NOTES	A	27/04/23	D25/183936
110847-03-CD406	SEDIMENT BASIN CALCULATIONS SHEET 1	A	27/04/23	D25/183936
110847-03-CD407	SEDIMENT BASIN CALCULATIONS SHEET 2	A	27/04/23	D25/183936
110847-03-CD500	STAGING PLAN	I	09/04/25	D25/183936

7.1.3 A report and associated flood model is to be submitted to and approved by the Director City Planning and Development, to confirm that the critical durations of the storm events considered in the submitted models are not likely to result in an adverse flood impact on the affected areas. The report must include the hydrographs of the flood events and explain how to consolidate the critical durations of the different flood events to determine the flood impacts on the affected areas.

7.1.4 The following items are required to be addressed on the Construction Certificate plans:

i. Maximum design fill levels along Crossing 16 shall be nominal RL18.0mAHD.

ii. Batter slopes shall be in accordance with Riverstone West DCP August 2009.

iii. Longitudinal Section Culvert Crossing A in sheet CD300 rev C is redundant.

iv. The details of the tailout must be amended to match the box culvert, including the finished level, long-section and cross section of the design.

v. A catchment plan must be provided to identify the proposed areas from where runoff is collected and discharged into the proposed sediment basins.

vi. The details of the sediment basin must be provided including the dimension of the basins, the design water level, spillway and outlet protection.

vii. All sediment basins must be designed to provide minimum capacity to meet 95th percentile 5-day rainfall depth in accordance with the section 6.3.4 Landcom: Managing Urban Stormwater: Soils and Construction.

viii. Written concurrence from Transgrid must be provided to support the proposed basin to be installed over the Transmission easement.

x. The proposed filling between Richards Avenue and the railway corridor, which is shown on Plan No. 110847-03-CD011, Rev G, must be deleted. This area is to be designed to have surface stormwater flows freely draining towards Garfield Road West and existing vehicular access (known as Richards Avenue) to the heritage listed cottages shall be retained at existing levels.

xi. Any modifications to the engineering plans required to comply with condition 7.1.3

7.2 **Local Government Act Requirements**

7.2.1 Under Section 68 of the Local Government Act 1993 an approval for engineering work is required. These works include but are not limited to the following:

- Crossing 16,
- Catch drain 1,

- Catch drain 2,
- Surcharge drain,
- The connection between Riverstone Parade to Crossing 16, and
- The maintenance track leading into Crossing 16.

which are to be generally in accordance with the Sitewide Civil Work plan prepared by J. Wyndham Prince, Project No. 110847-001, Rev F and dated 31/10/2024. (Council's TRIM ref: D25/183936)

Detailed drainage plans are to be prepared by a chartered professional engineer (CPEng) (Civil / Environmental Engineer) who has membership to Engineers Australia.

The Section 68 application must include the following:

- Geotechnical report of the soil foundation under the Crossing 16.
- Structural design and certificate for the Crossing 16 both the foundation and structure. Certification shall be from a suitably qualified practising structural engineer.
- DRAINS model to confirm the detail of the Crossing 16 including the catchment area and flow rate.
- The crossing sections of the Crossing 16 including the subsoil layers, back filling, trenching etc.
- The connection between the catch drain 1 & 2 into the Crossing 16.
- Details of the discharge energy dissipating system at the Crossing 16 outlet. A bespoke amended design is required to avoid potential long term impacts on adjacent property. Further design details for this energy dissipating system will require additional ecological advice from a suitably qualified person.
- The staging plan of the installation of the Crossing 16.

An approval of stormwater drainage and associated works under the Section 68 of the Local Government Act 1993 issued by Council shall be obtained prior to issue of a Construction Certificate.

7.3 Roads Act Requirements

7.3.1 Under Section 138 of the Roads Act 1993 an approval for engineering work is required. These works include but are not limited to the following:

- Vehicular crossing on Bandon Road including area to make smooth connection with Haul Road 1,
- Vehicular crossing on Garfield Road West,
- Bandon Road upgrade between Haul Road 1 and TransGrid Access
    - The length of BANDON ROAD to be upgraded is approximately 480.00 meters between proposed access (Haul Road 1) and TransGrid Access.
    - The extent of upgraded works on Bandon Road shall be designed and constructed based on total traffic loading during construction and existing pavement assessment. Detailed design calculation of Bandon Road upgrade works shall be submitted to Council for the approval.

7.4 Other Engineering Requirements

7.4.1 If the estimated cost is $250,000 or greater proof of long service levy payment is required.

7.4.2 Any ancillary works undertaken shall be at no cost to Council.

7.4.3 Submit written permission from the affected property owner for any works proposed on adjoining land.

7.4.4 Submit written evidence from Transport for NSW indicating compliance with all necessary requirements.

7.4.5 Submit written evidence from Sydney Water indicating compliance with all necessary requirements.

7.5 Erosion and Sediment Control

7.5.1 Provide a sediment and erosion control plan in accordance with Council's Soil Erosion and Sediment Control Policy and Engineering Guide for Development.

7.6 Vehicular Crossings

7.6.1 Plans to demonstrate the construction an industrial and commercial vehicular crossing to Council's standard A(BS)103S.

7.7 Easements

7.7.1 A 3.5m wide easement for stormwater drainage in gross is to be created and registered over the existing 1800mm-dia pipeline located opposite Wellington Street, prior to the issue of any Construction Certificate for the development. The creation is pursuant to Section 88B of the Conveyancing Act, 1919 and registration with Land Registry Services (LRS). The easement shall burden Lot 50 DP 1295449 and benefit Blacktown Council.

7.7.2 A 35.0m wide easement for stormwater drainage is to be created and registered over the Crossing 16 culvert opposite Princes Street, prior to the issue of a Construction Certificate for that stage of works within which it is located. The creation is pursuant to Section 88B of the Conveyancing Act, 1919 and registration with Land Registry Services (LRS). The easement shall burden Lot 50 DP 1295449 and benefit Blacktown Council. This easement is associated with the Crossing 16 culvert opposite Princes Street.

Note: It is recognised that on future redevelopment (subject to the future masterplan and associated development applications) justification to Council' satisfaction may be provided to justify the replacement or relocation of the pipe system at which time Council would provide consent to replace or relocate the easement.

7.8 Transport for NSW requirements

7.8.1 Submit written evidence from Transport for NSW indicating their concurrence was the design of the entrance to site on Garfield Road West which incorporate the deceleration lane, physical barriers to enforce left in and left out only, and any relocation works required to the existing bus bay.

8 PRIOR TO CONSTRUCTION CERTIFICATE (ENVIRONMENTAL HEALTH)

8.1 Environmental Health Matters

8.1.1 Engage a suitably qualified environmental consultant to prepare a Long-Term Environmental Management Plan (LTEMP) for the ongoing protection, maintenance and management of the asbestos containment cell in compliance with all applicable laws and industry best practice.

8.1.2 The LTEMP is to confirm the location of the existing containment cell on-site.

8.1.3 The LTEMP is to include all measures necessary or appropriate to ensure the effective containment within the containment cell of all substances which are proposed for inclusion within the containment cell in perpetuity, and to protect the health of the environment and site users, and to ensure the suitability of the site for its proposed use.

8.1.4 The LTEMP is to be prepared to the satisfaction of a NSW EPA Accredited Site Auditor and Council.

8.1.5 Prior to commencement of works, evidence is to be provided to Council that a Section 88B Instrument and Deposited Plan which satisfy the following requirements and which have been approved by Council have been registered on title to the site of the Containment Cell:

- the Section 88B Instrument must be accompanied by a Deposited Plan for the site which identifies the Containment Cell with clear delineation and refers to the Section 88B Instrument in connection with the Containment Cell;
- the Section 88B Instrument must annex a copy of the LTEMP;
- the Section 88B instrument must contain a Public Positive Covenant which:
  - identifies that the site contains the Containment Cell and is subject to the LTEMP;
  - requires the registered proprietor (and its successors) to:
    - implement the LTEMP in full and manage the site in accordance with the LTEMP;
    - ensure that the Containment Cell is secure at all times and there is no leak, leaching or escape of the contents of the Containment Cell or any other failure of the Containment Cell;
    - keep the Containment Cell and the surface of the land on which the Containment Cell is located free from rubbish and debris;
    - ensure that the Containment Cell is accessible only by the registered proprietor for inspection, maintenance and repair purposes in accordance with the LTEMP;
    - remediate and make good any contamination or migrating contamination, loss or damage occurring in connection with the use or operation of the Containment Cell, or as a result of any failure to comply with the LTEMP, to a standard acceptable to Council;
    - upon becoming aware of an actual or likely non-compliance with the terms of the covenant, or upon reasonably suspecting one, inform Council in writing immediately, provide any information Council requests and do all things necessary to stop the non-compliance from occurring or continuing;
    - for the purposes of ensuring observance of the covenant, permit Council to enter and remain on the site and to take such other steps as Council considers appropriate, including inspecting the condition of the Containment Cell and the area around it;
    - comply with the terms of any written notice issued by Council which requires the registered proprietor to do something which Council (acting reasonably) considers is necessary to ensure compliance with the terms of the covenant within the time frame specified in that notice and provide Council with such evidence of compliance, or progress in complying, as Council (acting reasonably) requests;
  - acknowledges that, in the event that the registered proprietor (or any successor) fails to comply with the terms of any such written notice, Council may:
    - enter and remain on the site with all necessary equipment and carry out any works and do such other things as Council considers reasonable to comply with that notice;

        - recover from the registered proprietor any cost, loss or expense which Council reasonably incurs in doing so, including legal costs and disbursements on an indemnity basis;
    - provides that the registered proprietor will be responsible for and indemnifies Council against all liabilities (including all costs, expenses, losses, damages and other liabilities of any kind) which Council suffers or incurs as a consequence of any breach of the terms of the covenant;
    - provides that the registered proprietor may, subject to complying with all applicable laws, amend the LTEMP with the prior written consent of Council, and that any amendment of the LTEMP will not be effective until a copy of the amended LTEMP, as approved by Council, is registered on title to the site. Evidence of the registration of any amended LTEMP is to be immediately provided to Council;
    - cannot be released, varied or modified without the consent of Council; and
    - complies with any other requirements of, and contains any other terms required by, Council;
- the Section 88B instrument must contain a Restriction on the Use of Land which:
    - identifies that the site contains the Containment Cell and is subject to the LTEMP;
    - prohibits the registered proprietor (and its successors) from:
        - doing or permitting the doing of anything which is contrary to, or is inconsistent with, the LTEMP;
        - allowing anyone to access the Containment Cell for any purpose other than for inspection, maintenance or repairs as required under the LTEMP; or
        - doing or permitting the doing of anything which causes or may cause any contamination or any migrating contamination;
        - provides that the registered proprietor (and any successor) will be responsible for and indemnifies Council against all liabilities (including all costs, expenses, losses, damages and other liabilities of any kind) which Council suffers or incurs as a consequence of any breach of the terms of the restriction by the registered proprietor;
    - cannot be released, varied or modified without the consent of Council; and
    - complies with any other requirements of, and contains any other terms required by, Council; and
- the Section 88B Instrument must contain a statement to the effect that it is intended to be created on registration or recording of the deposited plan, as if it had been imposed under section 88E of the Conveyancing Act.

8.1.6 Provide to Council, an interim 'Letter of Advice' prepared by a NSW EPA Accredited Site Auditor, under the NSW Site Auditor Scheme, to confirm:

- The location of the existing containment cell
- Endorsement of the Long-Term Environmental Management Plan (LTEMP), with a view to issue a Site Audit Statement at completion of remediation works.

8.1.7 Evidence of the above conditions is to be provided to Council prior to the issue of any Construction Certificate.

9 PRIOR TO DEVELOPMENT WORKS COMMENCING

9.1 Safety/Health/Amenity

9.1.1 Toilet facilities shall be provided on the land at the rate of 1 toilet for every 20 persons or part thereof employed at the site.

Each toilet provided shall be:

(a) a standard flushing toilet, or

(b) a temporary on-site toilet which is regularly maintained and the waste disposed to an approved sewerage management facility.

9.1.2 A sign is to be erected and maintained in a prominent position on the site in accordance with Clause 98 A (2) of the Environmental Planning and Assessment Regulations 2000 indicating:

(a) the name, address and telephone number of the principal certifying authority for the work, and

(b) the name of the principal contractor (if any) for the building work and a telephone number on which that person may be contacted outside working hours, and

(c) stating that unauthorised entry to the work site is prohibited.

This condition does not apply to:

(a) building work carried out inside an existing building, or

(b) building work carried out on premises that are to be occupied continuously (both during and outside working hours) while the work is being carried out.

9.1.3 Soil erosion and sediment control measures shall be provided in accordance with Council's Soil Erosion and Sediment Control Policy.

9.1.4 All soil erosion and sedimentation control measures shall be installed prior to the commencement of development works.

9.1.5 Vehicle/plant access to the land shall be provided in accordance with the approved plans to minimise ground disturbance and transport of soil onto any public place. Such access shall be provided in accordance with the requirements of Appendix "F" of Council's Soil Erosion and Sediment Control Policy. Single sized 40mm or larger aggregate placed 150mm deep, and extending from the street kerb/road shoulder to the land shall be provided as a minimum.

9.1.6 Any excavation and/or backfilling associated with the development shall be executed safely and in accordance with appropriate professional standards, with any excavation properly guarded and protected to prevent such work being dangerous to life or property.

9.1.7 Should the development work:

(a) be likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or

(b) involve the enclosure of a public place,

a hoarding or protective barrier shall be erected between the work site and the public place. Such hoarding or barrier shall be designed and erected in accordance with Council's current Local Approvals Policy under the Local Government Act 1993.

Where necessary, an awning shall be erected, sufficient to prevent any substance from, or in connection with, the work falling into the public place.

The hoarding, awning or protective barrier shall be effectively illuminated between sunset and sunrise where it may be hazardous to any person in the public place.

9.2 Notification to Council

9.2.1 The person having the benefit of this consent shall, at least 2 days prior to work commencing on site, submit to Council a notice under Section 57 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021

indicating details of the appointed Principal Certifier and the date construction work is proposed to commence.

9.2.2 At least five (5) full working days written notice must be given for the commencement of engineering works. Such notice must be accompanied by evidence of the contractors Public Liability and Workers Compensation Insurances. For Public Liability Insurance this should be a minimum amount of $10,000,000.

9.3 Insurances

9.3.1 Current copies of relevant insurance Certificates of Currency are to be submitted to Council's Engineering Approvals Team. This shall be submitted prior to commencement of engineering works required by this consent that are carried out on Council controlled lands such as roads, drainage reserves and parks. This includes Public Liability Insurance with a minimum of $20,000,000 Indemnity and Workers Compensation.

9.4 Dilapidation Report

9.4.1 A dilapidation report on Bandon Road from Bandon Road and St James Road intersection to front boundary of the proposed development site shall be conducted and submitted to Council for records.

9.5 Transport for NSW

9.5.1 Written evidence shall be obtained from the Transport for NSW indicating compliance with its requirements, including the payment of any necessary works supervision fees. A copy of such approval shall be lodged with Council.

9.6 Adjoining Owners

9.6.1 Written permission from the respective owner(s) must be obtained to:

(a) discharge stormwater onto adjoining owner's land.

(b) carry out works on adjoining land.

(c) drain the site across land owned by others.

A copy of such written permission shall be lodged with Council.

9.7 Site Works and Drainage

9.7.1 Any required retaining wall(s) and/or other effective method to retain excavated or filled ground (not being Exempt Development under an environmental planning instrument), together with any associated groundwater drainage system, shall be designed by an appropriately qualified person.

9.8 Service Authority Approvals

9.8.1 Prior to the commencement for construction of footway crossings and driveways a clearance shall be obtained from the relevant telecommunications carriers and Endeavour Energy. The clearance shall notify that all necessary ducts have been provided under the proposed crossing.

9.9 Tree Management

9.9.1 No trees located on the site shall be removed other than those identified on the Council approved demolition plans or any subsequent approved plans.

9.9.2 No trees, located outside of the area of the proposed bulk earthworks and/or within the Council Road Reserve (verge/nature strip) or any adjoining public open space, may be removed or pruned unless specific approval is given in this consent.

9.9.3 All trees, including Community Assets (Public Trees), not approved for removal, or pruning by the Conditions of this Development Consent, are required to be retained and protected. Tree Protection Measures, compliant with the provisions of AS4970:

Protection of trees on development sites 2009 and must be installed prior to the commencement of any works on site, including demolition.

9.9.4 A Compliance Certificate is to be provided by the Project Arborist to the Principal Certifying Authority once the required Tree Protection Measures have been installed.

9.9.5 Any excavation, mechanical or by hand, or alteration to existing soil levels within the Tree Protection Zone of any tree is required to be undertaken in accordance with Australian Standard 4970.

9.9.6 Prior to the removal of any tree located on site the applicant shall:

- Have all trees inspected, by a Practicing Arborist with a minimum qualification of Australian Qualification Framework (AQF) Level 3 in Arboriculture, for the presence of hollows or potential hollows.
- Prior to any works being undertaken on tree/s approved for removal or pruning, a person, holding a wildlife handling licence, must be present on site. If, during tree works, an animal or bird is located, the accredited handler is to direct removal/relocation of the animal as appropriate. Accredited handlers can be contacted through Wires (<https://www.wires.org.au/>) or Birdlife Australia (<https://birdlife.org.au/>).

9.9.7 Trees, recommended for retention as specified Prior to Construction Certificate must be retained and protected. Tree Protection, as specified in the Tree Protection Plan is to be installed on site.

9.9.8 Prior to development works, including demolition, the Project Arborist is to provide Certification, to the Principle Certifying Authority, that all Tree Protection Measures have been installed in accordance with the requirements of this consent.

9.9.9 A Council representative may also attend to confirm the tree protection measures are correctly installed in line with the Tree Protection Plan.

9.10 Bushland Protection Fencing

9.10.1 Prior to any works commencing, permanent Bushland Protection Fencing in the form of a bushland boundary fence must be in place at the boundary of works adjacent to retained and riparian habitats and all high biodiversity values land in neighbouring properties. The Vegetation Management Plan will show the location of this fencing.

The fence is to restrict unauthorised entry and prevent the following:

- Stockpiling of materials
- Placement of fill
- Parking of vehicles
- Compaction of soil
- Earthworks incursions
- Cement washout and other chemical or fuel contaminants
- Damage to threatened species and their habitat

9.10.2 The protective fence is to be placed a minimum of 50m from the top of bank of Eastern Creek and around any remnant native vegetation.

9.11 Heritage Requirements

9.11.1 Prior to commencement of works, an archival recording of the site and all its buildings, structures and elements shall be undertaken. This is to include:

a) measured drawings

b) a photographic record of the site's layout, relationships between structures, existing landscape treatment and of the individual buildings, externally and

internally, room-by-room. The methodology to follow is HNSW guidelines "*Guidelines for preparing archival recordings of heritage items as a condition of consent*" (May 2025) and "*Photographic Recording of Heritage Items Using Digital Capture*" (2006)

9.11.2 Prior to commencement of the proposed development (ie Stage 1 Bulk Earthworks) the following heritage related documents must be lodged to Council for approval of Council's heritage staff and adviser:

9.11.2.1 Conservation Management Plan (CMP):

The draft updated CMP (issue C, March 2025) submitted for approval of Council's endorsement and consideration in any future masterplan of the site must be amended and supplemented to include the following:

- Review each of the 2003 CMP (Edds/Kass) conservation recommendations and carry forward applicable recommendations to the updated 2025 CMP. Provide detailed justification for deleting any previous recommendations.
- Include a 'Limitations' section within section 1.0 'Introduction' to more clearly articulate the limitations of the report. Integrate the words from the back of the cover page.
- Include in section 1.2 'Report Objectives' the objective of reviewing the 2003 CMP prepared by Graham Edds and Terry Kass and integrating and updating that report and its recommendations.
- Review Section 4.3, "*Significance of the Meatworks"* assessment to include related assessments from the 2003 CMP (Edds/Kass) . Consider changing this section to 4.2. Clarify the curtilage referred to as the "meatworks area". Review all the assessment criteria together with their concluding sentence with inclusion of assessments from the 2003 CMP.
- Review section 4.2, "*Significance of Listed Items*" to consider all the cottages (ie sites of earlier and remaining cottages). Change the heading to "*Significance of the Worker's Housing Precincts*" or similar. Review all the assessment criteria, including the concluding sentence, with inclusion of assessments from the 2003 CMP (Edds/Kass). Determine clear curtilages a drawing for these precincts.
- Review Section 4.4 "*Significance of Unlisted Area*" and related Conservation Policies in Section 6.0. Integrate the reviewed assessment of the cottages as recommended above in renumbered section 4.2. Clarify the curtilage for these areas within the property (ie those not included within the meatworks industrial area and the worker's housing precincts). Consider deleting this section and combining the "other areas" into either the meatworks curtilage (eg stockyards etc) and the workers' housing precincts (eg tennis courts and recreation areas) Review the assessments of those remaining areas if this section is to remain.
- Amend Table 4.1 "*Contribution to Significance of Site*" and related Conservation Policies in Section 6.0 after the review of the assessment of significance of the worker's housing precincts recommended above. The review is with the view of simplifying the elements by combining the worker's housing precincts into one heading in Table 4.1 ie 'High'.
- Amend the proposed curtilages of the worker's housing precincts to include the full historical fenceline and garden area related to each cottage. Ref Figure 4.1
- Include a drawing that describes the gradings of significance across the entire property. The drawing will be colour coded to relate to the various gradings of significance.

- Amend section 5.6 ‘Opportunities’ bullet point 5 to refer to the consideration of all appropriate options for retention and conservation of any buildings within the property before considering the option of relocation. Relocation is not a preferred option.
- Delete or amend policy 6.2.6 indicating that demolition of all unlisted buildings is appropriate and acceptable. Options should be fully explored to consider relocation within the property to retain and reinforce the significance. This should include relocation of the 4 cottages on Garfield Road opposite Denmark Road to an appropriate location within the remaining group of cottages, such as adjacent to Cottages 1, 3, 5 and 7 which should be retained to establish a cohesive group.
- Amend policy 6.12.1 indicating that all redundant services should be removed. As there have been no in depth inspections of the buildings or their interiors it would be inappropriate to remove any elements until SCW2 documentation has been completed.
- Delete the recommendation in Policy 6.7.1 to demolish all later rear additions and ancillary structures etc related to the cottages (including those currently listed) within 6 months of consent being issued for civil works. There will be no demolition of elements of the worker’s housing precincts without separate Council approval.
- Amend the recommendation in Policy 6.4.1 ‘*Conservation of Heritage Items’* to refer to the urgency required to implement Schedule of Conservation Works 1. Include a recommendation to complete all SCW 1 works prior to commencement of the proposed civil works.
- Amend the wording in the policies 6.10 related to internal fabric to follow the general structure and wording of, say, policy 6.10.5 or 6.10.6 ie simply place the word “retain” at the beginning of each policy.
- Amend the wording of section 6.8 and related policies ‘*Treatment of Elements of Different Grades of Significance*’ to more closely follow the wording and scaled approach recommended by Heritage NSW, the ICOMOS Burra Charter and/or the J.S.Kerr Conservation Plan for the various graded elements.
- Include a policy related to the ongoing high risk and high vulnerability of the property and its significant buildings and precincts. Develop recommended mitigation measures including a reviewed development program together with schematic options to enable the worker’s housing precincts and their associated buildings and gardens to be restored, re-activated and re-occupied as soon as possible.
- Include a monitoring regime to inform the conservation values and management of its heritage values into the future and for consideration in the development of any future masterplan for the site. In view of the wider significance of the property, its fragile state and the ongoing period of non-occupation the recommended monitoring regime should be based on HNSW Minimum Standards of Maintenance in terms of the detail, content and regular reporting.
- Include an investigation and assessment of the landscape and gardens, particularly those associated with the worker’s housing precincts. Include recommendation and policies for their retention and conservation. Integrate the recommendations and policies into the draft CMP as there are currently no landscape and gardens policies.
- A report addressing the historical archaeology of the property prepared by a suitably qualified and experienced archaeologist. Integrate the

recommendations and policies into the draft CMP as there are currently no archaeological policies.

- The property's cultural landscape(s) shall be identified and protected as part of the CMP. Integrate the recommendations and policies into the draft CMP as there are currently no cultural landscape policies.
- Any intangible heritage associated with the site, such as, oral histories or traditional skills, shall be documented and preserved. Integrate the recommendations and policies into the draft CMP as there are currently no intangible heritage policies.

9.11.2.2 Schedules of Conservation Works ((SCW) 1, 2 and 3):

All SCW will align with the following stages:

- SCW 1 – works to be completed prior to commencement of works of this DA consent (ie Stage 1 Bulk Earthworks)
- SCW 2 – works to be completed prior to the issue of any Subdivision Works Certificate / Construction Certificate Subdivision Certificate for any approved subdivision application.
- SCW 3 – works to be completed prior to the issue of the first Occupation Certificate for the first building constructed in line with a future concept / masterplan for the Precinct or alternative arrangement approved by Council to allow flexibility with the Applicant's roll out of the various stages of the development.

  Note : SCW 2 and 3 will need to be considered in the development of any future masterplan of the site to ensure best practice heritage outcomes for the overall site.

- The draft schedules SCW 1, 2 and 3 (issue D, March 2025) submitted for consideration and endorsement by Council must be based on a comprehensive assessment of each building and element and include a detailed analysis of its condition, significance, vulnerability and proposed conservation treatments.
- In view of the focus on conservation of a large number of fragile historic buildings, the work must be carried out by a suitably experienced heritage architect and submitted to Council for endorsement.
- All works on the heritage buildings are to be carried out by appropriately qualified trades people and supervised by the suitably qualified heritage advisor mentioned above.
- The Schedules shall prioritise conservation works based on the risk of deterioration and the potential for loss of significance
- The draft schedules must be amended and supplemented to include the following :

SCW 1 (Issue B, March 2025)

- A detailed investigation and documentation of the protective works required to secure the buildings and ensure weathertightness, security and protection of built fabric and safety of the buildings.
- A detailed investigation of protective works and measures to protect and avoid the deterioration of the structural integrity and fabric of the heritage items,
- The buildings should also be inspected by the following suitably qualified and experienced contractors:

- A structural engineer with heritage knowledge and experience, whose report should address the roof structure, settling, cracking, overturning and sub-floor structure of each building. This is particularly urgent in view of the non-occupation of the fragile timber buildings and the reference in the 2025 CMP to the structural movement of 17 Richards Avenue to halt any deterioration as part of SCW 1
- A hydraulic engineer or roof plumber, whose report should address the stormwater system and identify urgent issues and solutions.

o Establish a regular monitoring regime for the curtilage of the heritage items to ensure they are not damaged from any works related to the development, weathering, security and other risks.

SCW 2 (Issue D, March 2025)

o Works needing to be done regardless of future use to prevent further deterioration or loss of significant fabric in the longer-term, as informed by the investigations and reports called for in SCW1.

SCW 3 (Issue D March 2025)

o Works to be done to allow any adaptive reuse of the heritage items for a future purpose

- Note: Schedules 2 and 3 will need to be considered in the development of any future masterplan of the site.

9.11.2.3 Statement of Heritage Impact (SOHI) (April 2025 Rev1):

- Subsequent to the amendments and supplementary information to the draft CMP recommended above the draft SOHI must review and assess the amended content which may include gradings of significance and potential heritage items.
- The historical archaeology input recommended as part of the supplementary information to the CMP will require separate impact assessment by a suitably qualified and experienced archaeologist
- The reviewed draft SOHI must include considerations of options as recommended by typical HNSW statement of heritage impact methodology.

9.12 Other Matters

9.12.1 If the estimated cost is $250,000 or greater proof of long service levy payment is required.

9.12.2 Any ancillary works undertaken shall be at no cost to Council.

9.12.3 Submit written evidence from Transport for NSW indicating compliance with all necessary requirements.

9.12.4 Provide a sediment and erosion control plan in accordance with Council's Soil Erosion and Sediment Control Policy and Engineering Guide for Development.

9.12.5 The Applicant is to submit Stormwater Engineering Plans for the development within this development consent, prepared by a chartered professional engineer (CPEng) (Civil / Environmental Engineer) who has membership to Engineers Australia, indicating all details relevant to the collection and disposal of stormwater from the site, staged pad, road and where appropriate adjacent catchments.

The detail of the tailout from the catch drain 2 into the creek must be provided to prevent any erosion of the land in accordance with Council's specification.

Stormwater shall be conveyed from the site to sediment basins which must be designed in accordance with Landcom: Managing Urban Stormwater: Soils and construction.

Details demonstrating compliance are to be submitted to the Certifying Authority for approval prior to the commencement of work.

10 DURING DEVELOPMENT WORKS

10.1 Site Cut and Fill levels

10.1.1 The extent of cut and fill on the development site is restricted to that which is indicated on the approved plans.

Any ground re-shaping by cut and/or fill shall not compromise the structural integrity of any adjacent building, structure or service conduit on the subject or adjoining land.

10.2 Waste Management Plan

10.2.1 The waste material sorting, storage and re-use requirements of the approved Waste Management Plan and Council's Site Waste Management and Minimisation Development Control Plan shall be implemented during the course of development works. This includes the sorting and storage of waste and recyclable building materials on site for collection and disposal by the nominated waste/recycling contractor to the nominated disposal site.

10.3 Safety/Health/Amenity

10.3.1 The required toilet facilities shall be maintained on the land at the rate of 1 toilet for every 20 persons or part of 20 persons employed at the site.

10.3.2 A sign is to be erected and maintained in a prominent position on the site in accordance with Clause 98 A (2) of the Environmental Planning and Assessment Regulations 2000 indicating:

(a) the name, address and telephone number of the principal certifying authority for the work, and

(b) the name of the principal contractor (if any) for the building work and a telephone number on which that person may be contacted outside working hours, and

(c) stating that unauthorised entry to the work site is prohibited.

10.3.3 Should the development work:

(a) be likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or

(b) involves the enclosure of a public place,

the required hoarding, awning or protective barrier shall be maintained between the land and the public place.

The hoarding, awning or protective barrier shall be effectively illuminated between sunset and sunrise where it may be hazardous to persons in the public place.

10.3.4 All measures to control soil erosion and sedimentation shall be maintained throughout development works.

10.3.5 Vehicle/plant access to the land shall be maintained to minimise ground disturbance and transport of soil onto any public place. Such access shall be maintained in accordance with the requirements of Appendix "F" of Council's Soil Erosion and Sediment Control Policy. As a minimum, single sized 40mm or larger aggregate placed 150mm deep, and extending from the street kerb/road shoulder to the land shall be provided.

10.4 Hours of Operation

10.4.1 The hours of operation are limited to between 7.00am to 6.00pm, Mondays to Fridays; 8.00am to 1pm, Saturdays; and no such work to be undertaken at any time on Sundays or public holidays.

10.4.2 If any other activities are proposed to be undertaken outside of these hours, Council is to be notified and approval may be required depending on the activity.

10.5 Truck Routes

10.5.1 The ingress and egress routes used by trucks are to be compliant with the approved and prohibited routes identified in the Traffic Management Plan.

10.6 Nuisance Control

10.6.1 Any objectionable noise, dust, concussion, vibration or other emission from the development works shall not exceed the limit prescribed in the Protection of the Environment Operations Act 1997. All feasible and reasonable noise and vibration mitigation measures shall be implemented and any activities which may exceed the construction noise management levels and vibration criteria shall be identified and managed in accordance with an approved Construction Noise, Vibration Assessment and Management Plan.

10.6.2 The hours of any offensive noise-generating development works shall be limited to between 7.00am to 6.00pm, Mondays to Fridays: 8.00am to 1pm, Saturdays; and no such work to be undertaken at any time on Sundays or public holidays.

10.7 Dust Control

10.7.1 All the required dust control measures in the Construction Air Quality Management Plan are to be implemented during all stages of development works.

10.8 Waste Control

10.8.1 The waste material sorting, storage and re-use requirements of the approved Waste Management Plan and Council's Site Waste Management and Minimisation Development Control Plan shall be implemented during the course of development works.

10.9 Log Book

10.9.1 A daily log book is to be kept at the premises. This log book is to be made available for Council inspection at any time on request and must record:

- the date and time of delivery
- the registration number of every delivery truck,
- tonnage of fill being delivered,
- qualified hygienist certificate/report number
- location and source of fill being delivered

10.10 Qualified hygienist certificate/report number

10.10.1 Every qualified hygienist certificate/report number for imported fill is to be archived and accessible as requested, so that Council can undertake random checks if required.

10.11 Construction Inspections

10.11.1 The person having the benefit of this consent is required to notify the Principal Contractor for the building construction project that various mandatory and critical stage inspections must be conducted by an accredited certifier, and may include inspections (where applicable):

(a) After excavation for, and prior to placement of, any footings; and

(b) The tie downs; and

(c) Prior to covering any stormwater drainage connections; and

(d) After the building work has been completed.

10.12 Aboriginal Heritage

10.12.1 The applicant is to comply with the requirements of:

- Aboriginal Heritage Impact Permit Reference No. C0001996 dated 5 July 2016 applicable to this land.
- Notice of Variation of Aboriginal Heritage Impact Permit NO. C0001996 dated 26 May 2021
- Aboriginal Heritage Impact Permit No. C0002249 dated 26 October 2016
- Notice of Variation of Aboriginal Heritage Impact Permit NO. C0002249 dated 16 July 2021
- Any further variations to the above permits

10.12.2 If, during the course of construction, the applicant or persons acting on this consent become aware of any previously unidentified Aboriginal object(s), all work likely to affect the object(s) shall cease immediately and the NSW Office of Environment & Heritage informed in accordance with Section 89A of the National Parks and Wildlife Act 1974. The site, and objects, are to be assessed by a suitably qualified Aboriginal Heritage Consultant in accordance with the requirements of Heritage NSW. No further works are to be undertaken on the site until written authorisation from Heritage NSW is received by the Applicant. In addition, a member of each of the Western Sydney Aboriginal Stakeholder Groups is to be contacted.

10.13 Relationship with other approvals for Stage A works

10.13.1 Compliance with the requirements of the following nominated approvals:

a) Development Consent No. DA-22-01183 dated 12 December 2023 issued by Blacktown City Council

b) Modification Consent No. MOD-24-00120 dated 9 October 2024 issued by Blacktown City Council

c) Modification Consent No. MOD-24-00691 dated 1 April 2025 issued by Blacktown City Council

d) Relevant requirement of any other development consent, Construction Certificate issued under the Environmental Planning and Assessment Act, 1979, The Local Government Act, 1993 or The Roads Act 1993.

Confirmation that the conditions contained within the above approvals have been fully complied with must be provided to Council at the completion of Stage A.

10.14 Heritage matters

10.14.1 Regular monitoring and evaluation shall be conducted to assess the effectiveness of the conservation management measures in accordance with the adopted CMP and to identify any necessary adjustments.

10.15 Heritage Inspections

10.15.1 A regular series of detailed inspections of the historic cottages and their grounds shall be carried out throughout the development works from site commencement to completion. The applicant must engage a qualified heritage architect to prepare a detailed inspection reports which must be reviewed and approved by the Council's Heritage Advisor throughout the various stages of the development. The intent of the inspections is also to ensure the cultural significance values of the former Riverstone Meatworks site are protected until the photographic archival record required by condition 4.3.2 is collected. The aim is to prevent serious or irreparable damage or deterioration of the heritage items and ensuring a reasonable level of protection.

10.15.2 The inspections shall focus on the following aspects:

- Weather protection: Works shall include but not limited to the following; ground drainage systems; roof drainage systems; walls, doors and windows intended to provide weather protection; wind damage; ventilation systems and other measures to prevent ingress of water or dampness or to reduce its effects; etc
- Fire protection: Works shall include but not limited to the following: Removal of fire hazards, such as non-significant vegetation, rubbish or any other hazardous material. Significant garden plantings and trees shall be maintained not removed; building services shall be made safe; a fire or smoke detection system shall be installed or linked to the back-to-base building and site security system during the period the buildings are unoccupied.
- Security: Works shall include but not limited to the following: Fencing and a back-to-base surveillance system with appropriate coverage throughout the property; building security and appropriate locking systems; damaged doors and windows shall be made secure temporarily prior to repairs during the period the buildings are unoccupied.
- Essential maintenance and repair: Works shall include but not limited to the following: essential maintenance and repairs related to the above three aspects; the control of pests, such, as vermin, rodents, birds, termites and regular termite inspections; structural elements; exterior and interior fabric and finishes; fixtures and fittings and landscape and garden elements.

10.15.3 The inspections shall be carried out by a suitably experienced heritage architect and presented in a methodical and systematic format. The inspections should identify the necessary works required and each inspection report shall be lodged with Council for approval. A follow-up site inspection with Council may be required.

10.15.4 The frequency of inspections shall follow the staging of the works and an outline program prepared for Council at the time of site commencement. The inspection program shall be modified or adjusted to suit the progress of works. It is likely that after the first inspection subsequent inspections shall occur at periods no greater than annual intervals to completion of all development works. If buildings are completed and occupied in a staged manner the need for inspections would reduce following the staged occupation and reuse of buildings.

10.16 Compliance with the requirements of External Authorities

10.16.1 Full compliance is required with the relevant requirements of TransGrid, Endeavour Energy, Ampol, Department of Planning and Environment-Water, Sydney Trains, Transport for NSW, Jemena, Sydney Water Corporation and Ampol in their comments or General Terms of Approval.

11 DURING DEVELOPMENT WORKS (ENGINEERING)

11.1 Filling of Land and Compaction Requirements

11.1.1 Suitable land fill replacement is required when unsuitable soils are removed. All fill including existing fill shall be compacted in accordance with Council's Works Specification - Civil (current version). A compaction certificate shall be obtained from an appropriately qualified practising registered engineer (NER) verifying that the correct compaction requirements have been met. This compaction certificate is to be submitted to Council at the completion of each stage prior to commencing the next stage.

11.1.2 Special attention is drawn to the below listed requirements of Council's Works Specification - Civil (Current Version).

a) Contour lot fill diagrams and lot fill compaction certificates. A restriction as to User with Council's standard wording must be placed on filled lots.

b) Applicant to submit material compliance documentation in accordance with Councils Civil Works Specification 8.1.4

Note: Council's Works Specification (Civil) requires road pavement and pipe bedding materials be sourced from N.A.T.A. certified stockpiles.

The above documentation shall be submitted to Council at the completion of each stage prior to commencing the next stage.

11.1.3 Site filling within lot boundaries (not in road reserves) and compaction is to be carried out under the supervision of a Chartered Geotechnical Engineer and shall be in accordance with Blacktown City Council's "Works Specification - Civil (Current Version)". Minimum standard compaction of 95% must be achieved and certified by a NATA registered soils lab and details submitted to Council. The Level 1 Inspection Report for each stage shall be submitted to council prior to commencing the next stage.

11.1.4 Only clean fill shall be deposited/imported on site in accordance with Council's Works Specification - Civil (Current Version). Note: dry builder's waste i.e. bricks plaster and timber industrial waste or putrescible materials are not to be deposited on site. Validation of the imported fill material will be required by a suitably qualified registered engineer.

11.1.5 Appropriate dust control measures are to be implemented during construction to reduce any impact on local air quality and reduce dust emissions. This will include but not be limited to regularly wetting down of the site during the course of works being carried out in order to control wind-blown dust.

11.1.6 All roads adjoining the site must be kept clean and free of all materials. Infringement Notices incurring a monetary penalty may be issued by Council where this measure is not being complied with.

11.1.7 Trucks transporting cut and fill must have their loads covered and provisions of "shaker pads" and wash-down areas for trucks leaving the site are to be made available. All details are to be shown on soil erosion and sediment control plans.

11.1.8 Prior to the placement of any fill on the site all topsoil and vegetation must be removed down to a suitable sub-grade material. The topsoil is to be stockpiled for use in revegetation of the site.

11.2 Inspection of Engineering Works - Environmental Planning and Assessment Act 1979.

11.2.1 Comprehensive inspection compliance certificate(s) to be issued for all engineering works required by this consent and the approved construction certificate. The inspection compliance certificate(s) can only be issued by Council or an accredited certifier, under *Part 4A of the Environmental Planning and Assessment Act 1979* as amended. A schedule of mandatory inspections is listed in Council's Works Specification – Civil (current version).

Where Council is appointed as the Principal Certifier for the development, compliance certificates issued by accredited certifiers in lieu of council inspections will only be accepted by prior agreement or by Council request. All compliance certificate(s) must certify that the relevant work has been completed in accordance with the pertinent Notice of Determination / Development Consent and Construction Certificate.

11.3 Public Safety

11.3.1 The applicant is advised that all works undertaken are to be maintained in a safe condition at all times. Council may at any time and without prior notification make safe any such works Council considers to be unsafe and recover all reasonable costs incurred from the applicant.

11.4 Site Security

11.4.1 Chain wire gates and security fencing must be provided around the site in order to prevent unauthorised access and dumping of rubbish.

11.5 Traffic Control

11.5.1 Any "Traffic Control Plan" utilised for engineering works required by this consent must be prepared by a person who holds a current Roads and Maritime Services (RMS) Work Zone Traffic Management Plan accreditation and photo card for all works that are carried out in or adjacent to a public road. This Plan must satisfy all the requirements of AS 1742.3 - 2009.

11.5.2 Traffic control devices/facilities (i.e. barricades, signs, lights, etc.) required by the certified Traffic Control Plan must be setup, installed, monitored and maintained and by a person who holds a current Roads and Maritime Services (RMS) accreditation and photo card to implement Traffic Control Plans.

11.5.3 Persons undertaking the control of traffic through or around work sites on Council controlled roads must hold a current Roads and Maritime Services (RMS) Traffic Controller accreditation and photo card and carry it with them.

11.5.4 The applicant is advised that prior to implementation of any traffic control system and during the entire course of construction suitably qualified Roads and Maritime Services (RMS) accredited work site traffic controllers will ensure a smooth transition with other nearby traffic control setups. The coordination, communication and cohesion between adjacent traffic control systems shall be addressed by the applicant and must satisfy all the requirements of AS 1742.3 - 2009.

11.5.5 Where the Traffic Control Plan may change during the course of construction to facilitate new works, a revised traffic control plan shall be prepared and certified by a person who holds a current Roads and Maritime Services (RMS) accreditation to prepare a Work Zone Traffic Management Plan. This Plan must satisfy all the requirements of *AS 1742.3 – 2009* and the current version of the RMS *Traffic Control at Work Sites* manual and shall be submitted to Council prior to implementation.

11.6 Tree Protection and Preservation

11.6.1 All sub-surface services (e.g. gas, water, electricity, stormwater, sewerage etc) are to be located outside of the Tree Protection Zone of any tree required to be retained and protected by this consent, including those located on adjoining properties.

11.6.2 Under no circumstances are sub-surface services to be installed within the Structural Root Zone of a tree required to be retained and protected by this consent, including those located on adjoining properties.

11.6.3 Power poles, stormwater grate drains, service lines etc. are to be located to avoid any need to install services within a Tree Protection Zone or to excavate through a Tree Protection Zone. All such features are to be located so that they do not negatively impact on any tree required to be retained by this consent or which is located on an adjoining site. Only where there is no other viable option available are services to be installed within the Tree Protection Zone.

11.6.4 Where services are required to be installed within the Tree Protection Zone, the Project Arborist is to be consulted prior to the works being undertaken and appropriate, tree sensitive installation methods are to be used. Open excavation must only be used on the authorisation of the Project Arborist and must be completed by hand, use of mechanical digging tools is not permitted.

11.6.5 The Project Arborist is required to supervise and direct all work associated with the installation of sub-surface services within the Tree Protection Zone of any tree required to be retained and protected by this consent, including those located on adjoining properties.

11.6.6 At the completion of the works, the Project Arborist must provide a Compliance Certificate to the Principal Certifying Authority which details the method used for the

installation of the sub-surface services, identifies all tree roots severed by diameter and depth, and all tree protection measures implemented.

11.6.7 During development work, including demolition and landscape construction, the Project Arborist is to complete site inspections and/or supervision of work, as indicated in Tree Protection Plan.

11.6.8 The Project Arborist must be appointed before demolition of any existing structures or earthworks. They are to register with the Developer before any works commence so that the builder can be inducted as to essential times when the Arborist will be required on-site. Hold points, inspections and certification are to be carried out by the Arborist.

11.6.9 During development work, including demolition and landscape construction, the Project Arborist is to carry out regular site monitoring, to ensure Tree Protection Measures are being maintained compliant with the requirements of this consent. Record of these site visits is to be sent to the Principal Certifying Authority.

11.6.10 Where a non-compliance with the conditions of this consent is identified, the Project Arborist is to notify the Principal Certifying Authority within 3 working days from the date of the site visit. The notification must include the following details:

- Description of the non-compliance,
- Remedial actions required,
- Time frame for remedial actions to be completed in.

11.6.11 The Principal Certifying Authority must ensure that the recommendations of the Project Arborist are implemented within the stated timeframes.

11.7 Soil Erosion and Sediment Control Measures

11.7.1 Soil erosion and sediment control measures onsite shall be implemented, maintained and monitored in accordance with Council's Soil Erosion and Sediment Control Policy.

11.7.2 Re-vegetation and restoration of all disturbed areas as a result of the development works shall be completed as soon as practicable after the completion of earthworks and before the commencement of any other works on-site. The revegetated/restored areas must be established prior to the release of maintenance security/bonds. Note: All open drains must be turfed.

11.7.3 All required soil erosion and sedimentation control measures are to be maintained throughout the entire construction period and until all disturbed areas are restored to the satisfaction of Council in accordance with the design and construction specification. Infringement Notices incurring a monetary penalty may be issued by Council where the maintenance of measures is deemed inadequate.

11.8 Filling in Contaminated Land

11.8.1 During the course of placement of filling the applicant shall undertake further testing for potential soil contamination. Validation of the imported fill material will be required.

11.8.2 All testing and validation of the fill material shall be undertaken by a suitably qualified environmental consultant in accordance with Council's Policy and Procedures for the determination of Rezoning Development and Building Applications involving Contaminated Land. A Remediation and Validation Report documenting the testing undertaken shall be submitted to Council for approval.

11.8.3 Should any remediation works be required documentary evidence prepared by a suitably qualified environmental consultant validating the site is to be submitted to Council for approval.

11.9 Other Matters

11.9.1 A chartered professional engineer (CPEng) (Civil / Environmental Engineer) who has membership to Engineers Australia is to certify that all the requirements of the

installation of the liner, subsoil pipes and each layer of the basin matches the design requirements in accordance with Landcom: Managing Urban Stormwater: Soils and construction.

11.9.2 A Work-as-Executed (WAE) plan signed by a Registered Engineer (NER) or a Registered Surveyor must be submitted to Council at the completion of each stage of bulk earthworks prior to commencing the next stage. A colour soft copy (on a CD/USB with file format .PDF) of the WAE plans are to be submitted to Council.

11.9.3 A Work-as-Executed (WAE) plan signed by a Registered Engineer (NER) or a Registered Surveyor must be submitted to Council at the completion of the Section 68 Local Government Act 1993 and Section 138 Roads Act 1993 approvals. each stage of bulk earthworks prior to commencing the next stage. A colour soft copy (on a CD/USB with file format .PDF) of the WAE plans are to be submitted to Council.

11.9.4 All engineering WAE plans MUST be prepared on a copy of the original, stamped Construction Certificate plans for engineering works. All works shall be in accordance with the approved plans.

12 DURING DEVELOPMENT WORKS (ENVIRONMENTAL HEALTH)

12.1 Environmental Health Matters

12.1.1 An unexpected-finds policy (UFP) should be prepared and implemented for the proposed site redevelopment works in relation to site contamination.

12.1.2 Any fill material imported to the site shall be certified at the source by a suitably qualified consultant as VENM or ENM fill material, non-slightly saline and nonaggressive to concrete or steel. If the importation of fill is undertaken under a specific EPA exemption, relevant details of the EPA exemption shall be forwarded to Council prior to the importation of fill to the site. All VENM is also to be validated to NEPM 2013 Guidelines.

12.1.3 Any materials requiring off-site disposal will need to be classified, managed and disposed of in accordance with the Protection of the Environment Operations Act (NSW) 1997 and the NSW Environment Protection Authority's Waste Classification Guidelines (2014)

12.1.4 Any asbestos material is to be handled and treated in accordance with the SafeWork NSW document "*Your Guide to Working With Asbestos - Safety guidelines and requirements for work involving asbestos*" dated March 2008.

12.1.5 The site is to be managed in accordance with the LTEMP.

12.1.6 The recommendations made in the Construction Noise and Vibration Management Plan prepared by Renzo Tonin & Associates, dated 28 April 2023 are to be implemented.

12.1.7 Upon receipt of a justified complaint in relation to noise pollution emanating from the premises, an acoustical assessment is to be carried out in accordance with the requirements of the Department of Environment and Conservation's Environmental Noise Management - NSW Industrial Noise Policy and provide recommendations to mitigate the emission of offensive noise from the premises. The report shall be prepared by an appropriately qualified acoustic consultant that is a member of the Association of Australian Acoustic Consultants and shall be submitted to Council for consideration.

12.1.8 Any activity carried out in accordance with this approval shall not give rise to air pollution (including odour), offensive noise or pollution of land and/or water as defined by the Protection of the Environment Operations Act 1997.

12.1.9 All waste generated on the site is to be stored, handled and disposed of in such a manner as to not create air pollution (including odour), offensive noise or pollution of

land and/or water as defined by the Protection of the Environment Operations Act 1997.

12.1.10 In accordance with the requirements of Part 5.7 Protection of the Environment Operations Act 1997, Council is to be informed of any pollution incident that occurs in the course of carrying out the approved activity where material harm to the environment is caused or threatened.

13 DURING DEVELOPMENT WORKS (NATURAL AREAS)

13.1 Dam Dewatering

13.1.1 An aquatic ecologist or licenced wildlife handler is to be present during the dewatering of the onsite dam. Their role is to reduce and minimise the risk of injury to native aquatic fauna which may be present; to safely relocate any native fauna present; and to humanely euthanise pest fauna from the dam.

Within 14 days of the dam dewatering the aquatic ecologist is to provide a report on the works, including tallies of species relocated and euthanised, to Council through the Natural Areas Team.

13.2 Tree clearing

13.2.1 A qualified ecologist or licenced wildlife handler is to be present during removal of native trees on site.

Within 14 days of tree clearing the ecologist is to provide a report to Council on logs relocated, fauna rescued and relocated and fauna injured/transported to a vet or euthanised.

13.3 Compliance with Vegetation Management Plan

13.3.1 The requirements of the approved Vegetation Management Plan are to be complied with during the development works.

14 POST DEVELOPMENT WORKS REQUIREMENTS FOR EACH STAGE

14.1 Road Damage

14.1.1 The cost of repairing any damage caused to Council's assets in the vicinity of the land as a result of the development works shall be met in full by the applicant/developer.

14.2 Temporary Facilities Removal

14.2.1 Any hoarding or similar barrier erected to protect a public place shall be removed from the land and/or public place.

14.2.2 Any temporary toilet facilities provided during construction works shall be appropriately dismantled, disconnected and removed from the land.

14.2.3 Any temporary soil erosion control measure installed during development works shall be removed and other permanent measures required by Council’s Soil Erosion Control Policy shall be provided.

14.2.4 Any temporary builder's sign or other site information sign shall be removed from the land.

14.2.5 Any temporary site access provided for the purpose of development works shall be removed and the kerb and gutter and/or previous roadworks reinstated in a manner satisfactory to Council. Should the reinstatement involve the provision of a new vehicular crossing, layback, kerb and gutter or road shoulder works the separate approval of Council's Maintenance Section shall be obtained (and any appropriate fees paid) prior to such works commencing.

14.3 Tree Preservation

14.3.1 Upon completion of each stage of earthworks, the Project Arborist is to provide certification, to the Principal Certifying Authority, that the Tree Protection Measures, as required by the conditions of this consent, have been implemented and maintained during the project.

14.3.2 The trees retained for the development must be in good health and condition and evidence is to be submitted to Council upon completion of each stage of earthworks. The applicant must follow the recommendations in the Tree Protection Plan.

14.4 Inspections

14.4.1 Any additional Council inspections beyond the scope of any Compliance Certificate package and needed to verify full compliance with the terms of this consent will be charged at the individual inspection rate nominated in Council's Fees and Charges Schedule.

14.5 Environmental Health Requirements

14.5.1 At the completion of each stage of works, provide to Council an interim 'Letter of Advice' prepared by a NSW EPA Accredited Site Auditor, under the NSW Site Auditor Scheme, to confirm that the entire area where works were undertaken has been fully remediated and validated as suitable for the proposed use.

14.5.2 After the final stage of the development is completed, submit to Council a Section A Site Audit Statement and Report completed by a NSW EPA Accredited Site Auditor, under the NSW Site Auditor Scheme, in accordance with the *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme 2017.*

14.5.3 The Long-Term Environmental Management Plan is to be attached to the Site Audit Statement confirming the site is suitable for the proposed use.

14.6 Post Earthworks Geotechnical and Salinity report

14.6.1 A post earthworks geotechnical and salinity report shall be submitted for Council's records upon completion of each stage of earthworks.

14.7 Engineering Matters

14.7.1 **Surveys/Certificates/Works As Executed plans:**

14.7.1.1 A Work-as-Executed (WAE) plan signed by a Registered Engineer (NER) or a Registered Surveyor must be submitted to Council when the engineering works are completed. A colour soft copy (on a CD/USB with file format .PDF) of the WAE plans are to be submitted to Council. All engineering WAE plans MUST be prepared on a copy of the original, stamped Construction Certificate plans for engineering works and demonstrate the batter within the land zoned C2 and RE2 is installed in accordance with the approved plans for this application.

14.7.1.2 A Certificate shall be submitted by a Registered Surveyor indicating that all pipelines and associated structures lie wholly within the easements required by this consent.

14.7.1.3 Applicant is to compile and submit the following in accordance with Council's Works Specification - Civil (Current Version):

a) Contour lot fill diagrams and lot fill compaction certificates. A restriction as to User with Council's standard wording must be placed on filled lots.

b) Applicant to submit material compliance documentation in accordance with Councils Civil Works Specification 8.1.4

- Compliance Certificate and Test Results
- Delivery Dockets
- Summary of Material deliveries as per template available on Councils website.

14.7.1.4 This development requires separate approvals under the *Roads Act 1993* and / or *Local Government Act 1993.* Prior to the issue of an Occupation Certificate, The applicant must obtain written confirmation from Council that these works have been completed to its satisfaction.

14.7.2 **Easements/Restrictions/Positive Covenants:**

14.7.2.1 Any covenant(s) easement(s) or restriction(s) required by this consent must nominate Blacktown City Council as the authority to release, vary or modify the easement(s) or restriction(s). The form of easement or restriction created as a result of this consent must be in accordance with the following:

(a) Blacktown City Council's standard recitals for Terms of Easements and Restrictions (Current Version).

(b) The standard format for covenants, easements and restrictions as accepted by the Land Registry Services (LRS).

14.7.2.2 All Section 88B restrictions and covenants created, as part of this consent shall contain a provision that they cannot be extinguished or altered except with the consent of Blacktown City Council.

14.7.3 **Bonds/Securities/Payments in Lieu of Works:**

14.7.3.1 A maintenance security of 5% of the value of the required engineering works must be lodged with Council prior to the practical completion of the works. Council will hold this security for a period of at least twelve months.

a) In the case of subdivision - This period commences at the release of the final plan of subdivision. (Issue of Subdivision Certificate)

b) In the case where no subdivision occurs - This period commences at the date of practical completion of the development.

This maintenance period may be extended in the following situations to allow for the completion of i) necessary maintenance and or ii) all outstanding minor works.

Attachment 4: Summary of meetings

1. A meeting was held with Rhelm, Council, Department of Planning Housing and Infrastructure, Sakkara and their consultant team on 25 March 2025. Rhelm summarised their review and the applicant summarised their responses. The outcome of that meeting was that there were further actions for the applicant and Council to complete. For the most part, the applicant needed to provide further information to Council and Rhelm to address unresolved issues and other matters raised at the meeting. In response the applicant provided the following information:
    - Sakkara (2025) Letter to Blacktown City Council RE: DA-23-00740 - 36 Garfield Road, West Richard – Project Timeline Attachments, dated 7 April 2025.
    - Sakkara (2025) Letter to Blacktown City Council RE: DA-23-00740 - 36 Garfield Road, West Richard – Vegetation Offset Response, dated 10 April 2025, including the following attachments:
        - GLN (2025) Letter to Sakkara RE: DA-23-00740 Vegetation Offset Requirement & works within C2 Zoned Land Property: Lot 50 Deposited Plan 1295449 (formerly Lot 211 Deposited Plan 830505); 36 Garfield Road West, Richards NSW 2765, dated 10 April 2025.
    - Worley Consulting (2025) Letter to Sakkara Riverstone West Precinct (Richards) site wide civil works (DA-23-00740) compiled list of completed flood studies and flood related investigations, dated 14 April 2025.
2. A further meeting was held with Rhelm, Council, Department of Planning Housing and Infrastructure, the applicant and their consultant team on 15 April 2025. The applicant provided a presentation on riparian corridor roughness to justify why they have assumed a roughness of 0.05 in their flood modelling. Rhelm discussed 4 key items that were still unresolved including:
    - what constitutes the baseline condition for flood impact risk assessment (FIRA)
    - drainage design concerns at station area
    - sediment basin sizing was still inadequate
    - more consideration is required of the effect of riparian corridor vegetation

    The outcome of that meeting was that there were further action items for Council and the applicant. The applicant also needed to provide further information to Council and Rhelm to address the unresolved issues raised by Rhelm.
3. The applicant then provided the following information:
    - GLN (2025) Memorandum from GLN to Sakkara Base Flood Model Scenario DA-23-00740 - 36 Garfield Road West, Richards NSW 2765, dated 2 May 2025.
    - GLN (2025) Memorandum from GLN to Sakkara Water Management Act DA-23-00740 - 36 Garfield Road West, Richards NSW 2765, dated 2 May 2025.
    - Digital files (SHP format) of various water management features including resized sediment basins, access tracks to the basins, top of bank of Eastern Creek and riparian protection area beyond the top of bank.

- JWP (2025) Amended Sitewide Civil Works Drawing Package (Various Sheets, Revisions ranging from A- I), dated 9 April 2025.

4. The Department of Planning Housing and Infrastructure provided the following information:
   - An email dated 13 May 2025 which explains:
     - the State Government's position on the appropriate baseline flooding assessment used in the Cardno flood model
     - the relevance of Water Management Act in relation to other planning Instruments
   - North West Growth Centre Waterfront Lands Strategy (2009) via email on 4 June 2025
5. Rhelm then provided draft supplementary review and advice on 5 June 2025 which assessed all the above additional information and identified the issues that were resolved or still unresolved. The draft supplementary review also identified 2 core issues being:
   - impact of the application in isolation and without appropriate roughness assumptions
   - insufficient proposed scour protection arrangements for the Bebo Arch outlet
6. A Panel briefing was held with Council and Rhelm on 5 June to understand the status of Council's assessment and any outstanding issues. Rhelm presented the remaining issues outlined in the supplementary review. The Panel sought to understand the materiality and level of risk associated with these matters. Rhelm advised that the draft supplementary review had been issued to Council further explaining the matters. The draft supplementary review was then issued to the Panel after the briefing.
7. A meeting was then held with the Panel, Council, the applicant and the applicant's consultants on 12 June 2025. At this meeting Council raised the remaining issues that emerged from Rhelm's draft supplementary review. The outcome of the meeting was that the following additional information was requested from the applicant to address the remaining issues:

   Further assessment required for the following flood modelling parameters:
   - baseline flood conditions excluding planned upgrades to Garfield and Bandon Roads
   - roughness coefficients that are consistent with the requirements of Section 4.6 of the DCP
   - the storm event durations for the different flood models provided in the overland flow assessment and Flood Impact and Risk Assessment (FIRA) remains unclear.
   - Suggest a potential condition of consent regarding the insufficient scour protection proposed for the Bebo Arch outlet for Council's to consider.

   At the meeting, the applicant also identified matters that were unclear from Rhelm's draft supplementary review, particularly the issue around the storm event duration considered for the different flood models. It was decided that the applicant's flood consultant and Rhelm would have a separate meeting to discuss any items that required clarity.
8. On 13 June 2025, the applicant provided additional information including:
   - a covering letter from GLN Planning dated 13 June 2025
   - supplementary flood risk impact assessment by Worley dated 9 June 2025 that excludes the upgrades to Garfield Road West and Bandon Road

- slides from the presentation by Worley at the 15 April 2025 meeting that show the vegetation community envisaged for the environmental corridor that was assumed for the purposes of determining the 0.05 roughness
- letter from the applicant's ecologist EMM dated 13 June that provides confirmation of the vegetation community structure and densities for revegetating the environmental corridor to meet the requirements of Section 4.6 of the Riverstone West Precinct Development Control Plan 2009.

9. A meeting was then held between Council, Rhelm and the applicant's flood consultant on 17 June 2025 to discuss the items that required clarity from Rhelm's draft supplementary review. The outcome of the meeting was that the applicant's flood consultant agreed to produce a table that displays the flood durations for both the Worley Parsons (Eastern Creek) and J Wyndham Prince (Riverstone Town Centre) flood studies. The applicant's flood consultant provided the table of flood durations on 19 June 2025, which was sent to Rhelm to review.
10. An update meeting was then held between the Panel, Council and the applicant on 19 June 2025. Final action items and timeframes were established to submit this supplementary report to the Panel for determination.
11. Rhelm then provided a final supplementary review and advice (attachment 2 of this report) on 23 June 2025 which assessed all the above additional information and outlined the issues that are still unresolved or resolved.
12. Council shared draft conditions of consent with the applicant on 27 June 2025. Council and the applicant met on 1 July and 2 July 2025 to discuss the draft conditions of consent that were in contention.

Table C.2 Modified Cowan method for determining channel roughness

Manning's n = $(n_b + n_1 + n_2 + n_3 + n_4)$ m

Channel condition		n and m values	Description
Channel material (n_b)	Earth	0.020	Clay-based channels.
	Bed rock	0.025	Channels cut into bed rock.
	Sand–fine gravel	0.024*	Sandy creeks.
	Coarse gravel	0.026	Gravel-based creeks (otherwise use Eqn C.1).
Degree of irregularity (n_1)	Smooth	0.0	Smooth channel.
	Minor	0.001–0.005	Excavated channels in good condition.
	Moderate	0.006–0.010	Channels with considerable bed roughness and so erosion.
	Severe	0.011–0.020*	Natural' channels: pools and riffles, exposed tree r boulders, and/or irregular banks.
Variation in channel cross section (n_2)	Uniform	0.0	Near-uniform channel section.
	Gradual	0.001–0.005*	Large and small cross sections alternate occasiona (eg. typical NCD n_2 = 0.003).
	Severe	0.010–0.015	Large and small cross sections alternate frequently significant pool-riffle system).
Effect of obstructions (n_3) excluding vegetation	Negligible	0.0–0.004	A few scattered obstructions (boulders, trees, logs that occupy less than 5% of the channel.
	Minor	0.005–0.015*	Obstructions occupy 5–15% of the channel and th obstructions are generally isolated.
	Appreciable	0.020–0.030	Obstructions occupy 15–50% of the channel.
	Severe	0.040–0.050	Obstructions occupy more than 50% of the channe severe debris collection).
Amount of vegetation (n_4) Consideration should be given to the obstruction caused by vegetation relative to channel width and depth	Small	0.002–0.010	Grasses and/or weeds with the flow at least three times the height of the vegetation.
	Medium	0.010–0.025*	Grass and/or weeds with the flow one to two time height of the vegetation; or reeds or tree seedling growing with the flow two to three time the vegeta height; or minor bed vegetation with medium ban vegetation.
	Large	0.025–0.050	Grasses and/or weeds with flow depth equal to ve height; or weedy beds with thick bank vegetation; moderate shrub growth across the bed and banks.
	Very Large	0.050–0.100	Grass and/or weeds more than twice the height of depth; or dense, strong reed growth; or significant growth within the channel; or significant inflexible within channel.
Degree of channel meandering (m)	Minor	1.00	Channel sinuosity is 1.0 to 1.2
	Appreciable	1.15*	Channel sinuosity is 1.2 to 1.5
	Severe	1.30	Channel sinuosity is greater than 1.5 or; m = 0.57 + 0.43 (Sinuosity), but ⩾ 1.30

(*) Typical NCD channel roughness n = (0.024 + 0.003 + 0.012 + 0.005 + 0.015) 1.15 = 0.068

Table C.3 Manning's n for a watercourse floodplain

Minimum	Normal	Maximum	Description
A. Pasture, no brush			
0.025	0.030	0.030	Short grass – use design charts for grass
0.035	0.035	0.050	High grass – use design charts for grass
B. Cultivated areas			
0.020	0.030	0.030	No crop
0.040	0.040	0.050	Mature crop
C. Brush			
0.035	0.040	0.070	Scattered brush, heavy weeds
0.050	0.060	0.100	Light brush and trees
0.070	0.080	0.160	Medium to dense brush
D. Trees (also refer to Table C.5)			
0.080	0.100	0.110	Heavy stand of timber, a few fallen trees, little undergro tree branches above flood level.
0.100	0.120	0.150	As above, but with tree branches below flood level.
0.120	0.160	0.200	Dense tree cover

Table C.4 Modified Cowan method for floodplain roughness

Manning's n = $(n_b + n_1 + n_2 + n_3 + n_4)$ m

Floodplain condition		n and m values	Description
Floodplain material (n_b)	Earth	0.020*	Clay-based soil.
	Bed rock	0.025	Smooth, flat rock floodplains.
	Sand	0.024	Sandy soils.
	Gravel	0.026	Gravel-based soils (otherwise use Eqn C.1)
Degree of irregularity (n_1)	Smooth	0.0	Smooth, flat, floodplains.
	Minor	0.001–0.005	Slightly irregular shape. A few rises and dips.
	Moderate	0.006–0.010*	Regular rises and dips.
	Severe	0.011–0.020	Very irregular floodplains. Pasture furrows perpendi flow.
Variation in floodplain cross section (n_2)		0	Not applicable.
Effect of obstructions (n_3) excluding vegetation	Negligible	0.0–0.004	A few scattered obstructions (debris, stumps, logs, b occupying less than 5% of the floodplain flow area.
	Minor	0.005–0.015*	Obstructions occupy 5–15% of the flow area.
	Appreciable	0.020–0.030	Obstructions occupy 15–50% of the flow area.
Amount of vegetation (n_4) Consideration should be given to the obstruction caused by vegetation relative to the depth of flow.	Small	0.002–0.010	Grasses and/or weeds with the flow at least twice the height of the vegetation.
	Medium	0.010–0.025	Grass and/or weeds with the flow one to two times height of the vegetation; or tree seedlings growing with the flow two to three time the vegetation heigh
	Large	0.025–0.050	Grasses and/or weeds with flow depth equal to veg height, or irregular shrub growth across the floodpla
	Very large	0.050–0.100*	Grass and/or weeds more than twice the height of flow depth; or significant shrub growth, woody wee or other inflexible vegetation growing across the flo
	Extreme	0.100–0.200	Dense bushy shrub growth, or heavy stands of trees understorey vegetation and a few fallen trees, or a h of trees with branches below flood level.
Floodplain meander (m)		1	Not applicable.

(*) Example calculation: n = (0.020 + 0.008 + 0.0 + 0.012 + 0.090) 1.0 = 0.130

Table C.5 Floodplain revegetation density guidelines for various Manning's n roughness values

Manning's n	Description
0.03	Short grass with the water depth >> grass height.
0.04	Short grass with water depth >> grass height on a slightly irregular earth surface. Trees a spacing, area is easy to mow.
0.05	Long grass on an irregular (bumpy) surface with few trees. Irregular ground could make g cutting difficult. Alternatively, trees at 8 metre spacing on an even, well-grassed surface, no shrubs, no lo branches.
0.06	Long grass, trees at 6 metre spacing, few shrubs. The vegetation is easy to walk through mowed, but regular maintenance is required to remove weeds and debris.
0.07	Trees at 5 metre spacing, no low branches, few shrubs, walking may be difficult in some
0.08	Trees at 4 metre spacing, some low branches, few shrubs, few restrictions to walking.
0.09	Trees at 3 metre spacing, weeds and long grasses may exist in some locations. Walking difficult due to fallen branches and woody debris.
0.10	Trees at 2 metre spacing, low branches, regular shrubs, no vines. Canopy cover possibly weeds and it is difficult to walk through.
0.12	Trees at 1.5 metre spacing with some low branches, a few shrubs. Slow to walk through.
0.15	Trees and shrubs at 1 metre spacing, some vines, low branches, fallen trees, difficult and walk through. Alternatively, a continuous coverage of woody weeds with sparse leaves and no vines.
0.20	Trees and shrubs at 1 metre spacing plus thick vine cover at flood level and fallen trees. difficult to walk through. Alternatively, a continuous coverage of healthy shrubs and woody weeds from ground le above flood level.

Photo C1

Straight, excavated, tidal channel.

Bed: n = 0.02

Banks: n = 0.06

Bankfull: n = 0.024

Photo C2

Slight meandering, regular cross section, well maintained grass channel.

Bankfull: n = 0.028

Photo C3

Mown grass channel, regular cross section, slight meander.

Bankfull: n = 0.028 (clean)

n = 0.030 (some shrubs)

Photo C4

Regular cross section, slight meandering, mown overbanks.

Bankfull: n = 0.04

Overbank grass: n = 0.03 (shallow flow depth assumed)

Photo C5

Mown grass banks, unmaintained wetland plants on bed, regular cross section, very slight meander.

Bed: Manning's n is variable depending on flow depth.

Bankfull components:
bed n = 0.035
bank n = 0.030
resulting in a bankfull n =0.035

Photo C6

Canopy trees in early stages of growth, straight, regular channel.

Bankfull: n = 0.04
Overbank: n = 0.15

Photo C7

Rock size approx. 300 mm, this results in a Manning's n = 0.034 assuming deep water flow.

Bed: n =0.04

Photo C8

Deep channel, irregular cross section, meandering channel.

Bankfull: n = 0.045

Photo C9

Near straight channel, full canopy cover with few weeds, pool-riffle system, shallow pools with boulders.

Bed: n = 0.045
Bank: n = 0.09

Photo C10

Pool-riffle bed system, meandering channel, thick shrub growth on banks, deep pools.

Bed: n = 0.04
Left bank: n = 0.06
Right bank: n = 0.20
Bankfull: n = 0.06

Photo C11

Channel vegetation in early growth stage, gradual bends, regular cross section, deep water, pool-riffle system.

Bankfull (existing): n = 0.04
Long-term (full vegetation)
bed: n = 0.05
banks: n = 0.15

Photo C12

Irregular, meandering, constructed channel with boulders.

Bankfull: n = 0.05
Bank vegetation: n = 0.15

Photo C13

Irregular channel with meanders and woody debris (logs).

Bankfull: n = 0.05
Overbank: n = 0.10

Photo C14

Bed is a combination of thick, flexible vegetation and open rock pools and riffles. banks have sparse trees and woody shrubs. Irregular channel shape with slight meandering.

Bed: n = 0.06
Bank: n = 0.12
Bankfull: n = 0.07

Photo C15

Weedy channel passing through a long grass floodplain. Irregular channel cross section with some meanders.

Bankfull: n = 0.08 (assuming low velocity and shallow depth that will not flatten reeds)

Overbank: n = 0.03 to 0.10
(depends on flow depth and velocity)

Photo C16

Irregular mountain creek with flexible understorey plants, few vines or woody shrubs.

Bankfull: n = 0.10 to 0.12

Photo C17

Overbank vegetation at approximately 8 metre spacing with no shrubs.

Overbank: n = 0.05

Photo C18

Overbank vegetation consists of tall truck trees, no low branches or shrubs. Tree spacing of approx. 8 metres.

Overbank: n = 0.05

Photo C19

Irregular channel with meanders.

Channel: n = 0.04 to 0.05 depending on channel irregularity and debris content.

Overbank area consists of single truck trees with no low branches or shrubs.

LHS (5 m spacing): n = 0.055

RHS (6-7 m spacing): n = 0.05

Photo C20

Trees at approx. 5 metre spacing, no low branches.

Overbank: n = 0.055

Photo C21

Irregular natural channel and wetland system with many weeds.

Overbank: n = 0.06

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Riverstone Pde P/L atf 81 Riverstone Parade Unit Trust
c/o Sakkara
Level 42 Governor Phillip Tower
1 Farrer Place
SYDNEY NSW 2000

14 April 2025

Attention: Mr Callum Gracie

Dear Callum,

RIVERSTONE WEST PRECINCT (RICHARDS) SITE WIDE CIVIL WORKS (DA-23-00740) COMPILED LIST OF COMPLETED FLOOD STUDIES AND FLOOD RELATED INVESTIGATIONS

I refer to our recent e-mail correspondence in which you requested a list and brief description of the role of all flood studies conducted for the Riverstone West Precinct (Richards) site that are relevant to the site wide civil works development application 23-00740 (the DA). This request was made by Blacktown City Council during the meeting held at Council's offices on 25 March 2025.

Below is the requested information compiled in chronological order and grouped into the following categories.

- Flood related studies relevant to the rezoning of the Riverstone West Precinct
- Flood related studies relevant to the Land and Environment (L&E) Court Proceedings in 2014
- Flood related studies relevant to the site wide civil works development application
- Flood related studies relevant to the site and wider Eastern Creek and Hawkesbury-Nepean River Floodplain

Flood Related Studies Relevant to the Rezoning of the Riverstone West Precinct

D1. Northwest Transport Hub (2008), '*Proposed Redevelopment of Riverstone West Precinct – Flood Impact Assessment*', prepared by WorleyParsons.

Role: Flood Impact Assessment (FIA) report submitted to consent authorities in support of the proposed rezoning of Lot 211 and the future development of the site.

Modelling undertaken for the study focused on a range of Eastern Creek and Hawkesbury-Nepean River flood scenarios occurring in isolation and concurrently.

D2. Northwest Transport Hub (2008), '*Riverstone West Precinct –Stormwater Management Strategy Incorporating Water Sensitive Urban Design*', prepared by J Wyndham Prince Pty Ltd.

Role: Investigation aimed at identifying opportunities and constraints for the management of stormwater that is conveyed through the Riverstone West Precinct.

D3. Letter Report to Growth Centres Commission (2008), '*Peer Review of Riverstone West Precinct Flood Impact Assessment*', prepared by Cardno.

Role: Peer review of the 2008 FIA report prepared by WorleyParsons.

D4. Northwest Transport Hub (2009), '*Proposed Redevelopment of Riverstone West Precinct – Results of Flood Modelling for Indicative Layout Plan*', prepared by WorleyParsons.

Role: Flood Impact Assessment (FIA) prepared and included within the Post Exhibition Planning Report. This report documents the results of flood modelling that was undertaken to assess the final development footprint adopted for the rezoning application.

Modelling undertaken for the study focused on a range of Eastern Creek and Hawkesbury-Nepean River flood scenarios occurring in isolation and concurrently.

Flood Related Studies Relevant to the Land and Environment (L&E) Court Proceedings

B1. Sakkara Property Ventures (2013), '*Riverstone West Precinct – Flood Impact Assessment*', prepared by WorleyParsons.

Role: Flood Impact Assessment (FIA) prepared for a proposed development layout for the Riverstone West Precinct. The FIA report includes modelling for the combination of Eastern Creek and Hawkesbury-Nepean River flood events as required by the Riverstone West Precinct DCP 2009.

B2. Letter Report to Highgate Management Pty Ltd (2013), '*Peer Review of Riverstone West Flood Impact Assessment, Issue 3*', prepared by Cardno.

Role: Peer review of the 2013 FIA report prepared by WorleyParsons.

B3. Riverstone West Parade Pty Ltd (2014), '*Riverstone West Precinct – Floodplain Management Strategy*', prepared by WorleyParsons.

Role: Floodplain Management Strategy (FMS) prepared for the Riverstone West Precinct in accordance with the 2009 DCP and the State Environmental Planning Policy (Sydney Region Growth Centres – Riverstone West Precinct) 2009 (the 2009 SEPP). The FMS was prepared to inform the Precinct Planning process and provide guidelines for future development of the Riverstone West Precinct.

The FMS report includes investigation of flood behaviour for a range of Eastern Creek and Hawkesbury-Nepean River flood events, occurring in isolation and concurrently, for existing and proposed post-development conditions, cumulative impact assessment, and a flood emergency response plan.

B4. Letter Report to Highgate Management Pty Ltd (2014), '*Peer Review of Riverstone West Floodplain Management Strategy Report*', prepared by Cardno.

Role: Peer review of the 2014 FMS report prepared by WorleyParsons.

Flood Related Studies Relevant to the Site Wide Civil Works Development Application

C1. Department of Planning and Environment (2022), '*Riverstone West Precinct Flooding Assessment*', prepared by Cardno.

Role: In 2022 Sakkara engaged in a consultation process with the NSW Department of Planning and Environment (DPE) and Blacktown City Council seeking amendments to the 2009 SEPP. This process included the engagement of an independent consulting engineering firm to undertake flood modelling of the proposed development to assess the magnitude and extent of any potential impacts that the civil works design for the site could have on the flood characteristics of Eastern Creek. The independent investigations and modelling were undertaken by Cardno.

Modelling undertaken for the study focused on a range of Eastern Creek and Hawkesbury-Nepean River flood scenarios occurring in isolation and concurrently.

C2. Sakkara Pty Ltd (2023), '*Riverstone West Precinct Sitewide Civil Works – Flood Impact and Risk Assessment*', prepared by Advisian (Worley Group).

Role: Advisian was engaged by Sakkara to use the flood model developed by Cardno to refine the design of the fill footprint determined by Cardno and documented in its 2022 Flood Assessment Report. The objective of the modelling was to modify the bulk earthworks design to reduce the minor impacts determined by Cardno.

The 2023 FIRA Report served as the flood impact assessment for the sitewide civil works DA that was submitted to Blacktown Council in May 2023.

Modelling undertaken for the 2023 FIRA focused on a range of Eastern Creek and Hawkesbury-Nepean River flood scenarios occurring in isolation and concurrently.

C3. Sakkara Pty Ltd (2024), '*Riverstone West Bulk Earthworks Eastern Creek Tributary Overland Flow Assessment*', prepared by J Wyndham Prince.

Role: The purpose of the J Wyndham Prince 'Overland Flow Assessment' was to design cross-drainage infrastructure through the site to resolve any potential local catchment flood impacts along the eastern side or Riverstone Town Centre side of the proposed earthworks.

Modelling undertaken for this study focused on the local catchments to the east of the Riverstone West Precinct, which discharge through the site to Eastern Creek. The modelling considered a range of local overland flow flooding scenarios occurring in isolation, and concurrently with flooding of Eastern Creek and the Hawkesbury-Nepean River.

C4. Department of Planning and Environment (2025), '*Independent Review of Flood-Related Aspects of DA-23-00740*', prepared by Rhelm.

Role: Independent review by Rhelm Pty Ltd (Rhelm) requested by the Sydney Central City Planning Panel following a decision to defer determination of DA 23-00740 on the 2 December 2024. The Rhelm Peer Review covers the surface water related aspects of the site wide civil works DA.

C5. Letter Report to Riverstone Parade P/L atf 81 Riverstone Parade Unit Trust (2025), '*Riverstone West Parade (Richards) Site Wide Civil Works (DA-23-000740) – Responses to Rhelm Independent Review Report*', prepared by Worley Consulting Pty Ltd.

Role: Letter report prepared by Worley Consulting in response to the 2025 Rhelm Peer Review.

Flood Related Studies Relevant to the site and wider Eastern Creek and Hawkesbury-Nepean River Floodplain

D1. Blacktown City Council (2014), '*Eastern Creek Hydraulic Assessment*', prepared by Catchment Simulation Solutions.

Role: Flood Study for Eastern Creek and its tributaries Hawkesbury-Nepean River prepared by Catchment Simulation Solutions for Blacktown City Council. The study was based on hydrologic and hydraulic modelling using the XP-RAFTS and TUFLOW software packages, respectively. Modelling was undertaken for a range of Eastern Creek flood events in isolation and occurring concurrently with flooding along the Hawkesbury-Nepean River.

D2. Infrastructure NSW (2019), '*Hawkesbury-Nepean Valley Regional Flood Study – Volume 1: Main Report*', prepared by WMAwater.

Role: Flood Study for the Hawkesbury-Nepean River that was superseded in 2024 by the Hawkesbury-Nepean River Flood Study that was prepared by Rhelm and Catchment Simulation Solutions.

D3. NSW Reconstruction Authority (2024), '*Hawkesbury-Nepean River Flood Study*', prepared by Rhelm Pty Ltd and Catchment Simulation Solutions.

Role: Latest flood study that defines flood characteristics in the lower Hawkesbury-Nepean River between Wallacia and the ocean. The study defines flood characteristics for floodplain between North Richmond and Sackville Gorge which are of particular relevance to the Richards Site, albeit that it has not been subject to the same degree of community consultation that is the case for flood and flood risk management studies that are published under the NSW Floodplain Management Program.

I trust that this letter suitably addresses the request for the compilation of a list of prior flood studies that have been completed for the Riverstone West Precinct (Richards) site. Please contact me on 0407 063711 should you require anything further.

Yours faithfully
WORLEY CONSULTING

Chris Thomas
Senior Principal Hydrologist
NSW Practice Lead - Water Resources

COUNCIL ASSESSMENT REPORT

Panel Reference	PPSSCC-483
DA Number	DA-23-00740
LGA	Blacktown
Proposed Development	Integrated Development for site wide bulk earth works in 5 stages including importation of approximately 3.9 million cubic metres of fill material via approximately 340,000 truck movements, removal of existing vegetation, demolition of existing industrial structures, construction of 2 temporary haulage roads (one off Bandon Road and one off Garfield Road West) and the construction of drainage swales and sediment detention basins
Street Address	36 Garfield Road West, Richards
Applicant/Owner	Riverstone Parade Pty Ltd
Date of DA lodgement	10 July 2023
Number of Submissions	227 individual submissions including 12 in support, 7 confidential and 1 from Hawkesbury City Council
Recommendation	Approve, subject to conditions listed in attachment 10.
Regional Development Criteria - Schedule 6 of SEPP (Planning Systems) 2021	General development over $30 million. The Capital Investment Value is $83 million
List of all relevant s4.15(1)(a) matters	• State Environmental Planning Policy (Biodiversity and Conservation) 2021 • State Environmental Planning Policy (Planning Systems) 2021 • State Environmental Planning Policy (Precincts – Central River City) 2021 • State Environmental Planning Policy (Resilience and Hazards) 2021 • State Environmental Planning Policy (Transport and Infrastructure) 2021 • Blacktown Local Environmental Plan 2015
List all documents submitted with this report for the Panel's consideration	• Location map • Aerial image • Zoning extract • Detailed information about proposal and submissions • Development Plans • Assessment against planning controls post 1 March 2022 • Summary of residents' concerns and Council's response • Comments received from Department of Planning, Housing and Infrastructure • Cardno Flood Study, Feb 2022 • Draft Conditions
Clause 4.6 requests	• Not applicable
Summary of key submissions	• traffic impacts • quality of fill to be imported • lack of existing infrastructure to sustain the development • construction impacts including duration, dust and noise • local heritage impacts • impacts on local amenity and character • impacts of future development • approval of the proposal establishing a precedent for future applications • this development proceeding despite the cancellation of planning proposals for neighbouring Riverstone Town Centre, Schofields West and Marsden Park North
Report prepared by	Jared Spies
Report date	28 November 2024

Summary of s4.15 matters

Have all recommendations in relation to relevant s4.15 matters been summarised in the Executive Summary of the assessment report? **Yes**

Legislative clauses requiring consent authority satisfaction Have relevant clauses in all applicable environmental planning instruments where the consent authority must be satisfied about a particular matter been listed, and relevant recommendations summarized, in the Executive Summary of the assessment report? *e.g. Clause 7 of SEPP 55 - Remediation of Land, Clause 4.6(4) of the relevant LEP*	**Yes**
Clause 4.6 Exceptions to development standards If a written request for a contravention to a development standard (clause 4.6 of the LEP) has been received, has it been attached to the assessment report?	**Not Applicable**
Special Infrastructure Contributions Does the DA require Special Infrastructure Contributions conditions (S7.24)? *Note: Certain DAs in the Western Sydney Growth Areas Special Contributions Area may require specific Special Infrastructure Contributions (SIC) conditions*	**Yes**
Conditions Have draft conditions been provided to the applicant for comment? *Note: in order to reduce delays in determinations, the Panel prefer that draft conditions, notwithstanding Council's recommendation, be provided to the applicant to enable any comments to be considered as part of the assessment report*	**Yes**

1.1 DA-23-00740 - 36 Garfield Road West, Richards

Assessment report to

Sydney Central City Planning Panel

Panel reference: PPSSCC-483

Development application

DA number	DA-23-00740	**Date of lodgement**	10 July 2023
Applicant	Riverstone Parade Pty Ltd		
Owner	Riverstone Parade Pty Ltd		
Proposed development	Integrated Development for site wide bulk earth works in 5 stages including importation of approximately 3.9 million cubic metres of fill material via approximately 340,000 truck movements, removal of existing vegetation, demolition of existing industrial structures, construction of 2 temporary haulage roads (one off Bandon Road and one off Garfield Road West) and the construction of drainage swales and sediment detention basins		
Street address	36 Garfield Road West, Richards		
Notification period	8 November to 6 December 2023	**Number of submissions**	227 individual submissions including 12 in support, 7 confidential and 1 from Hawkesbury City Council

Assessment

Panel criteria Schedule 6 of the State Environmental Planning Policy (Planning Systems) 2021	• General development over $30 million. The Capital Investment Value is $83 million
Relevant section 4.15(1)(a) matters	• Environmental Planning and Assessment Act 1979 • State Environmental Planning Policy (Biodiversity and Conservation) 2021 • State Environmental Planning Policy (Planning Systems) 2021 • State Environmental Planning Policy (Precincts - Central River City) 2021 • State Environmental Planning Policy (Resilience and Hazards) 2021 • State Environmental Planning Policy (Transport and Infrastructure) 2021 • Riverstone West Precinct Development Control Plan 2009 • Central City District Plan 2018 • Blacktown Local Strategic Planning Statement 2020 • Blacktown Local Environmental Plan 2015
Report prepared by	Jared Spies
Report date	28 November 2024
Recommendation	Approve, subject to conditions listed in attachment 10.

Checklist

Summary of section 4.15 matters Have all recommendations in relation to relevant section 4.15 matters been summarised in the Executive summary of the Assessment report?	Yes
Legislative clauses requiring consent authority satisfaction Have relevant clauses in all applicable environmental planning instruments, where the consent authority must be satisfied about a particular matter, been listed and relevant recommendations summarised in the Executive Summary of the Assessment report?	Yes
Clause 4.6 Exceptions to development standards If a written request for a contravention to a development standard (clause 4.6 of the LEP) has been received, has it been attached to the Assessment report?	Not applicable
Special Infrastructure Contributions Does the DA require Special Infrastructure Contributions conditions (section 7.24)?	Yes
Housing Productivity Contribution (for DA lodged on or after 1 October 2023) Does the DA require Housing Productivity Contribution Condition?	Not applicable
Conditions Have draft conditions been provided to the applicant for comment?	Yes
Biodiversity Is the land bio-certified land under the Biodiversity Conservation Act 2016?	Yes

Attachments

1. Attachment 1 Location map [**1.1.1** - 1 page]
2. Attachment 2 Aerial image [**1.1.2** - 1 page]
3. Attachment 3 Zoning extract [**1.1.3** - 1 page]
4. Attachment 4 Detailed information about proposal and submissions [**1.1.4** - 9 pages]
5. Attachment 5 Development Plans [**1.1.5** - 4 pages]
6. Attachment 6 Assessment against planning controls [**1.1.6** - 49 pages]
7. Attachment 7 Summary of residents concerns and Councils response [**1.1.7** - 45 pages]
8. Attachment 8 Comments received from Department of Planning, Housing and Infrastructure [**1.1.8** - 3 pages]
9. Attachment 9 Cardno Flood Study, Feb 2022 [**1.1.9** - 120 pages]
10. Attachment 10 Draft Conditions [**1.1.10** - 33 pages]

1 Executive summary

1.1 The key issues that need to be considered by the Panel in respect of this application are:

- Comments received from Department of Planning, Housing and Infrastructure on this proposed development shown at
- Traffic impacts associated with truck movements
- Importation of 3.9 million cubic metres of fill to the site
- Objections raised by the public in relation to flooding and other matters
- Our recommendation is on the basis of deferred commencement consent

1.2 Assessment of the application against the relevant planning framework and consideration of matters by our technical departments have not identified any issues of concern that cannot be dealt with by deferred commencement conditions of consent.

1.3 The application is therefore satisfactory when evaluated against Section 4.15 of the Environmental Planning and Assessment Act 1979.

1.4 This report recommends that the Panel approve the application subject to the recommended deferred commencement conditions listed in attachment 10.

2 Location

2.1 The site is located at 36 Garfield Road West in the suburb of Richards. It is within the Riverstone West Precinct.

2.2 The site is bounded by:

- Bandon Road and the suburb of Vineyard to the north
- the Richmond branch of the T1 railway line which runs parallel to Riverstone Parade to the east,
- Garfield Road West to the south
- Eastern Creek to the west.

2.3 Riverstone and Vineyard Railway Stations provide key public transport entrances to the Riverstone West Precinct. Garfield Road West connects with Richmond Road to the west and Garfield Road East connects to Windsor Road and Terry Road to the east. Bandon Road connects with Windsor Road and Chapman Road to the east.

2.4 To the north of the Riverstone West Precinct is the suburb of Vineyard which is situated in Hawkesbury City Council's Local Government Area. The TransGrid site (Lot 210 in DP 830505) and Sydney Water site (Lot 1 in DP 598194 and Lot 1 in DP 594977) are both located in the northern part of the Riverstone West Precinct off Bandon Road.

2.5 There are various mixed uses to the east of the site on the other side of Riverstone Parade. These include industrial, commercial and residential uses. It also includes relatively vacant residential land located opposite the northern end of the Precinct to the east which known as the 'Scheduled lands'.

2.6 To the South of Garfield Road West is the Schofields West Precinct which has a mix of recreational, commercial and residential uses.

2.7 The main channel of Eastern Creek which forms the western boundary of the site is the Marsden Park North Precinct is made up of open grazing and partly built-up residential areas. Beyond Eastern Creek, further 'Scheduled lands' are located.

2.8 The location of the site is shown at attachment 1.

3 Site description

3.1 The site is legally described as Lot 211 DP 830505 and has a registered area of 227.9 hectares.

3.2 An aerial image of the site and surrounding area is at attachment 2.

3.3 The site has a number of zonings and is partly zoned:

- B7 - Business Park
- E2 - Environmental Conservation
- IN1 - General Industrial
- IN2 - Light Industrial
- RE2 - Private Recreation.

3.4 The zoning plan for the site and surrounds is at attachment 3.

3.5 The topography of the site consists of:

- moderate to low gradient rolling landforms in broad valley slopes
- low and broad ridge and spur-line crests
- alluvial flats that extend from the principal river catchments (Hawkesbury/Nepean River systems) and their associated major tributaries (including Eastern and South Creeks).

3.6 The land levels vary across the site from approximately 40 m Australian Height Datum in the north-eastern part of the site to approximately 6 m Australian Height Datum down near Eastern Creek.

3.7 Due to the position of the Riverstone West Precinct within the Eastern Creek and Hawkesbury River floodplains there is potential for flooding of the site to occur as a function of three scenarios:

- Backwater flooding from the Hawkesbury River system due to runoff from elsewhere in the Hawkesbury Nepean catchment
- Flooding of Eastern Creek as a consequence of runoff due to rainfall over the Eastern Creek catchment, a smaller sub catchment of the greater Hawkesbury Nepean catchment
- Flooding associated with a combined Eastern Creek and Hawkesbury River event

3.8 The site is almost entirely cleared of its original vegetation and the majority of the site is largely covered by pasture grasses that are interspersed by a small number of isolated trees. The fields are currently used for agistment of animals, such as horses and cattle. The north eastern portion of the site has a level pad that is approved for use for temporary storage purposes for a range of transport and construction related materials and shipping containers. The Hawkesbury Model Air Sports Inc. also has a model aircraft club in the north-western part of the site.

3.9 The site also has a number of existing built elements, predominantly located in the southern and eastern half of the site. These include buildings associated with the former Riverstone Meatworks. Earthworks have also been approved south of the meatworks precinct for the purposes of temporary storage of plant and equipment.

3.10 The Riverstone West Precinct contains 17 cottages along Richards Avenue and 4 cottages along Garfield Road. Twelve of the Richards Avenue cottages are listed as heritage items in Schedule 5 of the Blacktown Local Environmental Plan 2015.

3.11 Several electricity transmission lines exist across the site as well as sub-surface power lines. There are also several formal and informal access roads across the site.

3.12 Access to the site is limited with locked gates around the perimeter of the Site. The main access to the site is off Riverstone Parade. Access to the Richards Avenue cottages is from Richards Avenue, off Garfield Road West. This is an unsealed road and has been gated off and secured.

3.13 The land is affected by a number of easements relating to:

- easement for vehicle access and services
- easement for electricity purposes
- various easements for transmission lines
- pipeline easements
- right of carriageway
- and road widening along Garfield Road West.

4 Background

4.1 Planning Controls

4.1.1 On 5 January 2007, the Minister for Planning declared a total of 9 precincts across the North West and South West growth centres of Sydney to be released for urban development. The Riverstone West Precinct was included among the first to be released in the North West Growth Centre. The Department of Planning (now the Department of Planning, Housing and Infrastructure) initiated precinct planning for Riverstone West in January 2008 to plan the zoning and development controls for the Precinct. This included drafting the Indicative Layout Plan that sets out items such as the proposed road patterns, land uses and open space environmental corridors. The Indicative Layout Plan formed the basis upon which all other precinct planning documents were based.

4.1.2 Following from the Indicative Layout Plan, a State lead draft amendment to the State Environmental Planning Policy (Sydney Region Growth Centres) 2006 was prepared to provide statutory control provisions for the Precinct. The draft amendment included specific clauses, land use tables, zones, written instruments and maps that demonstrated how the provisions apply to the Precinct.

4.1.3 The precinct planning documents included a draft Development Control Plan prepared by the Department. The draft Riverstone West Development Control Plan provided more detailed planning and design guidelines for development within the precinct.

4.1.4 The NSW Government published the gazettal of the Precinct Plan and State Environmental Planning Policy (Sydney Region Growth Centres) 2006 on 7 August 2009. The Riverstone West Development Control Plan was then approved by the Director General of the Department of Planning and came into effect on 19 August 2009 after being reviewed by the Department of Planning and Independent Planning Assessment Commission.

4.1.5 More recently, the Department of Planning, Housing and Infrastructure (the Department) publicly exhibited an Explanation of Intended Effect (EIE) with supporting technical reports from 26 August to 26 September 2022 to facilitate amendments to Clause 3.27 of the State Environmental Planning Policy (Precincts - Central River City) 2021 (SEPP). The applicant initiated the process to make amendments to the SEPP. Council submitted its response to the Department on 23 September 2022 which in summary raised the following concerns:

- the principle of allowing for a flood modelling tolerance level, which was not there before

- the proposed revision of Clause 3.27 of the SEPP not being consistent with the principles of the State Flood Prone Land Policy as it now provides different flood planning controls to this Precinct than those that apply anywhere else across the State
- the revised Clause 3.27 is no longer guaranteeing a 'no net loss' of floodplain storage
- the need for clarity in relation to how the cumulative impacts of development in the floodplain in Riverstone West are to be assessed
- the inconsistencies between the Standard Instrument Clause 5.21 relating to flood planning controls across the North West Growth Area including Riverstone West and the proposed flood planning criteria proposed for the precinct
- the adequacy of the supporting technical reports
- the need for an extensive review of the DCP if the SEPP amendment was to proceed.

4.1.6 Despite the issues raised by Council, the Department gazetted amendments to State Environmental Planning Policy (Precincts - Central River City) 2021 on 16 December 2022. The amendments primarily consist of:

- amendments to the flood related development controls in Section 3.27
- minor administrative map amendments were also gazetted to the Land Zoning, Lot Size, Height of Buildings, Floor Space Ratio, Development Control and Native Vegetation Protection maps of State Environmental Planning Policy (Precincts - Central River City) 2021 in relation to the Riverstone West Precinct.

The primary intended outcome of the gazetted amendments was to facilitate the realisation of the business park and industrial development that was envisaged when the Riverstone West Precinct was zoned in 2009.

4.1.7 Council raised its concerns regarding inconsistencies between State Environmental Planning Policy (Precincts - Central River City) 2021 and the Riverstone West Precinct Development Control Plan 2009 with the Department of Planning, Housing and Infrastructure (the Department). After meetings with the Department, we received their written comments regarding this proposal on 27 August 2024 (see attachment 8).

4.2 Development approvals

4.2.1 Parts of the Riverstone West Precinct have historically been and continue to be used for a number of uses ranging from warehousing, transport distribution and agricultural uses. More recently, DAs have been approved for preparatory earthworks, subdivision, and a range of associated temporary uses. Below is a list of the recent applications:

- DA-15-1001: Approved on 23 December 2015 for bulk earthworks and ground contouring in the north eastern corner of the site and associated works including importation of virgin excavated natural material, construction of 2 sediment control basins and tree removal.
- DA-16-03042: Approved on 22 November 2016 for bulk earthworks
- DA-16-03198: Approved on 22 November 2016 for 2 lot subdivision
- DA-16-04790: Refused on 19 June 2018
- DA-16-05166: Withdrawn on 11 March 2021
- DA-17-02014: Withdrawn on 29 June 2021
- DA-17-02052: Refused on 25 June 2021

- DA-17-02053: Withdrawn on 10 March 2021
- DA-17-02373: Refused on 25 June 2021
- DA-17-02385: Refused on 25 June 2021
- DA-17-02520: Refused on 25 June 2021
- DA-18-00197: Withdrawn on 28 June 2022
- DA-18-00198: Withdrawn on 28 June 2022
- DA-18-00404: Refused 27 July 2022
- DA-18-00497: Refused on 25 June 2021
- DA-18-00562: Refused on 25 June 2021
- DA-18-01160: Refused on 25 June 2021
- DA-18-01344: Refused on 25 June 2021
- DA-18-01683: Refused on 25 June 2021
- DA-18-01701: Withdrawn on 16 March 2021
- DA-19-00232: Approved on 3 January 2020 for establishing temporary use on Vineyard meatworks site for storage of building materials, placement of shipping containers, security fencing and portable toilet facilities
- DA-19-00628: Approved on 22 June 2022 for temporary use for purposes of a storage site and installation of a portable toilet block for a period of 2 years. Access is from Garfield Road West only.
- DA-19-00780: Approved on 24 February 2021 for temporary use as a storage yard for 19 tenancies, 1 light industrial use and 1 landscape and garden supply premises for a period of 2 years.
- MOD-20-00124: Approved on 1 September 2022 to update the Civil Works Plans approved under DA-15-1001 to reflect revised drainage plans and final bulk earth work levels
- DA-21-00697: Approved on 6 September 2021 for use of the site as an animal training establishment for a maximum of 12 dogs with no on-site boarding, breeding, keeping or caring facilities
- DA-22-01183: Approved on 12 December 2023 for staged bulk earthworks including vegetation removal, site remediation and civil works comprising the construction of a temporary haulage road and stormwater infrastructure on part of the land off Bandon Road. The area of the earthworks approved are similar to the earthworks in stage A of this proposal and will all be situated above the 1 in 100 year flood level.

4.3 Requests for further information that were sent to the applicant

4.3.1 Several requests for information were sent to the applicant to address the following matters:

- 12 July 2023 relating to heritage issues
- 28 September 2023 relating to planning, heritage, engineering, biodiversity, recreational planning and design, open space maintenance, traffic and environmental health issues. This letter also identified additional information requested by external authorities
- 8 March 2024 relating to biodiversity, open space maintenance and environmental health issues

- 14 April 2024 relating to engineering, heritage, biodiversity and environmental health issues
- 9 September 2024 relating to engineering, heritage, biodiversity and environmental health issues.

The information provided by the applicant on 31 October 2024 has enabled us to finalise our assessment and draft conditions accordingly in response to the Department's position.

5 The proposal

5.1 The development application has been lodged by Riverstone Parade Pty Ltd.

5.2 The applicant proposes site wide bulk earth works in 5 stages including importation of approximately 3.9 million cubic metres of fill material via approximately 340,000 truck movements, removal of existing vegetation, demolition of existing industrial structures, construction of 2 temporary haulage roads (one off Bandon Road and one off Garfield Road West) and the construction of drainage swales and sediment detention basins. Each component of the proposed development is described in more detail below:

5.2.1 Establishment of temporary construction facilities:

- temporary facilities for the site preparation activities will be constructed within the relevant stages of the proposed development. Temporary facilities will include a security fence around the construction zone, site office with associated car park and a fenced laydown area to store items in the open open air.

5.2.2 Sediment and erosion control:

- sediment and erosion control measures will be implemented such as:
  - sediment fencing downstream of disturbed areas
  - dust control measures
  - placement of hay bales or mesh and gravel inlet filters around and along proposed catch drains and around stormwater inlet pits
  - stabilised site access at the construction vehicle entry/exits to avoid sediment spreading onto the surrounding road network.
- Any stockpiled material, including topsoil, will be located as far away as possible from watercourses or temporary overland flow paths. Sediment fences will be installed to the downstream side of stockpiles and any embankment formation. All stockpiles and embankment formations will be stabilised by hydroseeding or hydro mulching on formation.

5.2.3 Vegetation Removal:

- existing vegetation will be removed in the area of the earthworks out of necessity, given the objective of the application is to facilitate the construction of benched platforms for future development. The vegetation to be removed includes the remnant trees, a variety of grasses, herbs and weeds.

5.2.4 Demolition:

- most of the non-heritage structures and slabs including ancillary elements, pavement and concrete, retaining walls and existing services are proposed for demolition in a staged manner as they fall within the relevant construction impact zone.

5.2.5 Earthworks:

- Major earthworks are proposed to be carried out to deliver benched platforms for future industrial and commercial uses through the cutting, stockpiling,

repositioning and importation of fill material on-site. Bulk earthworks will involve cut of approximately 1.1 million m³ and approximately 5 million m³ of fill. The 3.9 million m³ balance of fill material will be imported to the site.

5.2.6 Construction traffic management:

- The fill will be delivered initially with ingress through the existing access connection to Garfield Road West and ingress/egress through the existing connection to Bandon Road. Council awaits updated advice from Transport for NSW regarding their acceptance of the proposed access connection off Garfield Road West. This access point will, however, likely remain at the existing access point provided the applicant adheres to the design requirements of Transport for NSW. This was confirmed at a meeting with Transport for NSW on 28 October 2024.
- The existing access to Garfield Road West will only provide for left turn ingress (i.e. from the west) with ingress/egress along Bandon Road from/to Windsor Road. Trucks will not be permitted to travel along Riverstone Parade.
- According to the traffic report submitted with the application, the number of trucks that will import fill to the site in stages A to C will be approximately 80,000 trucks and in stages D to E will be 90,000 trucks. This is a total of approximately 170,000 trucks into the site or a total of approximately 340,000 truck movements into and out of the site once all stages of the development have been completed.

5.2.7 Installation of drainage works:

- There are a number of upstream catchments external to the site. Stormwater runoff from these external catchments currently cross the site through a number of culverts and open channels. Some of these culverts and channels will be retained as part of the development. However, some of the overland flow paths will need to be redirected through the development by new easements and culverts. The discharge points for receiving waters will generally be in the same locations as they are now.
- Stormwater management will involve a series of temporary grass lined catch drains to convey runoff from the development to a series of sediment retention basins to manage flow quality prior to discharge to the receiving waters. It is proposed that 17 sediment basins with capacities of between 559 m³ and 2,793 m³ will be established on the periphery of the site to manage water quality.
- The catch drains and sediment basins will be constructed prior to any other earthworks to ensure an appropriate level of stormwater runoff treatment is in place before discharge from the site occurs.

5.2.8 Hours of operation:

- The proposed hours of construction will be between 7 am and 6 pm, Monday to Friday and 8 am to 1 pm on Saturdays only.
- If required, other one-off activities are proposed to be undertaken outside of these hours including:
  - works on existing services (if shutdowns are required)
  - deliveries of oversized loads
  - responsive activities to protect people, property and the environment in the event of an emergency such as a flood
  - other activities undertaken in accordance with relevant noise guidelines or which have no material noise or other impacts on residences.

5.3 More details about the proposal are at attachment 4 and a copy of the development plans is at attachment 5.

6 Assessment against planning controls

6.1 A full assessment of the development application against relevant planning controls is provided at attachment 6, including:

- Environmental Planning and Assessment Act 1979
- State Environmental Planning Policy (Biodiversity and Conservation) 2021
- State Environmental Planning Policy (Planning Systems) 2021
- State Environmental Planning Policy (Precincts - Central River City) 2021
- State Environmental Planning Policy (Resilience and Hazards) 2021
- State Environmental Planning Policy (Transport and Infrastructure) 2021
- Riverstone West Precinct Development Control Plan 2009
- Blacktown Local Strategic Planning Statement 2020
- Central City District Plan 2018.

7 Issues raised by the public

7.1 The proposed development was notified to 1715 property owners and occupiers in the locality between 8 November to 6 December 2023. It was also notified to Hawkesbury City Council and all the relevant local heritage societies. The development application was also advertised on Council's website under "Have your say" and 3 signs were erected on the site.

7.2 In response, we received 227 individual submissions including duplicates, 7 confidential submissions and 1 from Hawkesbury City Council. Twelve submissions were lodged in support of the application. All remaining submissions objected to the development.

7.3 The maps that show the location of the submitters at attachment 7 only include non-confidential submitters from:

- Vineyard
- Oakville
- Schofields
- Riverstone
- Marsden Park
- Angus
- Melonba
- Grantham Farm

7.4 The issues raised by the objectors relate primarily to flooding impacts associated with the proposed fill activities in the floodplain. The following additional issues were also raised in the responses:

- traffic impacts
- quality of fill to be imported
- lack of existing infrastructure to sustain the development
- construction impacts including duration, dust and noise
- local heritage impacts
- impacts on local amenity and character
- impacts of future development

- approval of the proposal establishing a precedent for future applications
- this development proceeding despite the cancellation of planning proposals for neighbouring Riverstone Town Centre, Schofields West and Marsden Park North

A summary of each issue and our response is at attachment 7.

A copy of all the submissions made have been sent to the Panel for their review and consideration as part of this report.

7.5 The issues raised in the objections are not sufficient to warrant refusal of the development application.

8 Key issues

8.1 Recent written advice received from the Department of Planning, Housing and Infrastructure on the proposed development

8.1.1 We received comments on this development from the Department of Planning, Housing and Infrastructure (the Department) on 27 August 2024.

- The Department's letter states that:
  - the proposal relates to a unique landholding that is in single ownership. The site was rezoned for employment purposes on 7 August 2009 by the Department. A range of flood modelling investigations were carried out prior to the site's 2009 rezoning. The cut and fill scenario that underpinned the rezoning did not provide for a balanced cut and fill volume on land below the Hawkesbury-Nepean Valley 1% flood level.
  - the cut and fill strategy associated with the 2009 rezoning of the precinct:
    - was not based on an equalisation of cut and fill volumes
    - allowed for the net loss of floodplain storage capacity
  - the design was based on achieving performance criteria relating to impacts on flood levels and flow velocity. The cut and fill numbers were an output of achieving satisfactory results in the site profiling to deliver the development pads. The primary contribution of adjacent Lot 11 was to provide a local source of fill for the site.
  - when the modelling was reviewed without the contribution of Lot 11, it became apparent that Lot 11 was not required for the civil works to achieve an immaterial impact on off-site flood behaviour. This has since been verified by Cardno on behalf of the Department during the State Environmental Planning Policy amendment investigations between 2020 and 2022.
- The flooding assessment prepared by Cardno (now Stantek) that the Department relied upon when they approved the State Environmental Planning Policy amendment is included at Attachment 9. The flood modelling undertaken by Cardno improved upon the 2009 modelling by adjusting the fill profile. The current proposal's fill profile reflects the fill profile proposed in the flooding assessment undertaken by Cardno (now Stantek).
- In light of the Department's advice and the previous flood modelling undertaken, Council accepts that a non-balanced cut and fill scenario as well as a loss of floodplain capacity was always going to be a reality when developing the Riverstone West Precinct as an employment area. Our recommendation for approval of this application has been made based on the Department's advice and specific flood modelling commissioned by them.

8.1.2 Advice from the Department also included a request for Council to consider Clause 5.21 Flood Planning in Blacktown Local Environmental Plan 2015. The following table outlines the details of Council's consideration of Clause 5.21:

- The Department's advice has drawn our attention to assess the application against standard Clause 5.21 Flood Planning in Blacktown Local Environmental Plan 2015. Our assessment against this clause is in the table below.

Control	Comment
5.21 Flood planning (1) The objectives of this clause are as follows:	
(a) to minimise the flood risk to life and property associated with the use of land,	(a) The Department of Planning, Housing and Infrastructure (the Department) provided a letter of advice to Council on 27 August 2024. The Department states in this letter that the flood modelling undertaken between 2020 and 2022 which informed their decision to amend State Environmental Planning Policy (Precincts—Central River City) 2021 (the SEPP) indicated that the civil works proposed will achieve an immaterial impact on off-site flood behaviour. This was the intent of the wording amendment in the SEPP by replacing the words 'any increase of flood levels' with 'any material increase of flood levels'. Council defers to the Department's advice and modelling to satisfy this objective.
(b) to allow development on land that is compatible with the flood function and behaviour on the land, taking into account projected changes as a result of climate change,	(b) The Department's advice in their letter to Council states that the flood modelling undertaken between 2020 and 2022 which informed their decision to amend State Environmental Planning Policy (Precincts—Central River City) 2021 (the SEPP) indicated that the civil works proposed will achieve an immaterial impact on off-site flood behaviour. The flood study and associated modelling do not address changes to flood behaviour as a result of climate change. The result of climate change is not considered applicable to bulk earthworks, as under the DCP the minimum fill level needs to align with the prevailing flood planning levels. It may however impact on future built form development applications where finished floor levels will be determined by the applicable flood studies and flood planning level. The current applicable flood study is the Hawkesbury-Nepean River Flood Study 2024, produced by the NSW Reconstruction Authority. It assesses the potential impacts of climate change on flooding.
(c) to avoid adverse or cumulative impacts on flood behaviour and the environment,	(c) The Department's view is that the cut and fill strategy associated with the 2009 rezoning of the precinct: • was not based on an equalisation of cut and fill volumes • allowed for a net loss of floodplain storage capacity. The Department's view is that the final scenario underpinning the rezoning did not provide for balanced cut and fill volumes on land below the Hawkesbury-Nepean Valley 1 in 100 year flood

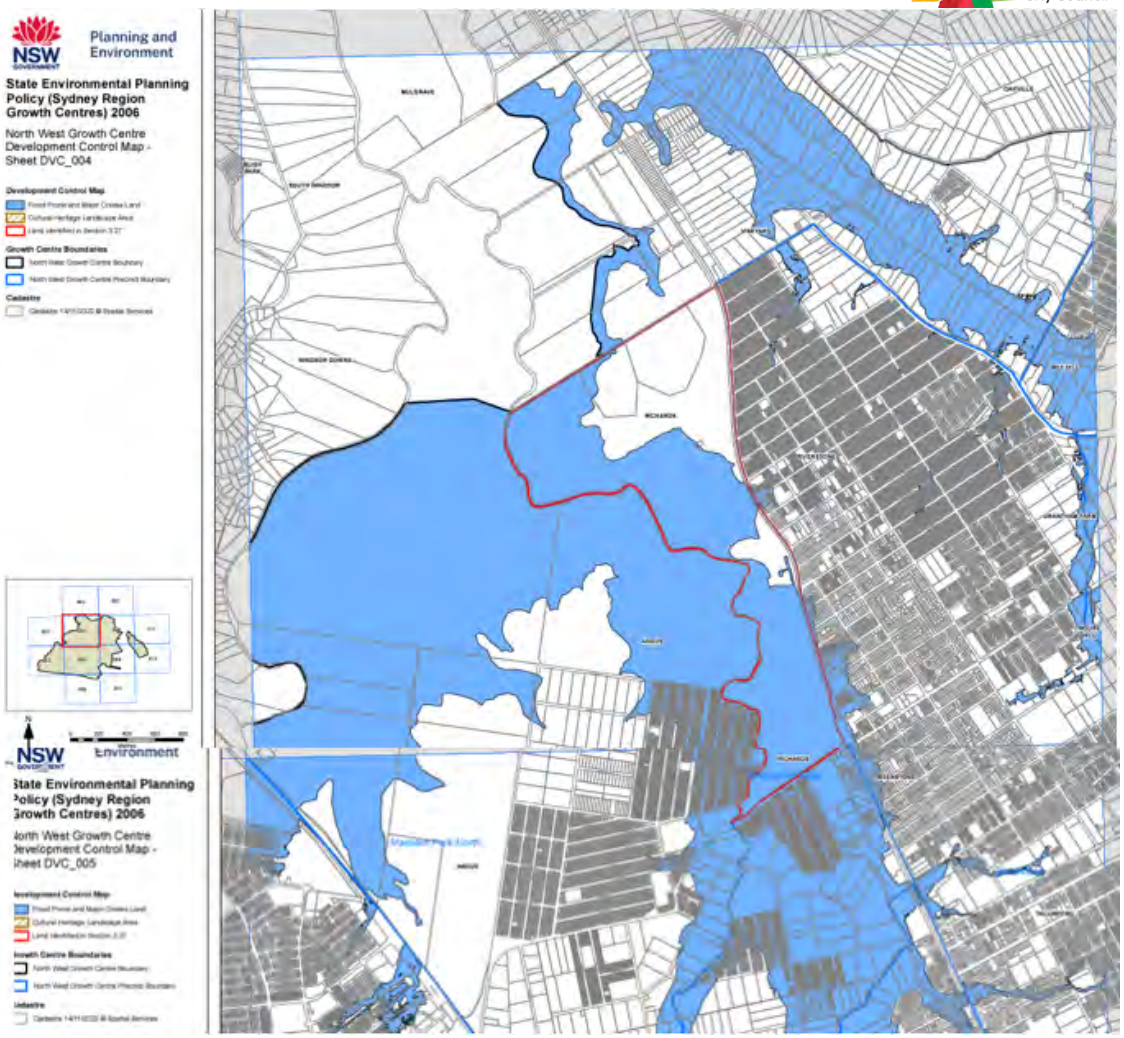
	level, and that this allowed for a net loss of floodplain storage capacity. Council therefore defers to the Department's advice and modelling to satisfy this objective.
(d) to enable the safe occupation and efficient evacuation of people in the event of a flood.	(d) The application is accompanied by a Flood Emergency Response Plan which provides evacuation principles and routes for the proposed bulk earthworks development. These will ensure people can safely occupy the land and evacuate in the event of a flood. Sydney Trains and Transport for NSW have assessed the application and found it to be satisfactory, subject to conditions. Therefore, this objective is achieved.
(2) Development consent must not be granted to development on land the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development:	
(a) is compatible with the flood function and behaviour on the land, and	(a) The Department's letter states that the flood modelling undertaken between 2020 and 2022 which informed their decision to amend State Environmental Planning Policy (Precincts—Central River City) 2021 indicates that the civil works proposed will achieve an immaterial impact on off-site flood behaviour. Council therefore defers to the Department's advice and modelling that the application can comply with this control.
(b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and	(b) The proposal is to carry out bulk earthworks on the land based on cut and fill profiling which the Department has confirmed will have an immaterial impact on off-site flood behaviour. Council defers to the Department's advice and modelling which indicates that the application can comply with this control.
(c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and	(c) The application is accompanied by a Flood Emergency Response Plan which provides evacuation principles and routes for the proposed bulk earthworks development. These will ensure people can safely occupy the land and evacuate in the event of a flood. Sydney Trains and Transport for NSW have assessed the application and found it satisfactory, subject to conditions. Therefore, the development complies with this requirement.
(d) incorporates appropriate measures to manage risk to life in the event of a flood, and	(d) The application is accompanied by a Flood Emergency Response Plan which provides evacuation principles and routes for the proposed bulk earthworks development. These will ensure people can safely occupy the land and evacuate in the event of a flood. Sydney Trains and Transport for NSW have assessed the application and found it satisfactory, subject to conditions. Therefore, the development complies with this requirement.
(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.	(e) The stormwater strategy for the development includes drainage swales and sediment basins along the periphery of the earthworks pads to not affect the riparian corridor. Sediment and erosion control measures are also to be implemented such

	as: • sediment fencing downstream of disturbed areas, • dust control measures, • placement of hay bales or mesh and gravel inlet filters around and along • proposed catch drains and around stormwater inlet pits • stabilised site access at the construction vehicle entry/exits to avoid sediment spreading onto the surrounding road network. Any stockpiled material, including topsoil, will be located as far away as possible from any associated watercourses or temporary overland flow paths. Sediment fences will be installed to the downstream side of stockpiles and any embankment formation. All stockpiles and embankment formations will be stabilised by hydroseeding or hydro mulching on formation. Therefore, the development will comply with this requirement, subject to conditions.
(3) In deciding whether to grant development consent on land to which this clause applies, the consent authority must consider the following matters:	
(a) the impact of the development on projected changes to flood behaviour as a result of climate change,	(a) The Department's advice in their letter to Council states that the flood modelling undertaken between 2020 and 2022 which informed their decision to amend State Environmental Planning Policy (Precincts—Central River City) 2021 (the SEPP) indicated that the civil works proposed will achieve an immaterial impact on off-site flood behaviour. The flood study and associated modelling do not address changes to flood behaviour as a result of climate change. The result of climate change is not considered applicable to bulk earthworks, as under the DCP the minimum fill level needs to align with the prevailing flood planning levels. It may however impact on future built form development applications where finished floor levels will be determined by the applicable flood studies and flood planning level. The current applicable flood study is the Hawkesbury-Nepean River Flood Study 2024, produced by the NSW Reconstruction Authority. It assesses the potential impacts of climate change on flooding.
(b) the intended design and scale of buildings resulting from the development,	(b) Not applicable as this application does not include built form. Buildings will be assessed in future development applications.
(c) whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,	(c) The application is accompanied by a Flood Emergency Response Plan which provides evacuation principles and routes for the proposed bulk earthworks development. These will ensure people can safely occupy the land and evacuate in the event of a flood. Sydney Trains and Transport for NSW have assessed the application and found it satisfactory, subject to conditions. Therefore, the

	development complies with this control, subject to conditions.
(d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.	(d) Not applicable as built form will be addressed in future development applications.

8.1.3 Consideration of amended Clause 3.27 of State Environmental Planning Policy (Precincts—Central River City) 2021:

- The Department amended Clause 3.27 of State Environmental Planning Policy (Precincts—Central River City) 2021 so that a *relevant area* was introduced as outlined in red on the maps below.



- The Department also changed the terms of Clause 3.27(b) in the instrument from:
  - o not allowing any increase of flood levels on adjoining properties in events up to the design 1 in 100 year recurrence flood

    to
  - o not allowing any “material increase” of flood levels on properties adjoining the relevant area in events up to the design 100 year recurrence flood
- The inclusion of the term “material increase” in the context of the amended instrument now opens this Clause to interpretation. The Department's letter, amendment to the SEPP and the associated modelling provides guidance for this interpetation. In addition, there is no numerical value or measure provided in the amended Clause 3.27 to determine exactly what a significant or insignificant increase in flood level is. In the absence of this numerical value, it is unclear as to how Council is to assess what is a significant increase in flood level. We can only therefore be guided by Cardno's flood assessment (attachment 9) relied upon by the Department when they approved the State Environmental Planning Policy (Precincts—Central River City) 2021 amendment. The Cardno flood assessment concluded that, based on the modelling showed:
  - o increases and decreases of up to 10mm can be observed for most of the modelled events and scenarios assessed and are widespread for certain

areas, these are considered to be within the modelling tolerances and can be considered as ‘negligible/no impact’.

- A flood impact and risk assessment prepared by Advisian - the applicant's consultants, dated May 2023 also accompanies this application. The Advisian assessment used the flood model developed by Cardno (now Stantek) to refine the design of the fill footprint for the Precinct with the objective of reducing the minor impacts identifed by Cardno. It concludes that the predicted impacts of the development on flooding would not result in any material change in the risk to life or property on land surrounding the Site. It also confirms that this sitewide civil works proposal complies with Clause 3.27 of State Environmental Planning Policy (Precincts—Central River City) 2021.
- On this basis, Council defers to the Department's advice and modelling to confirm that the proposal will not materially increase flood levels on properties adjoining the site.

8.1.4 Advice from the Department to consider Clause 1.7.2 of the Riverstone West Precinct Development Control Plan 2009:

- The letter received from the Department advised that Council should consider Clause 1.7.2 of the Riverstone West Precinct Development Control Plan 2009 (DCP) to assess this application. Our assessment against Clause 1.7.2 is outlined in the table below.

Control	Comment
1.7.2 Variations to Development Controls Council may grant consent to a proposal that does not comply with the controls, providing the intent of the controls is achieved. Similarly, Council may grant consent to a proposal that varies from the Indicative Layout Plan (ILP), where the variation is considered to be minor and the proposal remains generally consistent with the ILP. As such, each DA will be considered on its merits. Where variation from the Riverstone West ILP is proposed, the applicant is to demonstrate that the proposed development is consistent with the vision and development objectives for the Precinct set out in Section 2 and the objectives and controls in Sections 3, 4, 5 and 6 and the Growth Centres SEPP Amendment (Riverstone West Precinct) 2009. Where a variation is sought it must be justified in writing indicating how the development will meet the intention of the objectives of the relevant control and/or is generally consistent with the ILP.	In order to address the Department’s position, this application requires a variation to be approved to Clause 4.2 of the Riverstone West Precinct Development Control Plan 2009 relating to cut and fill controls. The statement of environmental effects that accompanies the application provides written justification for the variation from the cut and fill controls and discusses how each of the objectives of Clause 4.2 are met. This complies with the last 2 paragraphs of this control. Control 2 in Clause 4.2 requires earthworks at the site to achieve a balance between cut and fill in accordance with the floodplain management strategy in Appendix C of the Development Control Plan. Figure C1 and C2 in Appendix C identify Lot 11 DP816720 (which is immediately to the west of the site) to be used as a compensatory cut zone for fill deposited on the site. The current proposal however does not propose any compensatory cut zone on Lot 11 and excludes Lot 11 from this development entirely. The Department's letter dated 27 August 2024 advises that balanced cut and fill was never proposed at the time of the original rezoning of this land in 2009 when the site and Lot 11 were part of a single project. The Department has also advised that, when the flood modelling was reviewed as part of the SEPP amendment process in 2022, it also excluded Lot 11 as it was not required for the civil works to achieve an immaterial impact on off-site flood behaviour. Lot 11 is also no longer included in the Central River City SEPP as an area to which Section 3.27 applies. This was also part of the SEPP amendment made by the Department in

	2022. However, the Riverstone West Development Control Plan 2009 still clearly denotes Lot 11 as being required for offset works. Notwithstanding this, the SEPP requirements prevail over the Development Control Plan in the event of an inconsistency. Given the history and unique circumstances of the site, the Department believes that the nature of the proposed cut and fill is site specific and will not set an undesirable precedent on other sites/applications regarding the capacity of the floodplain or the direction of flows on other properties. Notwithstanding our concerns on the potential precedent that supporting the cut and fill controls may have, Council defers to the Department's advice and modelling and so on the basis of this advice we don't object to the Panel supporting the required variation to the DCP cut and fill controls.

8.1.5 Non-compliance with Clause 3.27(2)(a) of State Environmental Planning Policy (Precincts—Central River City) 2021:

- The wording of Clause 3.27(2)(a) of State Environmental Planning Policy (Precincts—Central River City) 2021 was not amended when the Department made amendments to Clause 3.27 in 2022. Clause 3.27(2)(a) requires that the consent authority must not grant consent for development on the subject land unless it is satisfied that the proposed development will be undertaken in a way that is consistent with the floodplain management strategy in the Riverstone West Precinct Development Control Plan published by the Department in August 2009. Our assessment of this Clause is at attachment 6.
- As outlined at 8.1.4 above, the proposal is not consistent with the floodplain management strategy in the Riverstone West Precinct Development Control Plan in the absence of a compensatory cut zone for fill being nominated on the site. Therefore, it is no longer possible to comply with Clause 3.27(2)(a) without a formal amendment being made by the Department to the Development Control Plan.
- Advice was sought from the Department in this regard. The Department has advised in its written submission that it has not historically had a policy position on development applications for cut and fill and flood storage. However, in recent times the Department has moved towards an approach that involves pursuing a balance of cut and fill in some situations. In this instance, given the history and unique circumstances of this proposal, the Department does not believe that the current proposal will set an undesirable precedent in terms of impact on either the capacity of the flood plain or directing flows on other properties. The modelling undertaken on behalf of the Department during the SEPP amendment investigations from 2020 to 2022 also indicates for them an immaterial impact on off-site flood behaviour from this development without the need for Lot 11 as a compensatory cut zone.
- Given the Department's position on this matter and if the variation to Development Control Plan is supported by the Panel, then it is considered that the proposal will be consistent with the Department's varied floodplain management strategy.

8.2 Traffic impacts associated with truck movements

8.2.1 A traffic impact assessment accompanies the application which estimates that approximately 170,000 truck movements will be required to deliver the large volume of fill material proposed to the site. These trucks will also have to leave the site which would bring the total truck movements into and out of the site to 340,000.

8.2.2 The supporting documents estimate that only 10 trucks will enter the site per hour. The estimated truck movements will also occur over a period of several years as each stage of the earthworks is undertaken. So, while the number of truck movements in total is high, the movements will be limited to approximately 10 an hour to ensure that the impacts on the local street network are manageable. Furthermore, trucks will arrive at either the northern Bandon Road access or southern Garfield Road entrance points. In doing so, truck movements into the site will be dispersed between the 2 access points.

8.2.3 Trucks will also avoid the Garfield Road West level crossing and Railway Parade altogether as the Garfield Road West entry will be for ingress only for trucks entering from the west via Richmond Road. Trucks arriving/exiting via Bandon Road will be required to travel directly to Windsor Road to the east as per conditions in the consent.

8.2.4 The traffic report also provides traffic management controls and procedures for vehicles accessing the site including:

- drivers code of conduct
- driver responsibility
- crash or incident procedure
- environmental procedure
- monitoring procedure

These recommended traffic management controls and procedures have been included as conditions of consent.

8.2.5 We have included a separate condition requiring the submission of a truck travel management plan for the earthworks that includes a truck pre-booking system for trucks wanting to deliver fill to the premises to ensure these deliveries are managed on a daily basis to prevent trucks from creating traffic congestion impacts on the surrounding street network. It must include but not be limited to the following measures:

- a pre-booking requirement for delivery trucks
- ensure that only a maximum of 10 trucks enter the site per hour from any direction
- trucks planning to deliver materials are to call/radio ahead to check that the hourly maximum number of trucks has not been exhausted.
- confirm the route trucks will use to arrive to the site (either to Bandon or Garfield Road West ingress point)

8.2.6 A further condition has been included requiring a daily log book to be kept at the premises. This log book is to be made available for Council inspection at any time on request and must record:

- the date and time of delivery
- the registration number of every delivery truck
- quantity of fill material being delivered
- qualified hygienist certificate/report number
- location and source of fill being delivered

A qualified hygienist certificate/report is required to accompany each load confirming that no asbestos or other contaminants are present in the fill material brought to the site. This certificate/report is to be brought with the driver of the truck delivering the materials from the site where the clean fill was sourced from. This certificate/report is to be given to the site security staff upon arrival at the gate before the truck can be granted entry to the site. The applicant will need to archive the certificate/report with the log book details so that Council can do random checks if required. A condition has been included accordingly.

8.2.7 Notwithstanding the above, our traffic section, Sydney Trains and Transport for NSW have all assessed the application and consider it satisfactory, subject to conditions that have all been included in the draft consent.

8.3 Importation of 3.9 million cubic metres of fill to the site

8.3.1 As per the estimate of quantities and the statement of environmental effects that accompany the application, approximately 3.9 million m^3 of fill is proposed to be imported to the site to achieve the levels for the proposed earthworks pads.

8.3.2 Whilst this amount of imported fill is large, the overall filling is proposed to be done in 5 stages and over a number of years. The land itself is over 200 hectares in area, requiring a similarly large volume of fill to be imported to achieve the required development levels across the site.

8.3.3 There is potential for contaminated soil to be inadvertently imported to the site. To avoid contaminated soils from being imported to the site, conditions of consent have been imposed to ensure that only clean virgin excavated natural material (VENM) is imported to the site. The imported fill will also be tracked, certified and archived as outlined in 8.6.6 above.

8.4 Objections raised by the public in relation to flooding and other matters

8.4.1 We received over 200 individual objections to the proposal from the public and 12 in support. Note that 7 of these objections are confidential submissions, the contents of which are also addressed in the key issues.

8.4.2 Many of the concerns raised relate to the cumulative impacts of the proposal, Council has relied on the Department of Planning, Housing and Infrastructure's advice and modelling in finalising our recommendation of approval to these works. Their advice based on their 2020 flood studies carried out by Cardno (now Stantek) and confirmed by the applicant's consultants and additional information provided by the applicant has given us adequate certainty that the issues raised by the community have either been addressed to the Department's satisfaction or can be addressed through the conditions being recommended to the Panel.

8.4.3 The key issues raised by the objectors and our response to each key issue is at attachment 7.

8.5 Our recommendation is on the basis of a deferred commencement development consent

8.5.1 A number of letters have been forwarded to the applicant requesting additional information relating to heritage and vegetation management. Satisfactory information has not been provided to date. We have therefore imposed deferred commencement conditions of consent which will ensure that the requested documents are provided, assessed and approved by Council prior to the consent becoming operational. These documents include:

- an updated conservation management plan
- a statement of heritage impact
- a schedule and timeline for staging of conservation works
- an updated vegetation management plan

8.5.2 Our engineers have confirmed that 2 easements for stormwater drainage and a culvert are required over the property. These easements need to be registered with Land Registry Services prior to the consent becoming operational.

8.5.3 We have not yet to received concurrence of Transport for NSW on the design of the driveway access off Garfield Road West. Our engineers require this concurrence before the consent becomes operational.

8.5.4 The application is considered acceptable, but only on the basis of a deferred commencement consent.

9 External referrals

9.1 The development application was referred to the following external authorities for comment:

Authority	Comments
TransGrid	Acceptable subject to conditions
Endeavour Energy	Acceptable subject to conditions
Department of Primary Industries (Fisheries)	An Integrated Development Application must be submitted to Department of Planning and Environment-Water for assessment and determination. If Department of Planning and Environment-Water determines that the works do not require a Controlled Activity Approval, then the integrated development must be referred to DPI Fisheries and DPI Fisheries will require a s201 permit for dredging and reclamation under the FM Act in order to proceed. Department of Planning and Environment-Water have confirmed that Controlled Activity Approval is required, so no further referral is required to Department of Primary Industries (Fisheries) based on their comments
Department of Planning and Environment-Water	Acceptable subject to General Terms of Approval which includes Controlled Activity Approval. These have been included in the draft consent
Sydney Trains	Acceptable subject to conditions
Transport for NSW	No objections, but comments provided for Council's consideration. These comments are however out of date given that the haul road's intersection with Garfield Road was updated in the engineering plans provided on 11 October 2024. Council is awaiting updated TfNSW advice at the time of writing this report.
Jemena	Acceptable subject to conditions
Sydney Water Corporation	Acceptable subject to conditions
Ampol	Acceptable subject to conditions
State Emergency Services	Do not support the application. State Emergency Services is however not a concurrence authority under the relevant planning instruments. The application was referred for comment as State Emergency Services rescue people in flood events. The over arching advice from the Department, together with the applicant's traffic report and flood emergency response plan have sufficiently considered the concerns raised by State Emergency Services.

10 Internal referrals

10.1 The development application was referred to the following internal sections of Council for comment:

Section	Comments
Building	Acceptable subject to conditions
Engineering	Acceptable subject to deferred commencement conditions
Traffic	Acceptable subject to conditions
Drainage	Acceptable subject to deferred commencement conditions
Environmental Health	Acceptable subject to conditions
S7.11 Design	Only acceptable on the basis of the Department's advice in their letter dated 27 August 2024
Recreational Planning Design	No objections
Greenspace Services	Acceptable subject to conditions
Natural Areas	Acceptable subject to deferred commencement conditions
Heritage	Acceptable subject to deferred commencement conditions

11 Conclusion

11.1 The proposed development has been assessed against all relevant matters and is considered acceptable based on the Department of Planning Housing and Infrastructure's written advice, supporting flood studies and interpretation of the prevailing controls, as outlined in their letter dated 27 August 2024. It is considered that the likely impacts of the development have been satisfactorily addressed by the Department's advice and that the proposal is therefore in the public interest. The site is considered suitable for the proposed development based on the Department's advice, subject to conditions in a deferred commencement development consent.

12 Disclosure of political donations and gifts

12.1 Under Section 10.4 of the Environmental Planning and Assessment Act 1979, a disclosure statement must be lodged in certain circumstances in relation to any planning application, i.e. a development application, an application to modify a consent and an application to make an environmental planning instrument or development control plan.

12.2 A disclosure statement of a reportable political donation or gift must accompany a planning application or submission (including a submission either objecting to or supporting the proposed development) if the donation or gift is made within 2 years before the application or submission is made. If the donation or gift is made after the lodgement of the application, a disclosure statement must be sent to Council within 7 days after the donation or gift is made. The provision also applies to an associate of a submitter.

12.3 A disclosure statement may be made available for viewing upon a written request to Council in line with Section 12 of the Local Government Act 1993.

12.4 Disclosures:

- Political donations — Has a Disclosure statement been received in relation to this application? — No

  Ref:

If yes, provide Disclosure statement register reference

- Gifts — Have staff received a 'gift', that needs to be disclosed, from anyone involved with this application? — No

13 Recommendation

1 Approve DA-23-00740 for the reasons listed below, and subject to the conditions in the draft deferred commencement consent listed in attachment 10.

a The proposal should not result in any unacceptable impacts subject to implementing appropriate mitigation measures (Section 4.15(b) of the Environmental Planning and Assessment Act 1979)

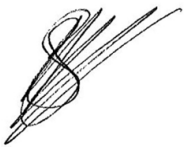
b The site is considered suitable for the proposed development since the Department has confirmed that the proposed cut and fill scenario is suitable at this site (Section 4.15(c) of the Environmental Planning and Assessment Act 1979)

c The proposal is considered to be in the public interest as it will facilitate the release of the land for employment purposes as per its current zoning. Development of this site will lead to social, environmental, and economic benefits and ultimately provide industrial, general business and open space uses for nearby and surrounding residents to benefit from (Section 4.15(e) of the Environmental Planning and Assessment Act 1979)

2 Council officers notify the applicant and all the submitters of the Panel's decision.

14 Declaration and endorsement

We, the undersigned, declare, to the best of our knowledge that we have no interest, pecuniary or otherwise, in this development application or persons associated with it; and we have provided an impartial assessment.



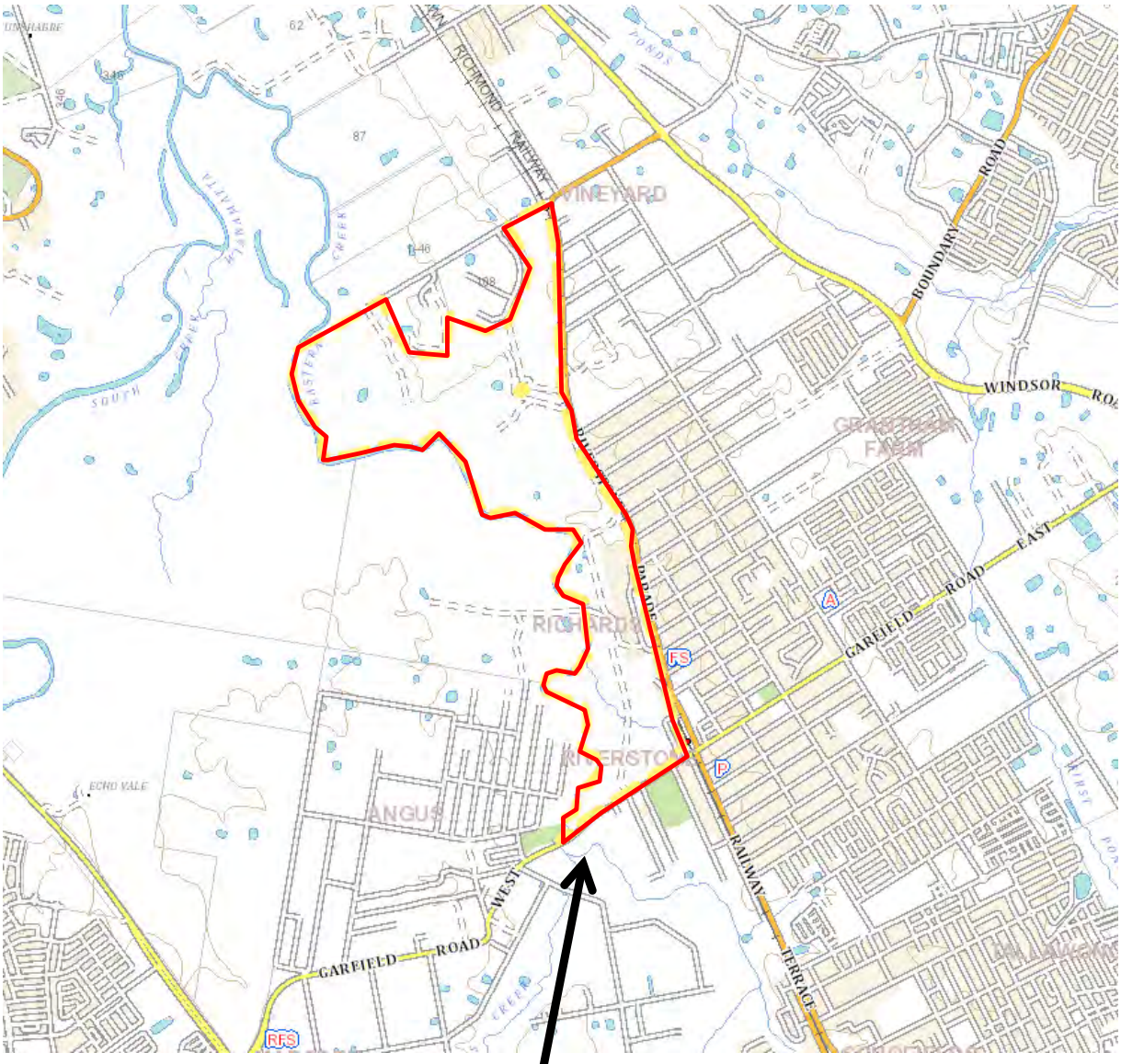
Jared Spies
Senior Development Assessment Planner

Judith Portelli
Manager Development Assessment

Peter Conroy
Director City Planning and Development

Attachment 1

Location map



LOCATION OF SITE

Attachment 2

Aerial image

LOCATION OF SITE

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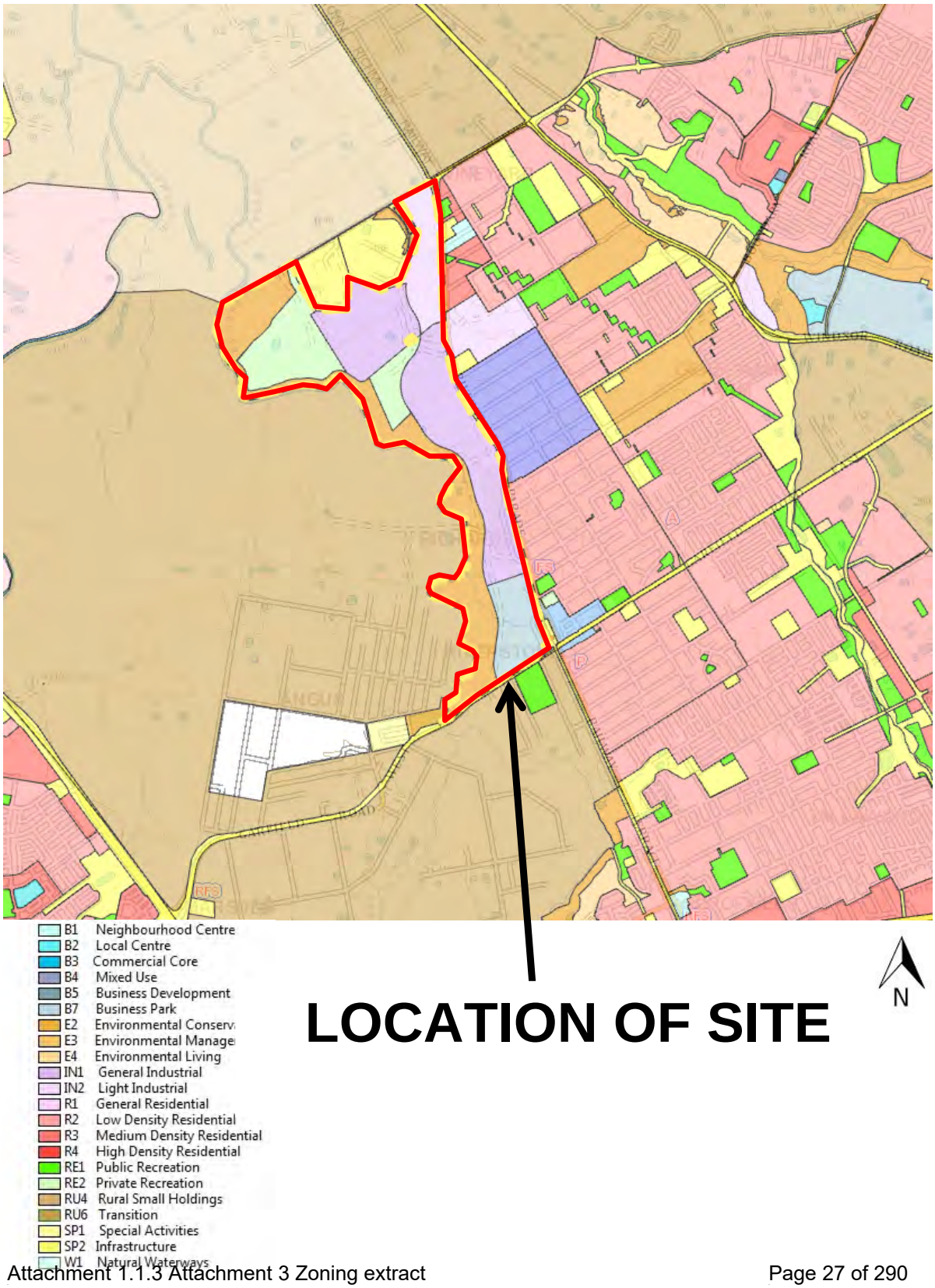
Attachment 3

Zoning extract



Attachment 4

Detailed information about proposal and DA submission material

1 Overview

1.1 The applicant proposes site wide bulk earth works in 5 stages including importation of approximately 3.9 million cubic metres of fill material via approximately 340,000 truck movements, removal of existing vegetation, demolition of existing industrial structures, construction of 2 temporary haulage roads (one off Bandon Road and one off Garfield Road West) and the construction of drainage swales and sediment detention basins. Each component of the proposed development is described in more detail below.

1.2 Establishment of temporary construction facilities:

- temporary facilities for the site preparation activities will be constructed within the relevant stages of the proposed development. Temporary facilities will include a security fence around the construction zone, site office with associated car park and a fenced laydown area to store items outside

1.3 Sediment and erosion control:

- sediment and erosion control measures are be implemented such as sediment fencing downstream of disturbed areas, dust control measures, placement of hay bales or mesh and gravel inlet filters around and along proposed catch drains and around stormwater inlet pits, stabilised site access at the construction vehicle entry/exits to avoid sediment spreading onto the surrounding road network. Any stockpiled material, including topsoil, will be located as far away as possible from any associated watercourses or temporary overland flow paths. Sediment fences will be installed to the downstream side of stockpiles and any embankment formation. All stockpiles and embankment formations will be stabilised by hydroseeding or hydro mulching on formation.

1.4 Vegetation Removal:

- existing vegetation will be removed in the area of the earthworks out of necessity given the intent of the application is to construct benched platforms for future development. The vegetation to be removed includes the remnant trees as well as a variety of grasses, herbs and weeds.

1.5 Demolition:

- most of the non-heritage structures and slabs in the old meatworks complex including ancillary elements, pavement and concrete, retaining walls and existing services are proposed for demolition in a staged manner as they fall within the relevant construction impact zone. These structures mainly fall within Stage E of the works plan.

1.6 Earthworks:

- major earthworks are proposed to be carried out to deliver benched platforms for future industrial and commercial uses through the cutting, stockpiling, repositioning and importation of fill material on-site. Bulk earthworks will involve cut of approximately 1,1 million m^3 and approximately 5 million m^3 of fill. The 3.9 million balance of fill material will be imported to the site.

1.7 Construction traffic management:

- the fill will be delivered initially with ingress through the existing access driveway connection to Garfield Road West with an ingress/egress through the existing driveway connection to Bandon Road.

- The existing access to Garfield Road West will only provide for left turn ingress (i.e. from the west) with ingress/egress along Bandon Road from/to Windsor Road. Trucks are not proposed to travel along Riverstone Parade.
- According to the traffic report submitted with the application, the number of truck movements that will import fill to the site in stages A to C will be approximately 80,000 and in stages D to E will be 90,000. This is a total of approximately 170,000 truck movements into the site or a total of approximately 340,000 into and out of the site once all stages of the development have been completed.

1.8 Installation of drainage works:

- there are a number of upstream catchments external to the site. Stormwater runoff from these external catchments currently cross the site through a number of culverts and open channels. Some of these culverts and channels will be retained as part of the development. However, some of the overland flow paths will be impeded by the development and will be converted to culverts, while others will be diverted. The discharge points to receiving waters are generally maintained in the same locations.
- Stormwater management will involve a series of temporary grass lined catch drains to convey runoff from the development to a series of sediment retention basins to manage flow quality prior to discharge to the receiving waters. It is proposed that 17 sediment basins with capacities of between 559 m^3 and 2,793 m^3 will be established on the periphery of the site.
- The catch drains and sediment basins will be constructed prior to any other earthworks to ensure an appropriate level of stormwater runoff treatment before discharge from the site.

1.9 Hours of operation:

- the proposed hours of construction will be between 7 am and 6 pm, Monday to Friday and 8 am to 1 pm on Saturday.
- if required, limited other activities that are proposed to be undertaken outside of these hours include:
  - works on existing services (if shutdowns are required)
  - deliveries of oversized loads
  - responsive activities to protect people, property and the environment in the event of an emergency such as a flood
  - other activities undertaken in accordance with relevant noise guidelines or which have no material noise or other impacts on residences.

2 Traffic

2.1 A traffic impact assessment by TTPA dated April 2023 accompanies the application. It estimates that approximately 170,000 truck movements will be required to deliver the proposed volume of fill material to the site. It estimates that only 10 trucks will enter the site per hour. The total estimated truck movements will also occur over a period of several years as each stage of the earthworks is undertaken. It also states that trucks will arrive at either the northern Bandon Road or southern Garfield Road entrance points, meaning approximately 5 trucks will arrive per hour from each direction.

2.2 This traffic report indicates that trucks will avoid the Garfield Road level crossing and Railway Parade altogether as the Garfield Road West entry will be for ingress only for trucks entering from the west via Richmond Road. Trucks arriving/exiting via Bandon Road will travel directly to Windsor Road to the east.

2.3 The traffic report also provides traffic management controls and procedures for vehicles accessing the site including:

- drivers code of conduct
- driver responsibility
- crash or incident procedure
- environmental procedure
- monitoring procedure

2.4 A Bandon Road level crossing risk assessment prepared by CK Consultants Pty Lt dated 10 September 2020 accompanies the application. It identifies the risks, issues and hazards that could lead to unacceptable safety or operational outcomes at the Bandon Road Level Crossing from development of the Riverstone West Precinct.

3 Bandon Road level crossing risk assessment

3.1 A Bandon Road level crossing risk assessment prepared by CK Consultants Pty Lt dated 10 September 2020 accompanies the application. It identifies the risks, issues and hazards that could lead to unacceptable safety or operational outcomes at the Bandon Road Level Crossing from development of the Riverstone West Precinct.

3.2 It confirms that an upgrade to the Bandon Road railway crossing would not be required since the capacity of the crossing is 4,162 vehicles per day with only minor line marking required, after which further capacity up to 16,000 vehicles per day can be provided by signalising the intersection of Riverstone Parade and Bandon Road.

4 Heritage

4.1 Heritage interpretation strategy

4.1.1 A heritage interpretation strategy prepared by Worley Parsons dated 7 April 2014 accompanies the application as required under the Riverstone West Precinct Development Control Plan 2009.

4.1.2 The purpose of the strategy is to:

- Communicate using detailed background historical research, description and analysis, the significance of the items of interest and their associations to the listed heritage items located within the Precinct (Former Manager's Residence, Group of Workers Cottages and the Former Butcher's Shop);
- Provide detailed advice for interpreting items of heritage interest in the Riverstone West Precinct;
- Identify the major historical themes, key storylines and audiences;
- Provide practical recommendations for the interpretation of items of heritage interest; and most importantly;
- Provide opportunity for the community's voice to be heard in the interpreting of its history and what and why things items are important to it.

4.2 Conservation Management Plan

4.2.1 A Conservation Management Plan prepared by Worley Parsons dated 5 June 2014 accompanies the application as required under the Riverstone West Precinct Development Control Plan 2009. The Conservation Management Plan is to be adopted by Council prior to any approval for works in the vicinity of the heritage items.

4.2.2 The plan provides a record of the known history, changes in use and fabric of the Precinct having regard to the pattern of development of Riverstone, current and future land uses applying to the Precinct and its context and setting.

4.2.3 The plan identifies, assesses and confirms the conservation values of the heritage items identified above and their heritage significance. It provides conservation policies to guide the practical management and conservation of the values that constitute the heritage significance of the items, with a view to facilitating the future development of the Precinct.

4.3 Heritage Advice

4.3.1 Heritage advice prepared by Advisian dated 3 May 2023 accompanies the application.

4.3.2 This advice states that the heritage interpretation strategy and conservation management plan are still considered valid based on the proposed development.

4.4 Aboriginal Heritage

4.4.1 The application is accompanied by 2 Aboriginal Heritage Impact Permits that have already been issued under the National parks and Wildlife Act 1974. These permits allow harm to certain Aboriginal objects on the land.

4.4.2 The 2 permits were due to expire in 2021, however variations to the permits have been approved by Department of Premier and Cabinet. These variations now extend the lapse date of the permits to 2031.

5 Contamination

5.1 Contamination Assessment and Remedial Action Plan 2013 and 2014

5.1.1 A Contamination Assessment and Remedial Action Plan prepared by Consulting Earth Scientists Pty Ltd dated 26 September 2013 accompanies the application. It identifies several contamination issues at the site associated with what at the time was Stage 1 (currently proposed primarily as Stages A, B and C)

5.1.2 A Contamination Assessment and Remedial Action Plan prepared by Consulting Earth Scientists Pty Ltd dated 26 September 2014 accompanies the application. It identifies several contamination issues at the site associated with what at the time was Stage 2 (currently proposed primarily as Stages D and E) which require remediation including:

5.1.3 Contamination issues identified which require remediation included:

- elevated arsenic and Total Petroleum Hydrocarbon concentrations in fill present on site,
- the presence of significant quantities of animal bones, horns and hair in fill underlying some areas of the site
- Asbestos Containing Materials as fragments of bonded cement sheeting.
- underground fuel storage

The plan also outlines the procedures and standards to be followed to remediate the site so that it is suitable for future industrial and open space land uses and to prevent impacts to human health and the environment.

5.2 Asbestos management plan

5.2.1 An asbestos management plan prepared by JBS&G dated 1 August 2018 accompanies the application. It identifies maintenance works required to address potential hazards associated with asbestos impacted material located at the north eastern portion of the site. This involved capping of the asbestos impacted materials

- Regrading of the asbestos impacted material to create a level surface.

- Placement of a geotextile over the asbestos impacted material, for the purposes of acting as a marker layer to demarcate the impacted materials retained below.
- Placement of at least 200mm of non-asbestos impacted materials (i.e. encapsulation material) overlying the geotextile for the purposes of encapsulating the asbestos impact.

5.3 Validation report

5.3.1 A validation report for asbestos maintenance works prepared by JBS&G dated 12 November 2021 accompanies the application. It validates that the previous asbestos hazard identified on the site is now retained. It confirms that:

- the extent of the previous asbestos impacted area on the site has been filled with material that is consistent with excavated natural material;
- the site surface has further been covered with a hardstand material
- the site was free of any indication of asbestos impact being present at the site surface or otherwise present in proximity of the site.

5.4 Audit of asbestos retention works

5.4.1 Two audits of asbestos retention works prepared by JBS&G dated 7 November 2022 and 11 October 2023 accompany the application. They audit the current status of the asbestos containment effectiveness consistent with an annual inspection / audit requirement.

5.4.2 The audits confirm that site controls continue to be effective to cause the retention of the asbestos hazard.

5.5 Applicability of previous environmental assessments

5.5.1 An assessment of current applicability of historical environmental site assessments prepared by JBS&G dated 17 April 2023 accompanies the application. It was prepared to determine whether the scope, conclusions and recommendations of the 2013 and 2014 contamination assessments mentioned above are still applicable to the site. It lists the additional assessments undertaken since the issue of the earlier assessments.

5.5.2 It concludes that there is not considered to be a significant potential for contamination to have occurred on the site since the issue of the 2013 and 2014 assessments apart from:

- the identification of imported fill at the north-west of the site that has been addressed by the abovementioned containment works
- overflows / spills from the oil / water separator at the north-west of the former Meatworks building in the central portion of the site. The impact present was not considered to preclude an ongoing commercial / industrial use. The oil / water separator has been repaired to prevent overflows occurring subsequent.
- other activities as undertaken on the site, including the importation and use of non-contaminated fill materials from off-site, light commercial uses through the former operational area of the meatworks and storage of generally inert commercial / building materials in cleared levelled areas of the site are found to have a low potential for contamination.

5.5.3 On this basis, it concludes that there is not considered to be a requirement to undertake additional intrusive site environmental assessment works for the purposes of updating the characterisation of site contamination as presented in the 2013 and 2014 assessments. The findings in the 2013 and 2014 assessments are also still considered to be relevant and applicable to the site.

5.5.4 A follow up letter from JBS&G dated 9 September 2024 confirms that the site is currently suitable from a contamination perspective to be used for a commercial / industrial purpose. Detailed material tracking and material environmental sampling and analysis is proposed to be undertaken with the proposed filling works to confirm that the materials were suitable, from a contamination perspective, to be used as fill materials on the site. An unexpected finds protocol will be maintained throughout all works. An environmental assessment report will be issued following the filling works confirming that the site continues to be suitable, from a contamination perspective, for the future industrial uses.

6 Waste management

6.1 A waste management plan dated May 2023 accompanies the application which indicates how waste generated from the demolition of the existing industrial buildings will be managed

7 Flooding

7.1 A Floodplain Management Strategy by WorleyParsons dated 19th September 2014 accompanies the application as required under the Riverstone West Precinct Development Control Plan 2009. This strategy:

7.1.1 explains the site's existing flood characteristics

7.1.2 assesses the potential post-development impacts on local flood characteristics

7.1.3 assesses the potential impacts of the development on regional flood characteristics

7.1.4 assesses the potential impacts during intermediate stages of the development

7.1.5 proposes minimum fill levels for industrial or commercial development (17.3 m Australian Height Datum) and minimum floor levels 600 mm above that level (17.9 m Australian Height Datum)

7.1.6 describes the potential for cumulative flood impacts in the local floodplain and concludes that the impacts are effectively zero

7.1.7 provides a flood emergency response plan for the Riverstone West Precinct that demonstrates that there will be sufficient effective flood warning time (in excess of 38 hours) to facilitate evacuation of the Precinct. It also establishes that an upwardly grading evacuation route from the site exists.

7.1.8 provides flood related requirements for the development including:

- filling within the Precinct is not to encroach into the dedicated floodway corridor unless it can be shown that the conveyance capacity of the corridor will be maintained, and preferably improved, through compensatory excavation.
- any proposed fill within the Precinct is not to extend beyond the maximum developable extent indicated depending on whether or not excavation below 17.3 m AHD is proposed.
- minimum fill and floor levels
- compliance with the flood emergency response plan

7.2 A flood impact and risk assessment by Advisian dated May 2023 accompanies the application. It documents the results of the flood impact assessment undertaken for the Riverstone West Precinct during the State Environmental Planning Policy (Precincts—Central River City) 2021 amendment process undertaken in 2022. It also documents compliance of the development proposal with the flood emergency response protocols

recommended and adopted in the Floodplain Management Strategy by WorleyParsons. It concludes that the predicted impacts of the development on flooding would not result in any material change in the risk to life or property on land surrounding the site and therefore complies with clause 3.27 of State Environmental Planning Policy (Precincts—Central River City) 2021.

7.3 An overland flow assessment report prepared by J. Wyndham Prince dated November 2023 also accompanied the application. The purpose of the study is to size the required overland flow channel along the eastern boundary of the site to manage existing flows from the Riverstone Township that enter the site under the Blacktown - Richmond Railway line and to size an appropriate culvert to convey these flows under the proposed development pad to Eastern Creek. The overland flow channel and culverts together with a 5 cell reinforced concrete box culvert group have been designed to convey flows from both the future development and to manage existing flows that enter the site via existing culverts under the Blacktown - Richmond Railway line. The report outlines that the overland flow channel and culvert assessment result will have no adverse flood impacts outside of the subject site due to the proposed development in both the tail out water and no tail out water scenarios.

8 Noise and vibration

8.1 A construction noise and vibration management plan prepared by Renzo Tonin & Associates dated April 2023 was submitted with the DA. It addresses:

- the noise emission criteria in the NSW Interim Construction Noise Guideline
- potential disturbance from vibration on the occupants of the surrounding residential and commercial receivers
- potential structural damage from vibration to rail corridor infrastructure and heritage items in Richards

8.2 It recommends noise control solutions to reduce noise impacts to sensitive receivers including:

- regularly inspect and maintain equipment to ensure it is in good working order.
- provide special attenuation to any use and maintenance of ‘noise control’ or ‘silencing’ kits fitted to machines to ensure they perform as intended.
- avoid any unnecessary noise when carrying out manual operations and when operating plant.
- simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be limited/avoided where possible.
- the offset distance between noisy plant and adjacent sensitive receivers is to be maximised where practical.
- where practical, plant and equipment that are used intermittently are to have throttle setting reduced or shut down when not in use. Any plant and equipment that will not be used for extended periods of time are to be switched off.
- trucks engines should be turned off as opposed to idling, if feasible. Also, non-tonal reversing beacons should be considered for the on-site vehicles.
- a management procedure will need to be put in place to deal with noise complaints that may arise from demolition activities. Each complaint will need to be investigated and appropriate noise amelioration measures put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits.
- good relations with people living and working in the vicinity of the Riverstone West Precinct should be established at the beginning of a project and be maintained throughout the project, as this is of paramount importance. Keeping people informed

of progress and taking complaints seriously and dealing with them expeditiously is critical. The person selected to liaise with the community must be adequately trained and experienced in such matters.

- Implementation of noise control measures such as those suggested in Australian Standard 2436- 2010 Guide to Noise Control on Construction, Demolition and Maintenance Sites, are expected to reduce predicted earthwork noise levels.

8.3 The assessment of vibration levels from the earthworks provides recommended buffer distances for vibration compliance. The assessment revealed the use of a vibratory compactor/roller to result in a medium to high risk of impacting the surrounding residential/commercial receivers along Riverstone Parade and Garfield Road West as they are within the recommended buffer distances for human comfort. However, buffer distances should be confirmed prior to the start of the earthworks through onsite measurements of vibration.

8.4 With respect to potential structural/cosmetic damage to rail corridor infrastructure and heritage items in Richards, vibration management measures will be provided to aid in minimising the likelihood of structural damage from vibration impacts.

9 Dust control

9.1 The applicant has proposed several dust control measures for the construction phase of the development, including

- cease operations when there are any visible dust emissions until mitigation measures applied are adequately controlling dust or conditions improve
- retain existing vegetation until it is required to be removed to undertake the works
- stage works to minimise areas of disturbance at any one time
- develop and implement a Construction Dust Management Plan prior to construction commencing
- dust suppression using water sprays or dust suppression surfactants to ensure no visible dust emissions
- install temporary covers over areas of earthworks where possible.
- locate stockpiles away from sensitive receptors, drainage paths, easement, kerb or road surface.
- covering/tarping of stockpiles – this may include the use of mulch temporarily laid over the stockpile.
- enforce 15km/hr speed limit for vehicles on site.
- cover all truck loads entering and leaving the site.
- Vehicles leaving the site will be cleaned of dirt and other materials to avoid tracking these materials onto public roads.

10 Flora and Fauna

10.1 A flora and fauna impact assessment prepared by EMM dated 26 September 2013 accompanies the application. It assesses the impacts of the proposed earthworks on biodiversity on the areas of the site that occur outside the bio-certified area.

10.2 The assessment concludes that the earthworks are unlikely to have a significant impact on any threatened biodiversity recorded at the site or with the potential to occur. It recommends mitigation measures to ameliorate any potential impacts from indirect impacts on threatened biodiversity.

11 Vegetation management plan

11.1 A draft vegetation management plan prepared by EMM dated April 2014 accompanies the application.

11.2 This plan provides recommendations and strategies to:

- protect and enhance existing ecological communities within the Riverstone West Precinct;
- protect, restore and enhance the environmental values and functions of watercourses and riparian corridors within the Riverstone West Precinct;
- protect and provide habitat linkages between areas of ecological communities throughout the Riverstone West Precinct;
- provide strategies for the revegetation and sustainable management of ecological communities within the Riverstone West Precinct;
- provide for the long-term management of the Environmental Corridor.

12 Biodiversity Development Assessment Report

12.1 A biodiversity development assessment report prepared by EMM Consulting Pty Ltd dated March 2024 accompanies the application.

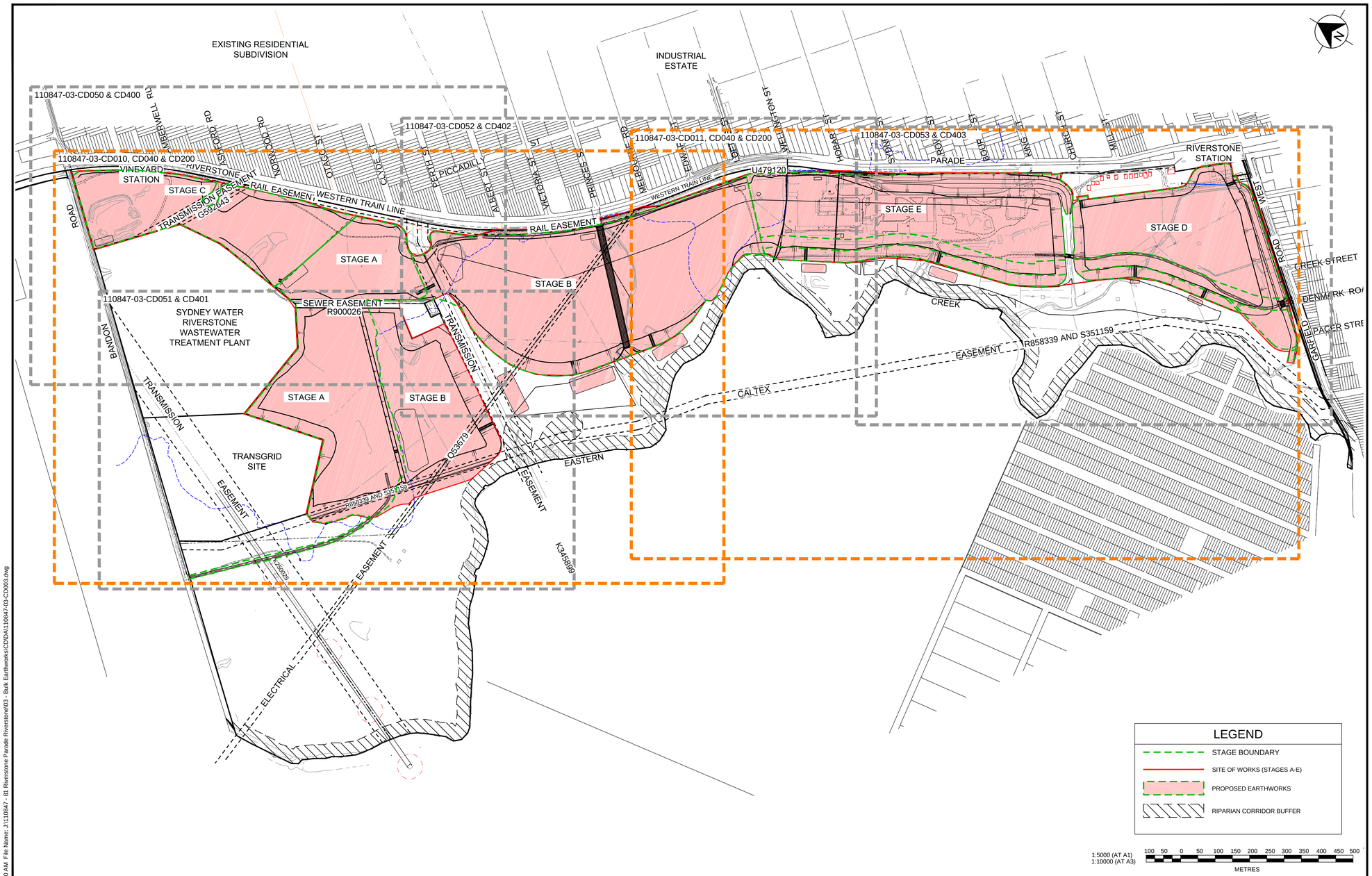
12.2 The need for this report has been triggered based upon entities within the subject land being present on the Biodiversity Values Map. These entities are listed as threatened species or communities with potential for serious and irreversible impacts and trigger the requirement for this report and entry into the Biodiversity Offset Scheme.

12.3 Neither of the mapped vegetation zones recorded on the site met the criteria for offsetting, as a result of the degraded nature of the vegetation. No ecosystem credits are required to offset the project.

12.4 Impacts to threatened species habitat requiring offsets include direct impacts on 5.8 hectares of foraging habitat for the Southern Myotis. A total of 1 species credit is required to offset the residual impacts of the project.

Attachment 5

Development application plans



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C	CUT ZONE ADDED	DG	GA	MS	MS	31/10/23
B	LIMIT OF WORKS EXTENDED	DG	GA	CR	MS	16/06/23
A	FOR DA APPROVAL	DG	GA	CR	MS	27/04/23
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
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CLIENT: SAKKARA

STATUS:
ISSUE FOR DA APPROVAL
NOT FOR CONSTRUCTION
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

RIVERSTONE WEST PRECINCT
SITEWIDE CIVIL WORKS
OVERALL SITE PLAN

PROJECT No: 110847-003
SHEET No: CD003

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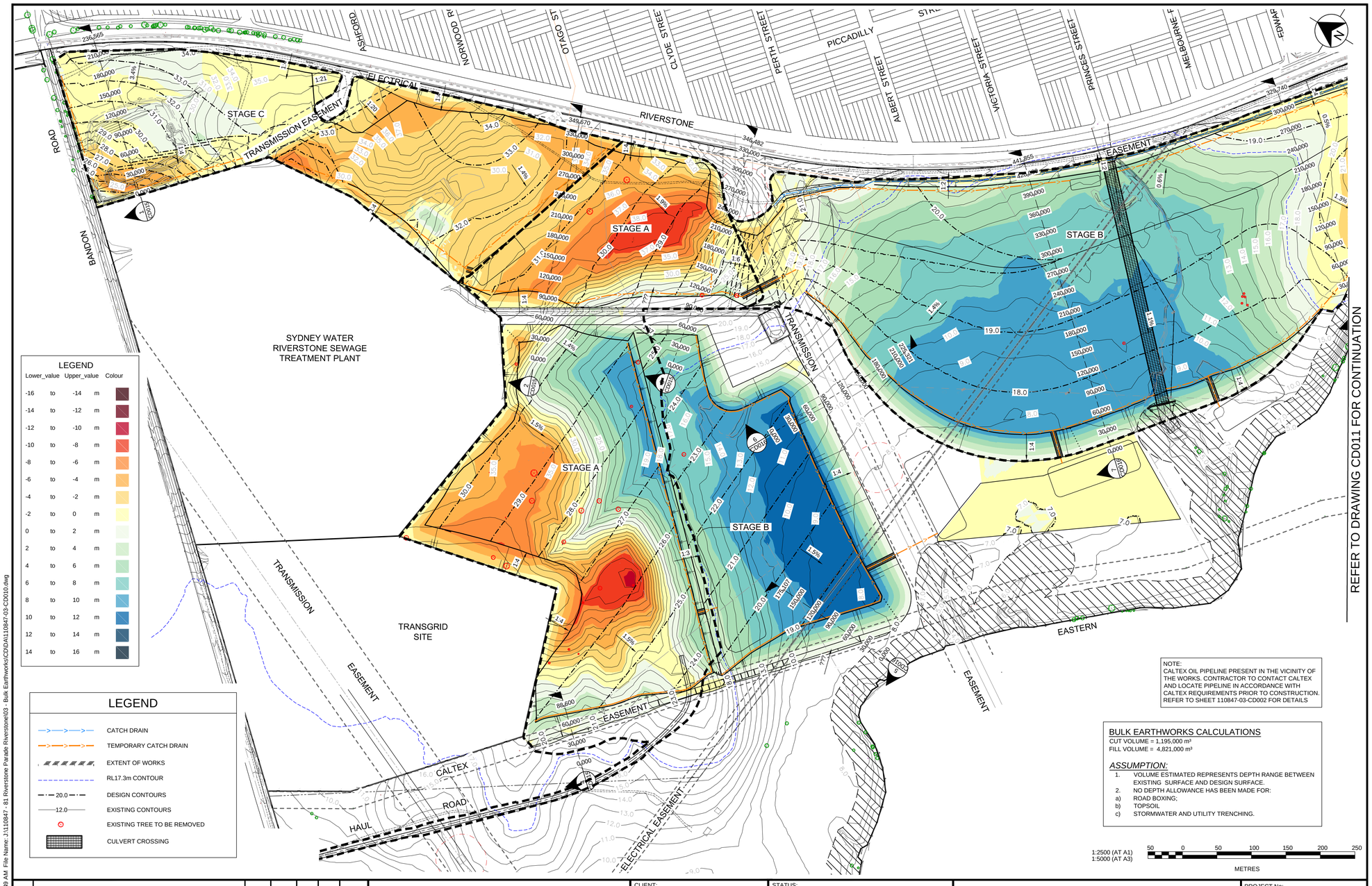

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A	FOR DA APPROVAL	DG	GA	CR	MS	27/04/23
	AMENDMENT	DES	DRN	CKD	APR	DATE

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RIVERSTONE WEST PRECINCT
SITEWIDE CIVIL WORKS
CUT & FILL PLAN
SHEET 1

PROJECT No: 110847-010
SHEET No: CD010

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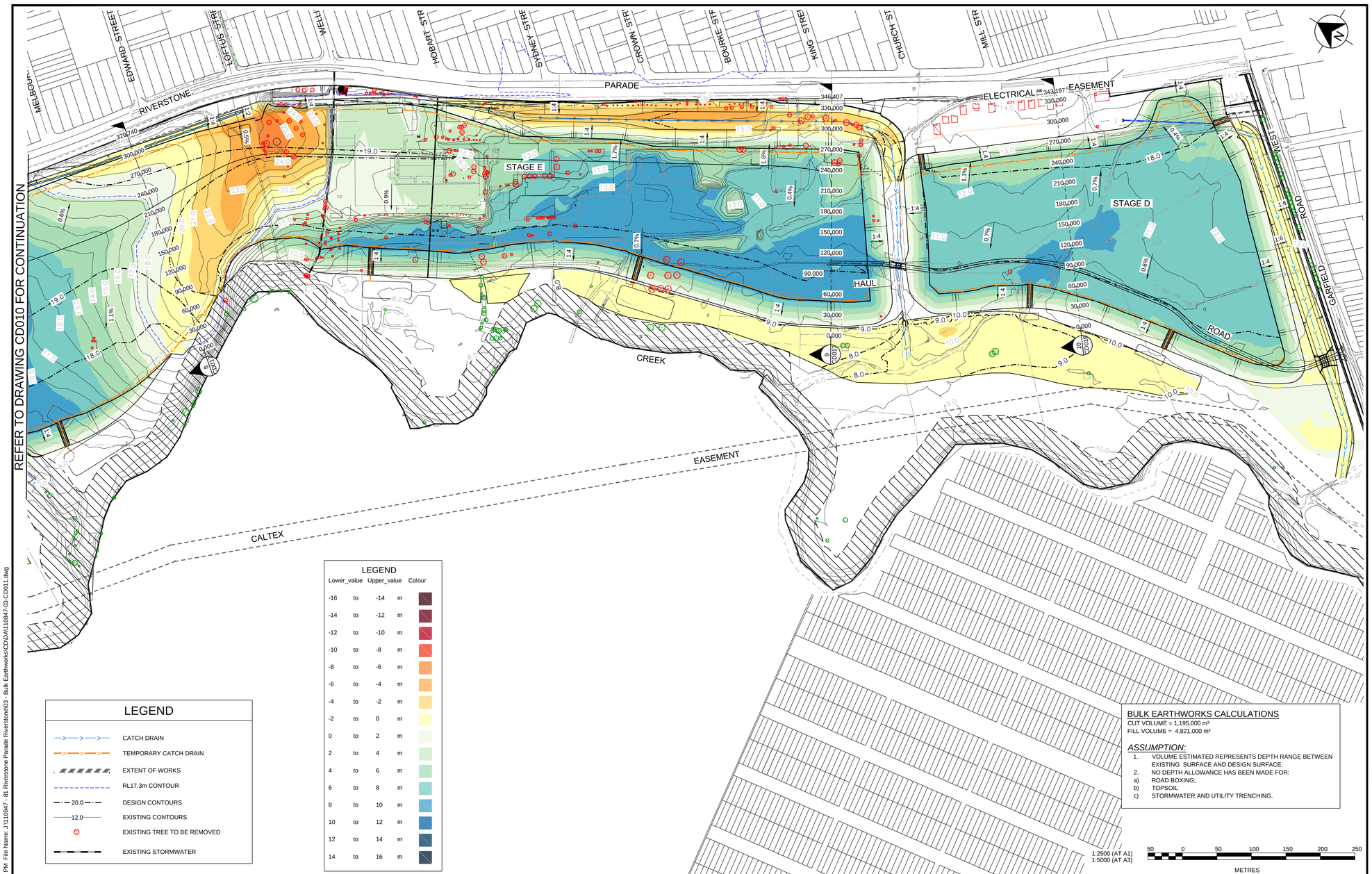

	AMENDMENT	DES	DRN	CKD	APR	DATE
D	HAUL ROAD 2 UPDATED	DG	DG	MS	MS	25/03/24
C	CUT/FILL & GRADING UPDATED; CUT ZONE ADDED	DG	GA	MS	MS	31/10/23
B	CUT & FILL HATCH & VOLUMES UPDATED	DG	GA	CR	MS	16/06/23
A	FOR DA APPROVAL	DG	GA	CR	MS	27/04/23

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STATUS: ISSUE FOR DA APPROVAL
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RIVERSTONE WEST PRECINCT
SITEWIDE CIVIL WORKS
CUT & FILL PLAN
SHEET 2

PROJECT No: 110847-011
SHEET No: CD011

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Attachment 6

Assessment against planning controls: section 4.15, summary assessment and variations to standards

1 Environmental Planning and Assessment Act 1979

1.1 Section 4.15 'Heads of Consideration'

Heads of Consideration	Comment	Complies
a. The provisions of: i. Any environmental planning instrument	The proposal is considered to be mostly consistent with the relevant EPIs, including: • State Environmental Planning Policy (Biodiversity and Conservation) 2021 • State Environmental Planning Policy (Planning Systems) 2021 • State Environmental Planning Policy (Precincts – Central River City) 2021 • State Environmental Planning Policy (Resilience and Hazards) 2021 • State Environmental Planning Policy (Transport and Infrastructure) 2021 • Blacktown Local Environmental Plan 2015 However, Clause 3.27 of State Environmental Planning Policy (Precincts – Central River City) 2021 cannot be fully complied with given that the proposal is not consistent with the floodplain management strategy in Clause 4.2 of the Riverstone West Precinct Development Control Plan 2009. Notwithstanding this, the State Environmental Planning Policy requirements prevail over the Development Control Plan in the event of an inconsistency.	No, but considered acceptable based on flood modelling and associated written advice received from the Department of Planning Housing and Infrastructure on 27 August 2024
ii. Any proposed instrument that is or has been the subject of public consultation under this Act	There are no draft Environmental Planning Instruments or policies relevant to the proposed development.	Not applicable
iii. Any development control plan	The Riverstone West Development Control Plan 2009 applies to the site. The proposed development is generally compliant with the numerical controls established under the DCP, but again the proposal is not consistent with the floodplain management strategy in Clause 4.2 of the Riverstone West Precinct Development Control Plan 2009 relating to the cut and fill provisions.	No, but based on flood modelling and associated advice from the Department, the variation can be considered acceptable.
iv. a) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has	Not applicable	Not applicable

Heads of Consideration	Comment	Complies
offered to enter into under section 7.4,		
v. the regulations (to the extent that they prescribe matters for the purposes of this paragraph),	Refer to Part 4, Division 1 of the Regs 2021 Clause 61 • Demolition of a building - the consent authority must consider the Australian Standard AS 2601—2001: The Demolition of Structures. The application is compliant with the Regulations.	Yes, subject to conditions.
b. The likely impacts of the development, including environmental impacts on both the natural and built environments, and social and economic impacts on the locality	We are not satisfied that the cumulative impacts of flooding have been addressed, but based on the advice from the Department of Planning, Housing and Infrastructure on this matter it is considered acceptable. It is considered the potential impacts of the development can be satisfactorily mitigated through conditions of consent. As such, deferred commencement conditions of consent have been imposed to ensure that the biodiversity, heritage and engineering information that is still required is provided by the applicant and approved by Council prior to the development consent becoming operational.	Based on flood modelling and associated advice from the Department and subject to deferred commencement conditions of consent, the proposal is acceptable.
c. The suitability of the site for the development	The Department's advice confirms that the proposed cut and fill scenario is suitable at this site. The site is therefore considered suitable for the development as the proposed earthworks will facilitate future development of the site in line with the Indicate Layout Plan and zoning for the site. The proposal is also permissible with consent in the zones applicable to the site.	Based on flood modelling and associated advice from the Department, the proposal is acceptable.
d. Any submissions made in accordance with this Act, or the regulations	The application was notified between 8 November and 6 December 2023. We received 227 submissions. The objections raised are not considered sufficient to warrant refusal of the development application based on the written advice provided by the Department.	Based on flood modelling and associated advice from the Department, proposal is acceptable.
e. The public interest	The proposal is permissible with consent in the zones applicable to the site. The proposal's environmental impacts are considered to be acceptable by the Department, subject to various mitigation measures being carried out as per the proposed deferred commencement conditions of consent. As such, the proposal is suitable for the subject site and in the public interest subject to conditions.	Based on flood modelling and associated advice from the Department the proposal is acceptable.

2 State Environmental Planning Policy (Biodiversity and Conservation) 2021

Summary comment	Complies
Our Natural Areas Section has assessed the application against the relevant provisions. The site includes areas that have Biodiversity Values mapping. The proposed works will impact on the mapped area with potential for serious and irreversible impacts on threatened species or communities. This triggers the requirement for a Biodiversity Development Assessment Report and entry into the Biodiversity Offset Scheme. The applicant was therefore requested to produce this report. The report found that neither of the mapped vegetation zones recorded on the site met the criteria for offsetting as a result of the degraded nature of the vegetation. No ecosystem credits are required to offset the project. Impacts to threatened species habitat requiring offsets include direct impacts on 5.8 hectares of foraging habitat for the Southern Myotis. A total of 1 species credit is required to offset the residual impacts of the project. A vegetation management plan has also been provided that includes methods to improve the biodiversity corridor associated with Eastern Creek. Our natural areas section however requires a new or updated vegetation management plan specific to this earthworks project. This new or updated plan is to be fully costed with a timeline of activities over 5 – 10 years detailing actions proposed to mitigate the impacts of the proposal on fauna and native vegetation, with a focus on the C2 and RE2 zones, the riparian zone and those areas with high biodiversity value. The applicant has not provided this information to date, so it has been included as a condition to ensure the plan is approved prior to issue the Construction Certificate. General terms of approval have also been provided by the Department of Planning and Environment-Water which require the applicant to obtain controlled activity approval for the proposed works.	Yes, subject to conditions

3 State Environmental Planning Policy (Planning Systems) 2021

Summary comment	Complies
The Sydney Central City Planning Panel is the consent authority for all regionally significant development with a capital investment value of over $30 million or Council related or Crown Developments with a capital investment value of over $5 million. As this Development Application has a capital investment value of $83 million, Council is responsible for the assessment of the Development Application and determination of the application is to be made by the Panel.	Yes

4 State Environmental Planning Policy (Precincts - Central River City) 2021

Summary comment
We have assessed the Development Application against the relevant provisions and the table below only identifies where compliance is not fully achieved. It is compliant with all other matters under the State Environmental Planning Policy (Precincts - Central River City) 2021.

4.1 Chapter 3 Sydney Region Growth Centres

Development standard		Complies
3.1: Aims of the Chapter		
(a) to co-ordinate the release of land for residential, employment and other urban development in the North West Growth Centre, (b) to enable the Minister from time to time to designate land in growth centres as ready for release for development, (c) to provide for comprehensive planning for growth centres, (d) to enable the establishment of vibrant, sustainable and liveable neighbourhoods that provide for community well-being and high quality local amenity, (e) to provide controls for the sustainability of land in growth centres that has conservation value, (f) to provide for the orderly and economic provision of infrastructure in and to growth centres, (g) to provide development controls in order to protect the health of the waterways in growth centres, (h) to protect and enhance land with natural and cultural heritage value, (i) to provide land use and development controls that will contribute to the conservation of biodiversity.		Based on flood modelling and the Department's advice, the proposal is consistent with these aims.
3.10 Controls applying to growth centre precincts after finalisation of precinct planning		
Appendix 6 Riverstone West Precinct applies to the site		Noted
3.15 Objectives for development in land use reservation zones		
Environment Conservation Zone (a) to protect and restore areas of special ecological, scientific or aesthetic values, (b) to conserve biological diversity, native vegetation corridors, aboriginal heritage or cultural values of the land, and its scenic qualities. Public Recreation—Regional Zone (a) to enhance, restore and protect the natural and cultural heritage values of the land, (b) to enable the land to be used for regional open space or recreational purposes that are consistent with the protection of	This Precinct also includes: • approximately 76 hectares of land zoned E2 Environmental Conservation including a 58 hectare environmental corridor comprising riparian corridors and native vegetation. • approximately 39 hectares of RE2 Private Recreation land to which this clause doesn't apply. • There is no Public Recreation zone applicable to the site The site includes areas that have Biodiversity Values mapping. The proposed works will impact on the mapped area with potential for serious and irreversible impacts on threatened species or communities. This triggers the requirement for a Biodiversity Development Assessment Report and entry into the Biodiversity Offset Scheme. The applicant was therefore requested to produce this report. The report found that neither of the mapped vegetation zones recorded on the site met the criteria for offsetting as a result of the degraded nature of the vegetation. No ecosystem credits are required to offset the project. Impacts to threatened species habitat requiring offsets include direct impacts on 5.8 hectares of foraging habitat for the Southern Myotis. A total of 1 species credit is required to offset the residual impacts of the project. A vegetation management plan has also been provided that includes methods to improve the biodiversity corridor associated with Eastern Creek. Our natural areas section however requires a new or updated vegetation management plan specific to this earthworks project. This new or updated plan is to be fully costed with a timeline of activities over 5 – 10 years detailing actions proposed to mitigate the impacts of the	Yes, subject to conditions

Development standard		Complies
its natural and cultural heritage values. Public Recreation—Local Zone (a) to enhance, restore and protect the natural and cultural heritage values of the land, (b) to enable the land to be used for public open space or recreational purposes that are consistent with the protection of its natural and cultural heritage values.	proposal on fauna and native vegetation, with a focus on the C2 and RE2 zones, the riparian zone and those areas with high biodiversity value. The applicant has not provided this information to date, so it has been included as a condition to ensure the plan is approved before the issue of a Construction Certificate. Our Greenspace Services has also reviewed the application and has provided conditions of consent that require the submission of an arboricultural impact assessment and tree management plan for all trees within 20m of the edge of the bulk earthworks. Additionally, all trees within the bulk earthworks must also be identified for clarity in the consent for tree removal to be determined before a construction certificate can be issued for the works.	
Part 3.5 Development controls – flood prone and major creek land		
3.27 Development on and near certain land at Riverstone West		
(1) This section applies to the land shown outlined in red on the North West Growth Centre Development Control Map (the relevant area).	This part is applicable to this Development Application.	Noted
(2) Despite any other provision of this Chapter (including any Precinct Plan), the consent authority must not grant consent for development on land in the relevant area unless it is satisfied that the proposed development— (a) will be undertaken in a way that is consistent with the floodplain management strategy in the Riverstone West Precinct Development Control Plan published by the Department in August 2009, and	(a) As outlined in the assessment against the Riverstone West Development Control Pan 2009 below, the proposal is not consistent with the floodplain management strategy in the Riverstone West Precinct Development Control Plan in the absence of a compensatory cut zone for fill to be deposited on the site. Therefore, it is no longer possible to comply with Clause 3.27(2)(a) without formal amendment being made by the Department to the Development Control Plan. The Department's letter advises that balanced cut and fill was never proposed at the time of the original rezoning of this land in 2009 when the site and Lot 11 adjoining the subject land (where the cut zone was proposed) were part of a single project. The Department has also advised that, when the flood modelling was reviewed as part of the SEPP amendment process in 2022, it excluded Lot 11 as it was not required for the civil works to achieve an immaterial impact on off-site flood behaviour. Lot 11 is also no longer included in the Central River City SEPP maps as an area to which Section 3.27 applies. Therefore, based on the Department's advice the variation to the Development Control Plan is considered acceptable. If the variation to this part of the Development Control Plan is supported by the Panel, then this proposal can be deemed consistent with the modified floodplain management strategy.	No, but based on the Department's flood modelling and advice the Panel can consider this proposal to be consistent with the Department's modified SEPP in 2022 and that this takes precedent over the Development Control Plan.

Development standard		Complies
(b) does not materially increase flood levels on properties adjoining the relevant area in events up to the design 100 year recurrence flood, and	The Department's letter of advice to Council states that the flood modelling undertaken between 2020 and 2022 which informed their decision to amend State Environmental Planning Policy (Precincts—Central River City) 2021 (the SEPP) as outlined earlier in the report. According to the Department, this modelling concluded that the civil works proposed will result in an immaterial impact on off-site flood behaviour. This was the Department's reason for making the wording amendment to the SEPP by replacing the words 'any increase of flood levels' with 'any material increase of flood levels'. Relying on the Department's position that the flood modelling done by the applicant indicates that there will be an immaterial impact on off-site flood behaviour from this development, the Panel can consider the proposal acceptable.	Based on the Department's flood modelling and advice, yes.
(c) limits any increases in flood velocities on properties adjoining the relevant area in events up to the design 100 year recurrence flood to minor increases only, and	As above	Based on the Department's flood modelling and advice, yes.
(d) is not likely to result in adverse flood impacts on properties adjoining the relevant area (including during any construction stage of the proposed development).	As above	Based on the Department's flood modelling and advice, yes.
(3) This section does not apply to development that the consent authority is satisfied is minor and will not result in unacceptable adverse flood impacts on properties adjoining the relevant area.	Noted	Based on the Department's flood modelling and advice, yes.
Part 3.6 Development controls – vegetation		
3.30 Consent for clearing native vegetation (1) A person must not clear native vegetation on land to which this Part applies without—	The majority of the site is bio-certified. The site does however include areas that have Biodiversity Values mapping. The proposed works will impact on the mapped area with potential for serious and irreversible impacts on threatened species or communities. This triggers the requirement for a Biodiversity Development Assessment Report and entry into the Biodiversity Offset Scheme. The applicant was therefore requested to produce this report.	Yes, subject to conditions

Development standard		Complies
(a) approval under Part 3A of the Act, or (b) development consent. For the purposes of this section, clearing native vegetation has the same meaning as it has in the Native Vegetation Act 2003. Note— A consent of the relevant consent authority required under this section for the clearing of native vegetation is in addition to any development consent required or granted by the Minister for Natural Resources under the Native Vegetation Act 2003 in respect of that clearing. (2) Development consent under this section is not to be granted unless the consent authority is satisfied of the following in relation to the disturbance of bushland caused by the clearing of the vegetation— (a) that there is no reasonable alternative available to the disturbance of the bushland, (b) that as little bushland as possible will be disturbed, (c) that the disturbance of the bushland will not increase salinity, (d) that bushland disturbed for the purposes of construction will be re-instated where possible on completion of construction,	The applicant's report found that neither of the mapped vegetation zones recorded on the site met the criteria for offsetting as a result of the degraded nature of the vegetation. No ecosystem credits are required to offset the project. Impacts to threatened species habitat requiring offsets include direct impacts on 5.8 hectares of foraging habitat for the Southern Myotis. A total of 1 species credit is required to offset the residual impacts of the project. A vegetation management plan has also been provided that includes methods to improve the biodiversity corridor associated with Eastern Creek. Our Natural Areas Team however requires a new or updated vegetation management plan specific to this earthworks project. This new or updated plan is to be fully costed with a timeline of activities over 5 – 10 years detailing actions proposed to mitigate the impacts of the proposal to fauna and native vegetation, with a focus on the C2 and RE2 zones, the riparian zone and those areas with high biodiversity value. The applicant has not provided this information to date, so it has been included as a condition to ensure the plan is approved prior to issue the Construction Certificate. Our Greenspace Services Team has also reviewed the application and has provided conditions of consent that require the submission of an arboricultural impact assessment and tree management plan for all trees within 20m of the edge of the bulk earthworks. Additionally, all trees within the bulk earthworks must also be identified for clarity in the consent for tree removal to be determined before a construction certificate can be issued for the works.	

Development standard		Complies
(e) that the loss of remnant bushland caused by the disturbance will be compensated by revegetation on or near the land to avoid any net loss of remnant bushland, (f) that no more than 0.5 hectare of bushland will be cleared unless the clearing is essential for a previously permitted use of the land. (3) The consent authority must, when determining a development application in respect of the clearing of native vegetation on land within a zone under Part 3, have regard to the objectives for development in that zone. (4) This section does not apply to or in respect of action required or authorised to be done by or under the Electricity Supply Act 1995, the Roads Act 1993, the Sydney Water Act 1994 or the Surveying Act 2002.		
Controls within Appendix 6 – Riverstone West Precinct Plan		
1.2 Aims of Precinct Plan (a) to make development controls for land in the Riverstone West Precinct within the North West Growth Centre that will ensure the creation of quality environments and	The proposed development will facilitate the future redevelopment of the Precinct . Mitigation measures are proposed to protect the natural and heritage elements of the Precinct. Standard conditions have been imposed to ensure these elements are protected during the course of bulk earthworks.	Yes, subject to conditions

Development standard		Complies
good design Outcomes, (b) to protect and enhance the environmentally sensitive natural areas in, and the cultural heritage of, the Precinct, (c) to provide for recreational opportunities within the Precinct, (d) to provide for innovative development in the Precinct that encourages employment and economic growth, (e) to provide for the sustainable development of the Precinct, (f) to promote pedestrian and vehicle connectivity with adjoining Precincts and localities and within the Precinct.		
1.9A Suspension of covenants, agreements and instruments For the purpose of enabling development on land within any zone to be carried out in accordance with this Precinct Plan or with a consent granted under the Act, any Agreement, covenant or other similar instrument that restricts the carrying out of that development does not apply to the extent necessary to serve that purpose.	The Precinct is affected by a number of easements and restrictions, particularly through and adjacent to the site. The relevant benefitting parties have all notified of the development application. All have provided comments or conditions of consent that have been annexed to the conditions of consent.	Yes, subject to conditions
Part 2 Permitted or prohibited development		
2.3		

Development standard		Complies
Zone objectives and land use table		
2.6A Demolition	Demolition has been applied for in this application	Yes
Part 4 Principal development standards		
4.1 Minimum subdivision lot size	N/A will be subject of future DAs	N/A
4.3 Height of buildings	N/A will be subject of future DAs	N/A
4.4 Floor space ratio	N/A will be subject of future DAs	N/A
4.5 Calculation of floor space ratio and site area	N/A will be subject of future DAs	N/A
4.5A Shops—maximum gross floor area	N/A will be subject of future DAs	N/A
4.6 Exceptions to development standards	N/A will be subject of future DAs	N/A
Part 5 Miscellaneous provisions		
Cl. 5.9 Preservation of trees or vegetation The objective of this section is to preserve the amenity of the area through the preservation of trees and other vegetation.	As per Natural Areas and Greenspace Services requirements	Yes, subject to conditions
Part 6 Additional local provisions		
6.1 Public utility infrastructure The consent authority must not grant development consent to development on land to which this Precinct Plan applies unless it is satisfied	Will be conditioned in future DAs for built form	Yes

Development standard		Complies
that any public utility infrastructure that is essential for the proposed development is available or that adequate arrangements have been made to make that infrastructure available when required.		
6.2 **Development in Zone E2 Environmental Conservation** Despite any other provision of this Precinct Plan, the consent authority must not grant development consent for development on land to which this section applies unless it has considered a vegetation management plan that relates to all of that land.	As per Natural Areas and Greenspace Services requirements	Yes, subject to conditions
6.6 **Development controls – existing native vegetation** This section applies to land within an existing native vegetation area as shown on the Native Vegetation Protection Map.	As per Natural Areas and Greenspace Services requirements	Yes, subject to conditions
6.7 **Development controls – native vegetation retention areas** This section applies to land within a native vegetation retention area as shown on the Native Vegetation Protection Map.	As per Natural Areas and Greenspace Services requirements	Yes, subject to conditions

5 State Environmental Planning Policy (Resilience and Hazards) 2021

Summary comment	Complies
Clause 4.6 of this policy requires a consent authority to consider whether the land is contaminated and if it is suitable or can be remediated to be made suitable for the proposed development, prior to the granting of development consent. Contamination assessments have been previously undertaken for the Precinct including: • Contamination Assessment & Remedial Action Plan Riverstone West Precinct, Riverstone, NSW Stage 1 Earthworks Prepared for Riverstone Parade Pty Ltd, 26 September 2013, Consulting Earth Scientists Pty Ltd • Contamination Assessment & Remedial Action Plan Riverstone West Precinct, Riverstone, NSW Stage 2 Earthworks Prepared for Riverstone Parade Pty Ltd rev 1, 8 April 2014, Consulting Earth Scientists Further environmental assessments have since been completed which addressed areas of potential contamination not addressed in the above assessments. The application is accompanied by an assessment of current applicability of historical environmental site assessments by JBS&G Australia Pty Ltd dated 17 April 2023. The JBS&G assessment lists the additional assessments undertaken and reviews the current site contamination status with respect to determining whether the scope, conclusions and recommendations of the above assessments are still applicable to the site. It also includes the assessment of illegally dumped materials at the north east of the site which were found to be impacted by heavy metals, Polycyclic aromatic hydrocarbons and asbestos. This contamination has been capped and contained in the north east of the site. A validation report accompanies the application which validates that the previous asbestos hazard identified on the site is now retained. Accordingly, this contamination has been addressed and will be managed into the future through an Asbestos Management Plan which also accompanies the application. As such, there is no requirement for further contamination assessment at this portion of the site and JSB&G state that the maintenance works to address the contamination identified is still relevant and applicable to the site. Notwithstanding this, 2 audits of asbestos retention works prepared by JBS&G dated 7 November 2022 and 11 October 2023 also accompany the application. They audit the current status of the asbestos containment effectiveness consistent with an annual inspection / audit requirement. The audits confirm that site controls continue to be effective to cause the retention of the asbestos hazard. On this basis, JSB&G consider there should be no requirement to undertake additional intrusive site environmental assessment works for the purposes of updating the characterisation of site contamination as presented in 2013 and 2014 reports above, the findings of which are still considered by JSB&G to be relevant and applicable to the Site. JSB&G have also provided a follow up letter dated 9 September 2024 that confirms the site is still suitable from a contamination perspective to be used for a commercial and industrial purposes. Notwithstanding this, our Environmental Health Section have assessed the application and supporting documents and have provided conditions of consent that require the submission of the following information prior to commencement of works: • an interim letter of advice at the completion of each stage of the development • a final site audit statement at the completion of all stages which covers the area of each stage of works • a Long-Term Environmental Management Plan for the ongoing protection, maintenance and management of the asbestos containment cell. It is required to be attached to the final site audit statement • the location of the cell is to be registered on the Deposited Plan and as a restriction on the title of the land	Yes, subject to conditions

6 State Environmental Planning Policy (Transport and Infrastructure) 2021

Summary comment	Complies
The State Environmental Planning Policy ensures that Transport for NSW is given the opportunity to comment on development nominated as 'traffic generating development' under Schedule 3 of the State Environmental Planning Policy. Whilst the development is not traffic generating development under Schedule 3, concurrence is still required from Transport for NSW under section 138 of the Roads Act, 1993 as the applicant proposes construction of a new access point for the haul road off Garfield Road West which is a classified road. Transport for NSW has provided concurrence for the application, subject to conditions and the following works being implemented in Garfield Road West: • the existing driveway off Garfield Road West being upgraded and designed to ensure left in and left out truck movements only. The left out will only be permitted to be used for the existing storage yard that is not associated with the current application which must only use Bandon Road for egress • a deceleration lane being installed on Garfield Road West leading to the upgraded driveway from a westerly direction indented along the frontage of this site.	Yes, subject to conditions

7 Central City District Plan 2018

Summary comment	Complies
While the Act does not require consideration of District Plans in the assessment of development applications, the Development Application is consistent with the following overarching planning priorities of the Central City District Plan: **Liveability** • Improving access to jobs and services • Contributing to the provision of services to meet communities' changing needs.	Yes

8 Blacktown Local Strategic Planning Statement

Summary comment	Complies
The Blacktown Local Strategic Planning Statement outlines a planning vision for the City over the next 20 years to 2041. The Blacktown Local Strategic Planning Statement contains 18 Local Planning Priorities based on themes of Infrastructure and collaboration, Liveability, Productivity, Sustainability and Implementation. The Development Application is consistent with the following priorities: • Productivity	Yes

9 Blacktown Local Environmental Plan 2015

Summary comment	Complies
As per the Department's advice, we need to consider Clause 5.21 of Blacktown Local Environmental Plan 2015 against the proposed development. The following table outlines the proposal's compliance with Clause 5.21.	No, but the Department considers this variation to be acceptable

Summary comment	Complies
	based on their flood modelling and recent letter dated 27 August 2024

Control	Comment
5.21 Flood planning (1) The objectives of this clause are as follows:	
(a) to minimise the flood risk to life and property associated with the use of land,	(a) The Department of Planning, Housing and Infrastructure (the Department) provided their written advice in a letter on 27 August 2024. This letter states that the flood modelling undertaken between 2020 and 2022 which informed their decision to amend State Environmental Planning Policy (Precincts—Central River City) 2021 (the SEPP) indicated that the civil works proposed in this application will result in an immaterial impact on off-site flood behaviour. This was the Department's intent when wording the amendment in the SEPP and replacing the words ‘any increase of flood levels’ with ‘any "material" increase of flood levels’. We therefore defer to the Department’s advice to satisfy this objective.
(b) to allow development on land that is compatible with the flood function and behaviour on the land, taking into account projected changes as a result of climate change,	(b) The Department's advice in their letter to Council states that their independent flood modelling undertaken between 2020 and 2022 which informed their decision to amend State Environmental Planning Policy (Precincts—Central River City) 2021 (the SEPP) indicated that the civil works proposed will have an immaterial impact on off-site flood behaviour. The flood study and associated modelling however do not address changes to flood behaviour as a result of climate change. The result of climate change is not considered applicable to bulk earthworks, as under the DCP the minimum fill level needs to align with the prevailing flood planning levels. It may however impact on future built form development applications where finished floor levels will be determined by the applicable flood studies and flood planning level. The current applicable flood study is the Hawkesbury-Nepean River Flood Study 2024, produced by the NSW Reconstruction Authority. It assesses the potential impacts of climate change on flooding.
(c) to avoid adverse or cumulative impacts on flood behaviour and the environment,	(c) We note here that the Department’s view is that the cut and fill strategy associated with the 2009 rezoning of the precinct: • was not based on an equalisation of cut and fill volumes • allowed for a net loss of floodplain storage capacity. We also note the Department’s view that the final scenario underpinning the rezoning did not provide for balanced cut and fill volumes on land below the

	Hawkesbury-Nepean Valley 1 in 100 year flood level, and that this allowed for a net loss of floodplain storage capacity. We therefore defer to the Department's flood modelling and advice to satisfy this objective.
(d) to enable the safe occupation and efficient evacuation of people in the event of a flood.	(d) The application is accompanied by a Flood Emergency Response Plan which provides evacuation principles and routes for the proposed development. These will ensure people can safely occupy the land and evacuate in the event of a flood. Our traffic and engineering experts as well as Sydney Trains and Transport for NSW have all assessed the application and found it satisfactory, subject to conditions. Therefore, this objective is met.
(2) Development consent must not be granted to development on land the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development:	
(a) is compatible with the flood function and behaviour on the land, and	(a) The Department's states in their letter that the flood modelling undertaken between 2020 and 2022 which informed their decision to amend State Environmental Planning Policy (Precincts—Central River City) 2021 indicates that the civil works proposed will achieve an immaterial impact on off-site flood behaviour. We therefore defer to the Department's flood modelling and advice that this application can comply with this requirement.
(b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and	(b) The proposal is to develop the land based on cut and fill profiling which the Department has confirmed will have an immaterial impact on off-site flood behaviour. We defer to the Department's flood modelling and advice which indicates that the application can comply with this requirement.
(c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and	(c) The application is accompanied by a Flood Emergency Response Plan which provides evacuation principles and routes for the proposed development. These will ensure people can safely occupy the land and evacuate in the event of a flood. Sydney Trains and Transport for NSW have assessed the application and found it satisfactory, subject to conditions. Therefore, the development complies with this requirement.
(d) incorporates appropriate measures to manage risk to life in the event of a flood, and	(d) The application is accompanied by a Flood Emergency Response Plan which provides evacuation principles and routes for the proposed development. These will ensure people can safely occupy the land and evacuate in the event of a flood. Sydney Trains and Transport for NSW have assessed the application and found it satisfactory, subject to conditions. Therefore, the development complies with this requirement.
(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of	(e) The stormwater strategy for the development includes drainage swales and sediment basins along the periphery of the earthworks pads to not

riparian vegetation or a reduction in the stability of river banks or watercourses.	affect the riparian corridor. Sediment and erosion control measures are also to be implemented such as: • sediment fencing downstream of disturbed areas, • dust control measures, • placement of hay bales or mesh and gravel inlet filters around and along • proposed catch drains and around stormwater inlet pits • stabilised site access at the construction vehicle entry/exits to avoid sediment spreading onto the surrounding road network. Any stockpiled material, including topsoil, will be located as far away as possible from any associated watercourses or temporary overland flow paths. Sediment fences will be installed on the downstream side of stockpiles and any embankment formation. All stockpiles and embankment formations will be stabilised by hydroseeding or hydro mulching on formation. The applicant also has to do a Vegetation Management Plan to protect the riparian corridor along the creek. Therefore, the development can be made to comply with this requirement, subject to conditions.
(3) In deciding whether to grant development consent on land to which this clause applies, the consent authority must consider the following matters:	
(a) the impact of the development on projected changes to flood behaviour as a result of climate change,	(a) the applicant's and the Department's flood study and associated modelling do not address changes to flood behaviour as a result of climate change. This is not considered applicable to bulk earthworks, as under the DCP the minimum fill level only needs to align with existing climate flood levels. It will however impact on future built form development applications where finished floor levels will be determined by the most recent flood studies. The Hawkesbury-Nepean River Flood Study 2024 produced by the NSW Reconstruction Authority assesses the potential impacts of climate change on flooding. This report will place the minimum floor level for buildings at 18.5m Australian Height Datum versus the earthworks pad levels at minimum 17.3m Australian Height Datum to be above the 1 in 100 year flood levels. If the earthworks levels as proposed were to increase to reduce this height difference of 1.2m, it could lead to material impacts on flood behaviour on adjoining land that have not yet been modelled. Therefore, future built form applications will need to address this level difference.
(b) the intended design and scale of buildings resulting from the development,	(b) Not applicable as this application does not include built form. Buildings will be assessed in future development applications

(c) whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,	(c) The application is accompanied by a Flood Emergency Response Plan which provides evacuation principles and routes for the proposed development. These will ensure people can safely occupy the land and evacuate in the event of a flood. Sydney Trains and Transport for NSW have assessed the application and found it satisfactory, subject to conditions. Therefore, the development complies with this control, subject to conditions.
(d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.	(d) Not applicable as built form will be addressed in future development applications
(4) A word or expression used in this clause has the same meaning as it has in the Considering Flooding in Land Use Planning Guideline unless it is otherwise defined in this clause.	Noted
(5) In this clause— Considering Flooding in Land Use Planning Guideline means the Considering Flooding in Land Use Planning Guideline published on the Department's website on 14 July 2021. flood planning area has the same meaning as it has in the Flood Risk Management Manual. Flood Risk Management Manual means the Flood Risk Management Manual, ISBN 978-1-923076-17-4, published by the NSW Government in June 2023.	Noted

10 Riverstone West Precinct Development Control Plan 2009

Summary comment
We have assessed the Development Application against the relevant provisions and the table below outlines compliance or non-compliance with these planning controls.

DCP requirement		**Proposal**	**Complies**
Part 1.0 Introduction			
1.7.1 Development Application Process	As per Figure 2	Noted	Noted
1.7.2 Variations to Development Controls	Council may grant consent to a proposal that does not comply with the controls, providing the intent of the controls is achieved. Where a variation is sought it must be justified in writing indicating how the development will meet the intention of the objectives of the relevant control and/or is generally consistent with the ILP.	The Sydney Central City Planning Panel (SCCPP) is the determination authority for this application. So, the SCCPP may grant consent to this proposal that does not strictly comply with the controls taking into consideration the written advice from the Department who wrote the controls and have now provided their interpretation of the controls and	No, but based on the Department's flood modelling and advice the variation is considered acceptable.

Summary comment			
		the variations they are prepared to support. The applicant seeks a variation is to be approved to Clause 4.2 of the Riverstone West Precinct Development Control Plan 2009 relating to cut and fill controls. The applicant justifies the variation in the Statement of Environmental Effects that accompanies the application which outlines how each of the objectives of Clause 4.2 are met. This complies with the control. Subclause 2 in Clause 4.2 requires earthworks at the site to achieve a balance between cut and fill in accordance with the floodplain management strategy in Appendix C of the Development Control Plan. Figure C1 and C2 in Appendix C identify Lot 11 DP816720 (which is immediately to the west of the site) to be used as a compensatory cut zone for fill deposited on the site. The current proposal however does not propose any compensatory cut zone on Lot 11 and excludes it from the development entirely. The Department's response to this is that balanced cut and fill was never proposed at the time of the original rezoning of this land in 2009 when the site and Lot 11 were part of a single project. The Department has also advised that, when the flood modelling was reviewed as part of the SEPP amendment process in 2022, it also excluded Lot 11 as it was not required for the civil works to achieve an immaterial impact on off-site flood behaviour. Lot 11 is also no longer included in the Central River City SEPP maps as an area to which Section 3.27 applies which was another reason for the SEPP amendment by the Department. Given the history and unique circumstances of the proposal, the Department believes that the nature of the proposed cut and fill is site specific and will not set an undesirable precedent on other sites/applications regarding the capacity of the floodplain or the	

Summary comment			
		direction of flows on other properties. On the basis of the Department's advice the Panel could support a variation to the balanced cut and fill requirement in DCP.	
	Similarly, Council may grant consent to a proposal that varies from the Indicative Layout Plan (ILP), where the variation is considered to be minor and the proposal remains generally consistent with the ILP. As such, each DA will be considered on its merits. Where variation from the Riverstone West ILP is proposed, the applicant is to demonstrate that the proposed development is consistent with the vision and development objectives for the Precinct set out in Section 2 and the objectives and controls in Sections 3, 4, 5 and 6 and the Growth Centres SEPP Amendment (Riverstone West Precinct) 2009.	The proposal does not include any road works and so does not change the road pattern in the Indicative Layout Plan.	N/A
1.7.3 Lodgement Requirements	As per Table 2 Matrix	The application was lodged successfully	Yes
Part 2.0 Riverstone West Precinct			
2.1 Vision	To create an attractive employment precinct that provides for a diverse range of job opportunities to support the growing residential areas in Sydney's North West.	This proposal is only a site preparation application. Future applications will facilitate the built form.	Yes
2.2 Development Objectives	1) maximise employment opportunities within Riverstone West for the local and regional communities	1) The proposed development is the starting point that will facilitate future commercial, industrial and light industrial land uses at the site that will in turn provide employment opportunities in line with the objectives of the Precinct plan.	Yes, subject to conditions
	2) ensure development does not cause any offsite flood impacts that are unacceptable to Council	2) The Department advised Council in its letter that this proposal will have an immaterial impact on the surrounding development	Based on the Department's flood modelling and advice, yes
	3) integrate water cycle management and development	3) Engineering have confirmed that this is to be addressed in future	N/A

Summary comment			
	such that the developable area is maximised whilst potential impacts of the development on the water cycle and in particular the receiving waters of Eastern Creek are minimised	development applications for the site	
	4) create distinct employment areas based on employment types such as industrial, light industrial and commercial	4) The earthworks which will facilitate the employment areas by creating the building pads	Yes
	5) maximise employment uses around Riverstone and Vineyard Stations	5) The proposal will facilitate future development applications	Yes
	6) facilitate development that complements and supports the existing Riverstone town centre	6) The proposal will facilitate future development of the site	Yes
	7) contribute to employment targets set out by the Department of Planning	7) Jobs will be created during earthworks activities but the main employment opportunities will come from future industrial land uses	Yes
	8) provide a road system that relieves heavy vehicle traffic movement around Riverstone town centre and Garfield Road	8) Subject to future development applications where new road links will be proposed	N/A
	9) provide a sustainable development that minimises its impacts on surrounding areas	9) The Department has informed Council that this proposal will have a minimal impact on the surrounding area.	Based on the Department's flood modelling and advice, yes
	5) ensure development is economically viable	5) Subject to future development applications	N/A
	6) provide efficient access to public transport	6) Subject to future development applications, but already accessible to 2 trains stations	N/A
	7) provide for services that support the daily needs of the workforce	7) Subject to future development applications	N/A
	8) mitigate odour impacts from the Sydney Water Corporation Sewerage Treatment Plant through landscape design, building layout design and the location of land uses	8) Subject to future development applications	N/A
	9) recognise the heritage significance of No. 4 Garfield Road (the former Butcher Shop)	9) already recognised in the Heritage Interpretation Strategy but will need to be mentioned in the updated Conservation	Yes, subject to deferred commencement conditions

Summary comment			
		Management Plan also as included in the draft conditions	
	10) create linkages between Riverstone West and Riverstone town centre and adjoining urban areas	10) Subject to future development applications	N/A
	11) address potential impacts of climate change on the development	11) This is not considered applicable to bulk earthworks, as under the DCP the minimum fill level only needs to align with existing climate flood levels.	N/A
	12) protect and enhance riparian corridors identified in the Riverstone West ILP	12) as per the requirements of Natural Areas and Greenspace Services	Yes, subject to conditions
	13) protect and enhance existing and future biodiversity values across the site.	13) as per the requirements of Natural Areas and Greenspace Services	Yes, subject to conditions
2.3 Indicative Layout Plan	1) All development is to be undertaken generally in accordance with the ILP at Figure 5 subject to compliance with the objectives and development controls set out in this DCP. 2) Where variation from the ILP is proposed, the applicant is to demonstrate that the proposed development is consistent with the vision and development objectives for the Precinct set out in Section 2 and the objectives and controls in Sections 3, 4, 5 and 6 of this DCP.	The proposed earthworks will only facilitate future development. The earthworks generally follow the alignment of the zonings shown in Figure 5. No road works are proposed in this application	N/A
Part 3.0 OVERALL FRAMEWORK			
3.1	Street Network and Design	To be addressed in future DAs	N/A
3.2	Block Layout	To be addressed in future DAs	N/A
3.3	Public transport	To be addressed in future DAs	N/A
3.4	Pedestrian and Cycle Network	To be addressed in future DAs	N/A
3.5	Open Space and Public Domain Works	To be addressed in future DAs	N/A

Part 4.0 – Environmental Management

DCP requirement		Proposal	Complies
4.1 Energy			
1	DAs are required to demonstrate consideration of: a) utilising recycled materials and renewable building resources b) promoting biological diversity through appropriate retention, planting and maintenance of endemic flora of the area c) implementing a waste management strategy that promotes the overall reduction of waste levels while promoting the achievement of the 60 per cent waste reduction target for NSW d) implementing energy conservation measures that include reducing energy consumption and increasing inherent energy efficiency through design and materials selection, and adopting energy management plans.	This DA is for earthworks. Energy efficiency is a matter for future DAs.	N/A
2	DAs are required to demonstrate that consideration has been given to promoting ecologically sustainable transport by complementing and reinforcing the development and use of the existing and planned integrated public transport, pedestrian and cycling networks servicing the site.	This DA is for earthworks. Energy efficiency is a matter for future DAs.	N/A
3	Consideration should be given to the feasibility of any measures to substitute grid-source power with environmentally sustainable alternatives such as tri-generation (green transformers), cogeneration (recovery of waste energy) or photovoltaics.	This DA is for earthworks. Energy efficiency is a matter for future DAs.	N/A
4.2 Cut and Fill			
Objectives			
1	Provide a landform that is capable of supporting a range of business and industrial uses	The primary intended outcome of the proposed development is to facilitate the realisation of the business park and industrial development that was envisaged when this Precinct was rezoned in 2009	Yes

DCP requirement		Proposal	Complies
2	Minimise the impact of earthworks on stormwater, salinity and groundwater	Our engineers are satisfied with the stormwater arrangements. Conditions of consent have been imposed to provide groundwater and salinity reports at the appropriate stages of the development	Yes, subject to conditions
3	Ensure that the extent of cut and fill required for large scale development does not detract from the appearance and design of the development	The Department have confirmed the extent of cut and fill proposed has been designed to be consistent with that which was subject to extensive modelling as part of the recent Central River City SEPP amendment review and found to be acceptable	Based on the Department's flood modelling and advice, yes
4	Ensure that development is capable of visual integration with the surrounding environment	The development footprint aligns with the ILP and as such provides a basis for future development to visually integrate with the surrounding development as planned.	Yes
5	Ensure that any imported fill material to a site is clean and complies with the contamination and salinity provisions of this section	Several conditions of consent have been imposed to ensure that only clean fill is imported that is free of contamination. Each stage of works will require a post earthworks salinity report	Yes, subject to conditions
6	Ensure land is appropriately stabilised and retained	Conditions of consent have been imposed that require compaction certificates to be prepared by qualified practising registered engineer. There are also many sediment and erosion control measures proposed which are reinforced with conditions of consent.	Yes, subject to conditions
7	Ensure that the extent of cut and fill does not encroach within, or adversely affect the function, integrity and stability of any open space west of the Spine Road	The Spine Road is not proposed in this application. Notwithstanding this, the proposed development has been designed so that the construction of the temporary haul road is positioned close to the final Spine Road alignment without overlapping it Conditions of consent have been imposed requiring a vegetation management plan to be provided prior to earthworks commencing that deals specifically with conservation and rehabilitation of the C2 and RE2 zones	

DCP requirement		Proposal	Complies
8	Minimise the need to cut and fill at the subdivision phase of development	The Department have confirmed the proposed cut and fill profile has been designed to be consistent with that which was subject to extensive modelling as part of the recent Central River City SEPP amendment review and found to be acceptable	Based on the Department's flood modelling and advice, yes
9	Ensure accessibility where necessary	Not considered necessary	Yes
10	Manage flooding impacts in accordance with the requirements of the Growth Centres SEPP Amendment (Riverstone West Precinct) 2009	We defer to the Department's advice on flooding	Based on the Department's flood modelling and advice, yes
11	Ensure that any cut and fill does not adversely affect the conservation and rehabilitation of the riparian corridors.	This will be managed through the VMP to be provided as a deferred commencement condition	Yes, subject to deferred commencement conditions
Controls			
1	A Cut and Fill Plan must be prepared in accordance with Table 4 in Section 1.7.3.	A cut and fill plan was provided by engineering firm J. Wyndham Prince on behalf of the applicant	Yes, submitted
2	Earthworks within the Subject Land (as shown in Figure C1 of Appendix C Floodplain Management Strategy of this DCP) are to be undertaken to achieve a balance between cut and fill in accordance with the Floodplain Management Strategy (FMS) described in Appendix C of this DCP. The FMS will confirm the final Cut and Fill Plan, which will be based on the Preliminary Cut and Fill diagram shown as Figure C2 of Appendix C.	See 1.7.2 above. Figure C1 and C2 in Appendix C of the Riverstone West DCP identies Lot 11 DP816720 (which is immediately to the west of the site) to be used as a compensatory cut zone for fill deposited on the site. However, the current proposal does not propose any compensatory cut zone on Lot 11 and excludes Lot 11 from the development site entirely. The Department says in its advice to Council that balanced cut and fill was never proposed at the time of the original rezoning of this land in 2009 when the site and Lot 11 were part of a single project. The Department has also states that, when the flood modelling was reviewed as part of the SEPP amendment process in 2022, it also excluded Lot 11 as it was not required for the civil works to achieve an immaterial impact on off-site flood behaviour. The Department in the 2022 SEPP	Variation required, but considered acceptable based on the Department's flood modelling and advice

DCP requirement		Proposal	Complies
		amendment also removed reference to Lot 11 from the Central River City SEPP maps as an area to which Section 3.27 applies which was another reason for the SEPP amendment by the Department. Given the history and unique circumstances of the proposal, the Department states that the nature of the proposed cut and fill is site specific and will not set an undesirable precedent on other sites/applications regarding the capacity of the floodplain or on the direction of flows on other properties. Based on the Department's clear position on this matter, a variation to this DCP control is fully reliant on their advice	
3	The finished earthworks levels are to be generally in accordance with the Preliminary Cut and Fill contours shown in Figure C3 of Appendix C. The FMS will confirm the final cut and fill levels.	As above, the cut and fill earthworks proposed is based on the Department's position and subject to conditions	Yes, subject to conditions.
4	Fill material borrowed from the Subject land is to be managed and sorted to ensure that materials with the least plasticity are used in the lower layers of fill and granular material are used in upper layer(s). Landfilled areas must be suitability compacted and stabilised with density tests to verify that compaction was achieved in accordance with Blacktown City Council requirements.	This proposal is not relying on Lot 11 anymore. All fill material will either be by way of cut on the subject land only or imported from external sources.	No, but still subject to conditions
5	Any imported fill shall comply with AS3798 (2007) and the physical property and contamination acceptance criteria to be specified in the contract documents. All landfilled areas must comprise clean material free from contamination (imported material shall be certified “Virgin Excavated Natural Material (VENM”)	This proposal will require the importation of 3.9 million m^3 of fill from external sources.	Yes, subject to conditions
6	Particle sizes should not exceed 150 millimetres generally and should be less than 75 millimetres for the top one metre of any fill.	Sources of fill won't be known until works begin.	Yes, subject to conditions

DCP requirement		Proposal	Complies
7	Fill should be placed in layers not greater than 200 millimetres loose. Testing for each lift is to be undertaken in accordance with AS1289 (2001) by A NATA registered laboratory to confirm the required compaction and moisture content has been achieved.	The bulk easrthworks will have to meet the required compaction requirements if it is to be used for future land uses.	Yes, subject to conditions
8	Earthworks associated with filling within the Precinct may be undertaken in accordance with the Staging Plan as required in Appendix C. DAs are to be lodged for each stage of the earthworks, and shall be supported by documentation that demonstrates conformance to the requirements of Appendix C.	5 stages of earthworks proposed and shown on the plans. Therefore, this proposal complies with the requirements of Appendix C with regards to the preparation of a staging plan.	Yes
9	A deviation from the Staging Plan developed through the Floodplain Management Strategy, for example if a requirement to reduce the compensatory cut to protect existing streams following classification of streams traversing Lot 11, will need to demonstrate compliance with the Growth Centres SEPP Amendment (Riverstone West Precinct) 2009.	A modified Floodplain Management Strategy prepared by Advisian for the applicant reflects a proposed cut and fill profile without Lot 11 in it because Lot 11 is no longer included in the Central River City SEPP maps as an area to which Section 3.27 applies. The modelling done for the Central River City SEPP amendment for the Department assumed the profile adopted by the applicant's varied Flood management Strategy. This is confirmed in the letter of advice from the Department. See comments in the Central River City SEPP section above.	Yes, based on the Department's flood modelling and advice
10	The Staging Plan in the Floodplain Management Strategy must be updated if there is a deviation from the most recent staging plan in Appendix C.	As above	Yes, complies with the Department's flood modelling and advice
11	Minimum cut and fill levels must comply with Figure 20. The slope between the designated levels shall be a maximum three per cent.	Our engineers have assessed the civil plans and these are considered satisfactory, subject to conditions	Yes, complies with the Department's flood modelling and advice
12	All cut and fill works shall be in accordance with Council's Engineering Guide of Development (2005) and Works Specification – Civil 2005.	Our engineers have assessed the civil plans and these are considered satisfactory, subject to conditions	Yes, complies with the Department's flood modelling and advice

DCP requirement		Proposal	Complies
13	Embankment batters shall be located in accordance with Figure 21.	Our engineers have assessed the civil plans and these are considered satisfactory, subject to conditions	Yes, complies with the Department's flood modelling and advice
14	Embankment batters shall comply with Table 7 and Figures 22 to 25 ie. Embankment batters from property boundary 6m:1m (length to height ratio) and 4m:1m (length to height ratio) in areas indicated in Figure 22. Maximum height of retaining wall elements of 3m Terraced fill less than 3m 1.8m:0.9m (minimum length to maximum height ratio) as shown in Figure 24. Terraced fill greater than 3m 1.5m:3m (length to height ratio) as shown in Figure 25.	Our engineers have assessed the civil plans and these are considered satisfactory, subject to conditions	Yes, complies with the Department's flood modelling and advice
15	Embankment batters and retaining walls are to be landscaped to reduce erosion and provide a suitable screen. They should be vegetated with a diversity of local native ground covers, shrubs and small native trees with mature height of up to 10 metres.	Landscaping the embankments is not proposed at this stage as the vegetation will have to be removed when retaining walls replace the battering in the future development applications. Erosion and sediment control measures are proposed anyway. Our engineers have assessed these measures as satisfactory and standard conditions have been imposed to control erosion.	Yes, subject to conditions
16	Proposed cut and fill activities should not impact the structural integrity of the existing concrete bridge over Eastern Creek unless the existing bridge is being replaced.	No works are proposed within the vicinity that will impact the structural integrity of the concrete bridge crossing Eastern Creek.	Yes
17	Any imported fill must be certified in accordance with the NSW State Government requirements/guidelines to verify that the material is suitable for its intended use. Evidence of this certification must be provided to Council.	Imported fill will have to be certified by a suitably qualified environmental consultant as suitable for industrial use.	Yes, subject to conditions
4.3 Integrated Water Cycle Management			

DCP requirement		Proposal	Complies
4.3.1 General			
1	An Integrated Water Cycle Management Report must be prepared in accordance with Table 4 in Section 1.7.3 of this DCP.	Engineering have confirmed this is not required for bulk earthworks (D24/575656)	N/A
2	The procedures used to demonstrate compliance with the following development controls shall be in accordance with the procedures outlined for developing the Floodplain Management Strategy (Appendix C) and the Integrated Water Cycle Management Strategy (Appendix D);	The Department's advice confirms that the proposal complies with the varied Flood Management Strategy	Yes, based on the Department's flood modelling and advice and subject to conditions
3	All subdivision and development applications must comply with: a) Blacktown City Council Engineering Guide for Development 2005 b) Blacktown City Council Works Specification – Civil 2005	The proposal will meet the engineering guide, subject to conditions	Yes, subject to conditions
4	The development must limit as far as practicable any changes in flow rate and flow duration within the receiving waterways as a result of the development.	The flow rates have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
5	Impervious areas directly connected to the stormwater system shall be minimised. Runoff from impervious areas such as roofs, driveways and rainwater tank overflows shall be directed onto grassed and other landscaped areas designed to accept such flows.	This is just a bulk earthworks application. No buildings works are proposed	N/A
6	Structural stormwater treatment measures must be able to bypass flows in excess of the design discharge with negligible afflux resulting from overtopping or blockage of the device.	The proposed stormwater management measures have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
7	Prior to the issue of any type of a Subdivision Certificate, Occupation Certificate or upon completion of works the relevant Certificate and Plans must be lodged in accordance with the Blacktown City Council Engineering Guide for Development 2005.	The applicant will have to submit the relevant Certificate of completion upon completion of each stage.	Yes, subject to conditions
4.3.2 Flood Management			

DCP requirement		Proposal	Complies
1	The management of floods must comply with Growth Centres SEPP Amendment (Riverstone West) 2009 and demonstrate compliance according with the requirements in Appendix C of this DCP.	The Department's advice concludes that this proposal complies with the management of flooding in this Precinct	Based on the Department's flood modelling and advice, yes, subject to conditions
2	The minimum fill level must be above the existing climate flood level (100 year Annual Recurrence Interval (ARI)) and the floor level of a habitable room must be a minimum of 300 millimetres above the future climate flood planning level, for commercial and industrial development. The future climate flood planning level will be determined through the Floodplain Management Strategy as described in Appendix C of this DCP. All buildings are to be constructed with a minimum floor level of 17.9 metres AHD.	The Department's advice confirms that the filling works proposed by this DA is compliant with this requirement	Based on the Department's flood modelling and advice, yes, subject to conditions
3	The gutter invert on roads must be a minimum of RL 17.3 metres AHD.	The civil plans as submitted meet the Department's requirements	Based on the Department's flood modelling and advice, yes, subject to conditions
4	If a Flood Impact Assessment of any stage of the earthworks is required then the assessment shall in accordance with the procedures outlined in Appendix C.	The applicant has submitted their flood modelling reports that meet the Department's requirements	Based on the Department's flood modelling and advice, yes, subject to conditions
5	Pedestrian and cycle pathways and open space may extend within the 1 in 100 year ARI flood level, provided that the safe access criteria contained in the NSW Floodplain Manual 2005 are met.	No pedestrian or cycleways are proposed in this early stage of bulk earthworks	N/A
6	Fencing within the E2 Environmental Conservation Zone and the RE2 Private Recreation Zone will not be permitted except for appropriate security or safety fence.	No fencing proposed in these zones that don’t already exist	N/A
7	All development must be consistent with Table 8 Flood Risk Precinct and Table 9 Flood Risk Precincts Controls.	The bulk earthworks proposed meet the Department's requirements	Based on the Department's flood modelling and advice, yes
8	Development with a high sensitivity (such as critical public utilities) must	For future DAs	N/A

DCP requirement		Proposal	Complies
	be sited and designed with no or minimal risk from flooding.		
9	Development with a low sensitivity to flood hazard may be located within the floodplain, subject to appropriate design and siting controls and provided any risks from flooding are acceptable.	For future DAs	N/A
10	There must not be any increase in intensification of the use of High Flood Risk Precincts and wherever appropriate and where possible, allowance be made for their conversion to natural waterway corridors.	The bulk earthworks proposed meet the Department's requirements	Based on the Department's flood modelling and advice, yes
11	Basement car parking extended more than one level below the habitable floor level shall be supported by advanced warning controls.	No building proposed	N/A
12	The product of flow velocity and flow depth must not exceed 0.4 metres square per second for pedestrian accessible areas including car parks and 0.6 metres square per second in non accessible areas.	For future DAs	N/A
13	Fencing must not affect or impede the flow of floods or detrimentally increase flood affection of surrounding land.	For future DAs	N/A
14	Fencing located in an area affected by flooding must be permeable.	Temporary construction fencing will be constructed around the areas where earthworks are taking place which are normally a permeable mesh fence. Conditions have been included requiring chain mesh to be constructed around retained riparian habitats which are also permeable.	Yes, subject to conditions
15	Brick or masonry fence will not be permitted in flood affected areas.	For future DAs	N/A
16	Any building or structure within the E2 – Environment Conservation or RE2 – Private Recreation must consider the use of flood compatible materials as outlined in Appendix F.	For future DAs	N/A
17	As part of the Integrated Water Cycle Management Report, a Structural Assessment must be	For future DAs	N/A

DCP requirement		Proposal	Complies
	prepared in accordance with Appendix D with regards to the Land Use Categories described in Appendix E.		
4.3.3 Water Conservation			
1	Buildings that are installing any water use fittings must demonstrate minimum standards defined by the Water Efficiency Labelling and Standards (WELS) Scheme. Minimum WELS ratings are four star dual-flush toilets, three star showerheads, four star taps (for all taps other than bath outlets and garden taps) and three star urinals. Water efficient washing machines and dishwashers are to be used wherever possible.	For future DAs	N/A
2	Development must connect to a dual reticulation for toilet flushing, laundry and irrigation.	For future DAs	N/A
3	All developments must install rainwater tanks to meet a minimum of 80 per cent of their non potable water demand including toilet flushing, laundry and outdoor uses from alternative sources.	For future DAs	N/A
4	The roof area directed to a rainwater tank should be maximised to both increase the effectiveness and reliability of the reuse system.	For future DAs	N/A
5	Where cooling towers are used they are: a) to be connected to a conductivity meter to ensure optimum circulation before discharge. b) to include a water meter connected to a building energy and water metering system to monitor water usage c) to employ alternative water sources for cooling towers where practical.	For future DAs	N/A
4.3.4 Surface Water Quality and Quantity			
1	All commercial and industrial developments must provide for all stormwater treatment measures to be contained on lots under community title unless otherwise agreed to by Council.	For future DAs	N/A

DCP requirement		Proposal	Complies
2	There shall be: a) a 90 per cent reduction in the post development average annual gross pollutant load b) an 85 per cent reduction in the post development average annual load of Total Suspended Solids load c) a 65 per cent reduction in the post development average annual load of Total Phosphorus load d) a 45 per cent reduction in the post development average annual load of Total Nitrogen load e) a 90 per cent reduction in the post development average annual load of Total Hydrocarbon load	For future DAs	N/A
3	The post development duration of stream forming flows shall be no greater than 3.5 to five times the pre developed duration of stream forming flows.	For future DAs	N/A
4	Impervious areas directly connecting to the stormwater system shall be minimised. Runoff from impervious areas such as roofs, driveways and rainwater tank overflows shall be directed onto grassed and other landscaped areas designed to accept such flows.	For future DAs	N/A
5	Any proposed stormwater treatment measures must be located to minimise the potential resuspension of pollutants and damage.	The stormwater treatment measures have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
6	Where practicable trunk drainage is to be provided as a natural stable channel. Natural stable channels shall not be considered as a treatment measure for water quality.	The drainage proposed has been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
7	Stormwater treatment measures must consider mosquito control in their design.	The stormwater treatment measures have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
8	Stormwater treatment measures must be located outside of the core riparian zone and vegetated buffer on waterfront lands. No adverse impact from discharges into the bushland must occur.	The stormwater treatment measures have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions

DCP requirement		Proposal	Complies
9	Any proposed stormwater treatment measures in commercial and industrial developments that are located in the road reserve must only treat surface flows from within that road reserve.	For future DAs	N/A
10	Any stormwater treatment measures should be located, and configured to maximise the impervious area that is treated.	For future DAs	N/A
11	Where kerbside stormwater treatment measures are proposed, the footway must be extended to the additional width of the measure. That is the prescribed footway width is not to include the width of the measure and the road reserve must be widened to cater for the measure.	For future DAs	N/A
12	The pollutant retention efficiency of structural stormwater treatment measures must be maintained up to the design discharge and must not decrease with the build up of materials.	The stormwater treatment measures have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
13	Structural stormwater treatment measures must not allow the release of any previously trapped material in the event of a stormwater discharge and be designed to prevent or manage any additional surcharge from any inlet or manhole.	The stormwater treatment measures have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
14	Structural stormwater treatment measures must be able to bypass flows in excess of the design discharge with negligible afflux resulting from overtopping or blockage of the device.	The stormwater treatment measures have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
15	All filter media used in stormwater treatment measures must meet the current specifications of the Bioretention Filter Media Guidelines produced by the Facility for Advancing Water Filtration or demonstrated equivalent.	The stormwater treatment measures have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
16	Construction of the stormwater treatment measures must be completed once 90 per cent of the	For future DAs	N/A

DCP requirement		Proposal	Complies
	catchment is developed. If the development is to be staged sacrificial zones must be included in the design and rectified upon completion of development within the catchment.		
17	A Drainage Plan is to be prepared as part of the Integrated Water Cycle Management Report in accordance with the requirements in Appendix D.	The drainage proposed has been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
18	No anaerobic zones on integrated water cycle management measures will be permitted.	The water cycle measures have been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
4.3.5 Erosion and Sediment Control			
1	An Erosion and Sediment Control Plan or a Soil and Water Management Plan, as appropriate, must be prepared as part of the Integrated Water Cycle Management Report in accordance with Appendix D.	The Erosion and Sediment Control Plan has been assessed by our engineers and found to be satisfactory subject to conditions	Yes, subject to conditions
4.3.6 Groundwater			
1	As part of the Integrated Water Cycle Management Report, a Groundwater Management Report must be prepared with every DA in accordance with Appendix D. The report must be prepared in accordance with the Sydney Coast Councils Group Groundwater Management Handbook 2006 as amended or superseded.	This is not required for this bulk earthworks application. However, a condition of consent has been imposed requiring the submission of a Groundwater Management Report prior to issue of any Construction Certificate for these works	Yes, subject to conditions
2	Any dewatering activities require concurrence from the State Government's Department of Water and Energy (DWE) or other subsequent approval body. DWE or subsequent Approval Body must be consulted if dewatering is proposed.	DPIE Water has provided concurrence for the development which includes a Controlled Activity Approval	Yes, subject to conditions
3	The applicant must demonstrate that there will be no adverse impact on surrounding or adjacent properties or infrastructure:	The Department has advised Council that this proposal will have an immaterial impact on surrounding areas. We defer to the Department's advice	Based on the Department's flood modelling and advice, yes
4	As a result of changes in the behaviour of groundwater created	For future DAs	N/A

DCP requirement		Proposal	Complies
	by the method of construction chosen.		
5	From changes to the behaviour of groundwater of the surrounding area, created by the nature of the constructed form and groundwater management system used.	For future DAs	N/A
6	Where there is the potential for a damming effect on groundwater to be created by several consecutive structures constructed below the existing ground levels: a) the cumulative impact will require groundwater modelling to demonstrate no adverse impact on the surrounding properties or infrastructure. The extent of the modelling must consider the potential for future development to extend the damming effect and must, as a minimum extend between street blocks. b) where structures constructed below the existing ground levels are in close proximity to each other (typically less than three metres) there shall be no allowance provided for natural flow of groundwater through these narrow corridors. Provision must be made for these flows to be included in the design of perimeter or through drainage.	For future DAs	N/A
7	Where an impediment to the natural flow paths is created as a result of the nature of the construction methods utilised or the bulk of the below-ground structure, artificial drains may be utilised. These systems may only be utilised where it can be demonstrated that the natural groundwater flow regime is restored both up-gradient and down-gradient of the site, without any adverse effects on surrounding property or infrastructure.	For future DAs	N/A
8	Any groundwater management systems proposed shall have a design life of 50 years.	For future DAs	N/A
9	Where construction is to occur on a hillside details of the method of construction for any development proposal involving construction of permanent structures below the	For future DAs	N/A

DCP requirement		Proposal	Complies
	water table, other than pile or footing installation must be provided. The details provided must be sufficient to demonstrate compliance with the following: a) all components of the structure including subsoil drainage must be located entirely within the property boundary. b) disposal of collected sub soil water must be achieved through a gravity drainage system.		
10	The existing groundwater regime including flow, levels and quality must be determined prior to construction.	For future DAs	N/A
11	Construction techniques, where possible shall eliminate the need for dewatering.	For future DAs	N/A
12	For all development involving construction into perched aquifers in porous or fractured rock aquifers such as shale areas, construction techniques that eliminate the need for pumping shall be employed.	For future DAs	N/A
13	All groundwater management activities including monitoring must be conducted in accordance with the precinct-wide Groundwater Assessment and Management Plan (as described in Appendix D) and as agreed to by Blacktown City Council.	For future DAs	N/A
4.4 Salinity Management			
1	A Salinity Assessment and Management Plan and Salinity Report must be prepared in accordance with Tables 3 and 4 in Section 1.7.3 of this DCP.	The bulk earthworks will have to manage saline soils, therefore a condition of consent has been imposed requiring a post earthworks salinity report to be provided to Council	Yes, subject to conditions
2	Development must comply with the Western Sydney Salinity Code of Practice 2004 as amended or superseded.	The bulk earthworks must ensure it manages the disturbance of or relocation of saline soils, therefore a condition of consent has been imposed requiring a post earthworks salinity report to be provided to Council	Yes, subject to conditions
3	Development must be in accordance with the following salinity guidelines:	For future DAs	N/A

DCP requirement		Proposal	Complies
	a) Local Government Salinity Initiative documents b) Building in a Saline Environment, Building Code of Australia c) Australian Standards relevant for construction in a saline environment		
4.5 Contamination Management			
1	A Contamination Assessment and Management Plan must be conducted and prepared in accordance with in Table 3 in Section 1.7.3 of this DCP.	See State Environmental Planning Policy (Resilience and Hazards) 2021 above	Yes, subject to conditions
2	Development should be designed and managed through appropriate site management techniques to minimise the potential for polluting discharges, fugitive emissions and controlled spillages.	See State Environmental Planning Policy (Resilience and Hazards) 2021 above	Yes, subject to conditions
3	All development must comply with the requirements in Part Q Contaminated Land Guidelines of Blacktown DCP 2006 and relevant government guidelines.	See State Environmental Planning Policy (Resilience and Hazards) 2021 above	Yes, subject to conditions
4.6 Environmental Corridor			
1	An Environmental Corridor is to be provided in accordance with Figure 26.	A draft Vegetation Management Plan from 2014 has been prepared for the Precinct. That plan contains detailed guidance on clearing protocols to minimise impacts from the impacts on flora and fauna species in the disturbance area and biocertified areas. It also includes measures to improve the biodiversity corridor associated with Eastern Creek in the Precinct. Our natural areas section is not satisfied with the Vegetation Management Plan and requires an updated plan to be submitted as a deferred commencement condition.	Yes, subject to conditions
2	The Environmental Corridor must be rehabilitated and revegetated in accordance with the North West Growth Centre Waterfront Lands Strategy and the Vegetation Management Plan, as described in Section 1.4.4 and Table 4 in Section 1.7.3 of this DCP respectively.	A draft Vegetation Management Plan from 2014 has been prepared for the Precinct. That plan contains detailed guidance on clearing protocols to minimise impacts from the impacts on flora and fauna species in the disturbance area and biocertified areas. It also includes measures	Yes, subject to conditions

DCP requirement		Proposal	Complies
		to improve the biodiversity corridor associated with Eastern Creek in the Precinct. Our Natural Areas Section is not satisfied with the Vegetation Management Plan and requires an updated plan to be submitted as a deferred commencement condition.	
2	The provision of riparian corridors within the Environmental Corridor must be in accordance with the North West Growth Centre Waterfront Land Strategy.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
3	Category 1 river (watercourse) must have a 40 metre wide core riparian zone either side of the river as measured from the top of each of the highest banks. A 10 metre vegetated buffer must also be provided that extends out from the edge of the core riparian zone.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
4	Category 2 river (watercourse) must have a 20 metre wide core riparian zone either side of the river as measured from the top of each of the highest banks. A 10 metre vegetated buffer must also be provided that extends out from the edge of the core riparian zone.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
5	Category 3 river (watercourse) must have a 10 metre wide core riparian zone either side of the river as measured from the top of each of the highest banks, with the exception of the Category 3 tributary from stream W5 as agreed upon with Department of Water and Energy. No vegetated buffer is required.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
6	Core riparian zones must be rehabilitated to the extent of the core riparian zone using locally endemic and indigenous species and include full structural floristics of the endemic vegetation community such as canopy, understorey and groundcover species.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
7	The vegetated buffer must be rehabilitated to the extent of the core riparian zone using locally endemic and indigenous species and include full structural floristics of	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions

DCP requirement		Proposal	Complies
	the endemic vegetation community such as canopy, understorey and groundcover species.		
8	Applicants must provide for the appropriate re-use of top soil from development sites that contain known or potential native seed bank.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
9	Services such as sewer, electricity, gas, communication or transport must be located outside the core riparian zone where traversing the core riparian zone is not required. Where services are required to traverse the core riparian zone the installation process should be limited to non destructive techniques such as direct drilling or boring and be designed to minimise the impact of maintenance or repair work.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
10	Any activities or other land uses associated with lands classified under the Local Government Act 1993 as amended as a Park or Sportsground are not permitted in the core riparian zone or vegetated buffer. This includes a range of leisure, recreation or sporting activities and includes facilities such as amenities blocks and car parks. Pathways and cycleways or pervious recreational areas that do not support formal organised activities are excluded from this clause.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
11	Pathways, cycleways and pervious recreational areas that do not support formal organised activities cannot exceed 40 per cent of the area of the vegetated buffer and must be designed to ensure no reduction in the function of the core riparian zone. In general, pathways, cycleways and pervious recreational areas are not permitted in the core riparian zone, except where an opportunity presents for the community to connect with and explore the river in a strategic location. It shall be demonstrated that any pathway, cycleway or pervious recreational area proposed will not compromise the ecological integrity	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions

DCP requirement		Proposal	Complies
	of the river, its surrounding vegetation and bed and bank stability.		
12 (shown as 3)	Integrated water cycle management measures are not permitted in the core riparian zone, however, measures are permitted in the vegetated buffer provided that the measure is fully vegetated. Measures which are not fully vegetated must be located outside the vegetated buffer.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
13 (shown as 4)	Bush fire asset protection zones (APZs) are not permitted within the core riparian zone or vegetated buffer.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
14 (shown as 5)	Subdivisions (via perimeter roads) and new developments should front onto riparian land. Subdivisions (via perimeter roads) and new developments must not back onto riparian lands. That is, the road should be placed between the riparian land and the lots forming a perimeter to the development separating the development from the riparian lands.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
15 (shown as 6)	Rehabilitation or revegetation of the core riparian zone or vegetated buffer must not increase the impacts of flooding. This clause, however, shall not be used to prevent the restoration or rehabilitation of the core riparian zone or vegetated buffer in accordance with other clauses in this Part.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
16 (shown as 7)	Any filling of streams must be undertaken in accordance Figure 26.	To be addressed in the updated Vegetation Management Plan	Yes, subject to conditions
4.7 Bushfire Management			
1	Commercial and industrial development (Class 5-8 and 10B of the BCA) must comply with the NSW Planning for Bush Fire Protection 2006 requirements for access, water and services, defendable space, emergency planning and andscaping/vegetation management.	For future DAs	N/A

DCP requirement		Proposal	Complies
2	The provision of defendable spaces to industrial and commercial buildings shall comply with Table 10 and Figure 27.	For future DAs	N/A
3	The landscaping within the boundary setbacks to the buildings adjoining the bush fire hazard interface shall be maintained as an Inner Protection Area, in accordance with Appendix A5.4 & Appendix A5.5 of Planning for Bushfire Protection 2006 and the Rural Fire Service Standards for Asset Protection Zones.	For future DAs	N/A
4	Any fill batter between the Spine Road carriageway and the Eastern Creek Environmental Corridor shall be managed to minimise the accumulation of combustible bush fire fuels. The dry weight of litter shall be maintained at less than eight tonnes per hectare and grassland vegetation shall be slashed to a maximum height of 100mm during the bushfire danger period.	For future DAs	N/A
5	The construction of the future buildings which will be exposed to the bush fire hazard interface shall address the provisions of Appendix 3 of Planning for Bushfire Protection 2006 and Australian Standard A.S. 3959 – 1999 – Construction of Buildings in Bushfire Prone Areas.	For future DAs	N/A
6	A reticulated water supply shall be extended to service the industrial and commercial development in accordance with the specifications of Australian Standard A.S 2419.2 - 2005. Hydrants shall have a flow rate of 10 litres per second.	For future DAs	N/A
7	Fire hydrants shall be accessible and located such that a fire appliance can park within a maximum distance of 20 metres from the hydrant and the habitable building must be located such that a fire at the furthest extremity can be attacked by fire-fighters using two 30 metre hose lines and a 10 metre water jet. A clear unobstructed path between the hydrant and the most distant point of the building cannot exceed 90 metres.	For future DAs	N/A

DCP requirement		Proposal	Complies
8	Blue hydrant markers shall be provided to locate the positions of the hydrants.	For future DAs	N/A
9	The markers shall be positioned on the hydrant side of the centre line of the road pavement.	For future DAs	N/A
10	A “layby” parking bay should be provided at the booster assembly (when installed) and that external “Millcock” valves (Landing Valves) be provided in locations which will assist in the extinguishment of bush fires that occur in the Eastern Creek riparian corridor.	For future DAs	N/A
11	The public road network within the Riverstone West Precinct and the private access roads to the proposed allotments shall comply, as minimum, with the deemed-to-satisfy provisions of Section 4.1.3(a) “Public Roads” and Section 4.1.3(b) “Private Roads” as defined by Planning for Bushfire Protection 2006.	For future DAs	N/A
12	Internal access roads shall be designed to facilitate fire operational access for NSW Fire Brigade Appliances.	For future DAs	N/A
13	The internal road network within the southern Business Park and Industrial precinct shall provide alternate means of egress from the precinct.	For future DAs	N/A
14	A four metre wide compacted gravel fire trail/service access shall be constructed within the transmission line easement, from the Spine Road to the gas pipeline easement, turning to the northwest linking with the proposed access road from Bandon Road. A compacted gravel fire trail shall be constructed between the Eastern Creek riparian corridor and the Business Park precinct. Locked gates shall be provided at the entry points to these trails. The fire trail must not comprise the core riparian zone or vegetated buffer.	For future DAs	N/A
15	A site specific Bush Fire Evacuation Plan must be prepared as described	For future DAs	N/A

DCP requirement		Proposal	Complies
	in Table 4 in Section 1.7.3 of this DCP.		
16	Areas identified as within the bush fire prone buffer as on the Blacktown Bush Fire Prone Land Map will be required to comply with either section 79BA or section 91 100B of the Rural Fires Act 1997.	For future DAs	N/A
4.8 Indigenous Heritage			
1	Areas with high to moderate Aboriginal archaeological significance are shown in Figure 28.	Noted	Noted
2	Development within areas of high to moderate Aboriginal archaeological significance shall not proceed without: a) appropriate investigation and consultation with the relevant local Aboriginal groups b) a Plan of Management that addresses the ongoing management of any archaeological deposits.	Aboriginal Heritage Impact Permits have already been issued to impact all Aboriginal sites. Notwithstanding, standard unexpected finds protocol conditions will be imposed	Yes, subject to compliance with conditions
3	Section 90 consent under the National Parks and Wildlife Act 1974 will be required for all impacted archaeological sites. Section 90 consent should only cover that part of the site that will be impacted. Consent should be obtained prior to any works which will directly affect these sites. It will be necessary to obtain an excavation permit pursuant to Section 60 or Section 140 of the Heritage Act 1977.	Aboriginal Heritage Impact Permits have already issued to impact all Aboriginal sites. Notwithstanding, standard unexpected finds protocol conditions will be imposed	Yes, subject to compliance with conditions
4	Test/salvage excavation of Aboriginal sites or areas of archaeological potential is warranted for some of the recorded archaeological sites and potential archaeological deposits (PADs) which will be impacted by future development. A section 87(1) permit under the National Parks and Wildlife Act 1974 should be obtained for sites identified as having moderate to high archaeological significance.	AHIP already issued to impact all Aboriginal sites. Notwithstanding, standard unexpected finds protocol conditions will be imposed	Yes, subject to conditions
4.9 European Heritage			

DCP requirement		Proposal	Complies
1	A detailed Conservation Management Plan (CMP) must be prepared and adopted by Council prior to any DA approval for works in the vicinity of the heritage items identified in Table 11, in accordance with Table 3 in Section 1.7.3 and Figures 29 and 30.	An updated Conservation Management Plan has been requested on several occasions. The applicant has not provided this information. We have therefore imposed a deferred commencement condition requiring this to be provided and adopted by Council prior to the consent becoming operational	No, but subject to deferred commencement conditions
2	A Heritage Interpretation Strategy (HIS) for the Riverstone West Precinct must be prepared in accordance with Table 3 in Section 1.7.3 of this DCP for the items identified in Table 12:	A Heritage Interpretation Strategy has been provided	Yes, subject to conditions
3	Photographic recording of any heritage buildings and site elements identified in Table 12 proposed to be altered or demolished shall be undertaken prior to any alteration or demolition by a suitably qualified heritage consultant. This photographic recording should be in accordance with the Heritage Office guidelines How to Prepare Archival Records of Heritage Items (1998) and Photographic Recording of Heritage Items Using Film and Digital Capture (2006). The appropriate level of recording should be determined by Council.	A condition has been imposed that prior to any demolition works, an archival recording of the site and all its buildings, structures and elements must be undertaken.	Yes, subject to conditions
4	Site interpretation of items identified in Table 12 shall be in accordance with the HIS and the Heritage Office guidelines entitled Interpreting Heritage Place and Items: Guidelines (2005).	This has been addressed in the Heritage Interpretation Strategy. Notwithstanding this, interpretation of the 7 listed items in Table 12 is to also be addressed in the updated Conservation Management Plan	Yes, subject to conditions
4.10 Air Quality and Odour Management			
4.10.1 Air Quality			
1	For development within the water treatment plant odour buffer (shown in Figure 32), an Air and Odour Report must be prepared at DA stage in accordance with Table 4 in Section 1.7.3,	Our Environmental Health section has reviewed the application and has found it satisfactory. Notwithstanding this, a condition has been imposed requiring the preparation of a Construction Air Quality Management Plan prior to works commencing. It is to incorporate the dust control measures in the document held at Council's Record number D23/322012. It must also include	Yes, subject to conditions

DCP requirement		Proposal	Complies
		specific dust monitoring and control strategies for each stage of construction.	
2	DAs must comply with Action for Air - The NSW Government's 25 Year Air Quality Management Plan and any other relevant NSW Government and Blacktown City Council documents.	As above	Yes, subject to conditions
3	The development must not have an adverse impact on air quality during or post development.	The dust mitigation measures and control strategies will ensure this. Other conditions have been imposed that will ensure that dust is controlled so as not to have adverse impacts on surrounding residents.	Yes, subject to conditions
4.10.2 Odour			
1	Sensitive uses must be located outside the water treatment plant odour buffer. Refer to Figure 32.	For future DAs	N/A
2	Buildings located in the Vineyard Business Area must be orientated to provide adequate air flow through buildings. Dead end courtyards between buildings, long narrow spaces or corners between buildings where air may stagnate must be avoided. Creating spaces and staggering spaces between buildings will allow for air movement around buildings. Refer to Figure 31.	For future DAs	N/A
3	Continuous, dense landscaping should be provided around the STP site to assist in reducing odour.	For future DAs	N/A
4.11 Noise and Vibration Management			
1	A Noise and Vibration Impact Assessment and Management Plan must be prepared in accordance with Table 4 in Section 1.7.3 of this DCP.	Provided.	Yes, subject to conditions
2	DAs must comply with NSW Industrial Noise Policy 2000 and other relevant Council and government authority guidelines.	EHU to confirm if satisfactory	
3	Loading and service areas should not back into areas fronting residential buildings in Riverstone.	For future DAs	N/A

DCP requirement		Proposal	Complies
	A merits based assessment approach will be adopted where this cannot be achieved.		
4	DAs must comply with RailCorp's Interim Guidelines for Applicants – consideration of rail noise and vibration in the planning process which aims at managing rail noise and vibration impacts associated with development near rail corridors.	For future DAs	N/A
5	DAs adjoining the rail corridor should consider the impact of stray currents from rail operations on the foundation structure of the development. All DAs adjoining the rail corridor also include assessment of electrolysis risk as part of the Noise and Vibration Impact Assessment and Management Plan.	For future DAs	N/A
4.12 Waste Management			
1	A Waste Management Plan must be prepared in accordance with Table 4 in Section 1.7.3 of this DCP.	Provided	Yes, subject to conditions
2	Facilities to allow on-site source separation and re-use of materials on-site should be provided.	For future DAs for facilities	N/A
3	Appropriate disposal of special waste is to be detailed by the relevant authority.	Site contamination reports provided	Yes, subject to conditions
4	Waste collection should be provided on-site at the street frontage with clear access to facilitate pick up.	For future DAs	N/A
5	The siting of any stockpile must take into account environmental factors such as slope, drainage, location of watercourses and native vegetation.	Subject to conditions	Yes, subject to conditions
6	Sufficient space must be provided for the storage of garden waste and other waste materials on site.	For future DAs	N/A
7	Re-use of stockpile materials on-site is should be facilitated for.	For future DAs	N/A
8	Sufficient space for storage of recyclables and garbage should be provided on-site.	For future DAs	N/A

DCP requirement		Proposal	Complies
9	Adequate space should be provided for the temporary storage of recyclables, garbage and compostable materials in each unit.	For future DAs	N/A
10	Waste cupboards should be designed and located so as to be accessible, useable and cater for change of use.	For future DAs	N/A
11	The area or room allocated for garbage and recycling is to be of a sufficient size to store Council's standard bins in an efficient manner.	For future DAs	N/A
12	Garbage and recycling areas/rooms must be accessible to all users and have unobstructed access to Council's standard bins in an efficient manner.	For future DAs	N/A
13	Areas for the storage of bulky waste (for example, clean-up materials) should be provided.	For future DAs	N/A
14	Volume reduction equipment is permitted with consent.	For future DAs	N/A
15	Where the development is large or where the site characteristics warrant, multiple garbage and recycling areas should be provided.	For future DAs	N/A
16	External space for compostable materials should be provided and located separate to the garbage and recycling room.	For future DAs	N/A
17	Composting facilities should be purpose built and be incorporated into the landscape plan for development.	For future DAs	N/A
18	The siting of composting facilities should take into account the potential impact on neighbouring properties.	For future DAs	N/A
19	Composting facilities should be adequately signposted to indicate availability of composting facilities on-site.	For future DAs	N/A
5.0 **DEVELOPMENT** CONTROLS			
5.1	Lot Subdivision	N/A bulk earthworks only	N/A

DCP requirement		Proposal	Complies
5.2	Built Form	N/A bulk earthworks only	N/A
5.3	Streetscape	N/A bulk earthworks only	N/A
5.4	Landscape Design	N/A bulk earthworks only	N/A
5.5	Access and Parking	N/A bulk earthworks only	N/A
5.6	Safety and Surveillance	N/A bulk earthworks only	N/A
5.7	Community Needs	N/A bulk earthworks only	N/A
6.0 SPECIAL AREA CONTROLS			
6.1	Vineyard Business Area	N/A bulk earthworks only	N/A
6.2	Riverstone West Business Park	N/A bulk earthworks only	N/A
6.3	Sports Centre	N/A bulk earthworks only	N/A
6.4	Intermodal Terminal (IMT)	N/A bulk earthworks only	N/A
Appendix C Floodplain Management Strategy			
Objectives:			
1)	define existing flooding at the site and in the vicinity of the site in accordance with the NSW Floodplain Development Manual 2005, the Growth Centres Development Code and Council procedures	We defer to the Department's position on flooding	Based on the Department's flood modelling and advice, yes
2)	determine the flood impacts on account of the proposed development, and investigate mitigation options which will provide input into the Floodplain Management Strategy	We defer to the Department's position on flooding	Based on the Department's flood modelling and advice, yes
3)	develop a strategy that demonstrates flood impacts at the site and adjoining the site are managed in accordance with the requirements of the Growth Centres SEPP Amendment (Riverstone West Precinct) 2009, the Growth Centres Development Code and the development controls in Section 4.3 of this DCP.	We defer to the Department's position on flooding	Based on the Department's flood modelling and advice, yes
4)	ensure that the Floodplain Management Strategy is supported by a Flood Emergency Response Plan and a Cut and Fill plan	The flood management strategy includes a Flood Emergency Response Plan at appendix H. We defer to the Department's position on flooding	Based on the Department's flood modelling and advice, yes

DCP requirement		Proposal	Complies
5)	ensure that the Floodplain management Strategy addresses the specific requirements listed in Strategy Formulation Requirements in this Appendix of the DCP.	We defer to the Department's position on flooding	Based on the Department's flood modelling and advice, yes

Attachment 7

Summary of residents' concerns and Council response

1 Location of submitters identified with yellow dots (excluding confidential submitters)

Submitters in Vineyard (north of the site)

Submitters in Vineyard and Oakville (northeast of the site)

Submitters in Riverstone (east of the site)

Submitters in Riverstone (east of the site)

Submitters in Riverstone (east of the site)

Submitters in Riverstone (east of the site)

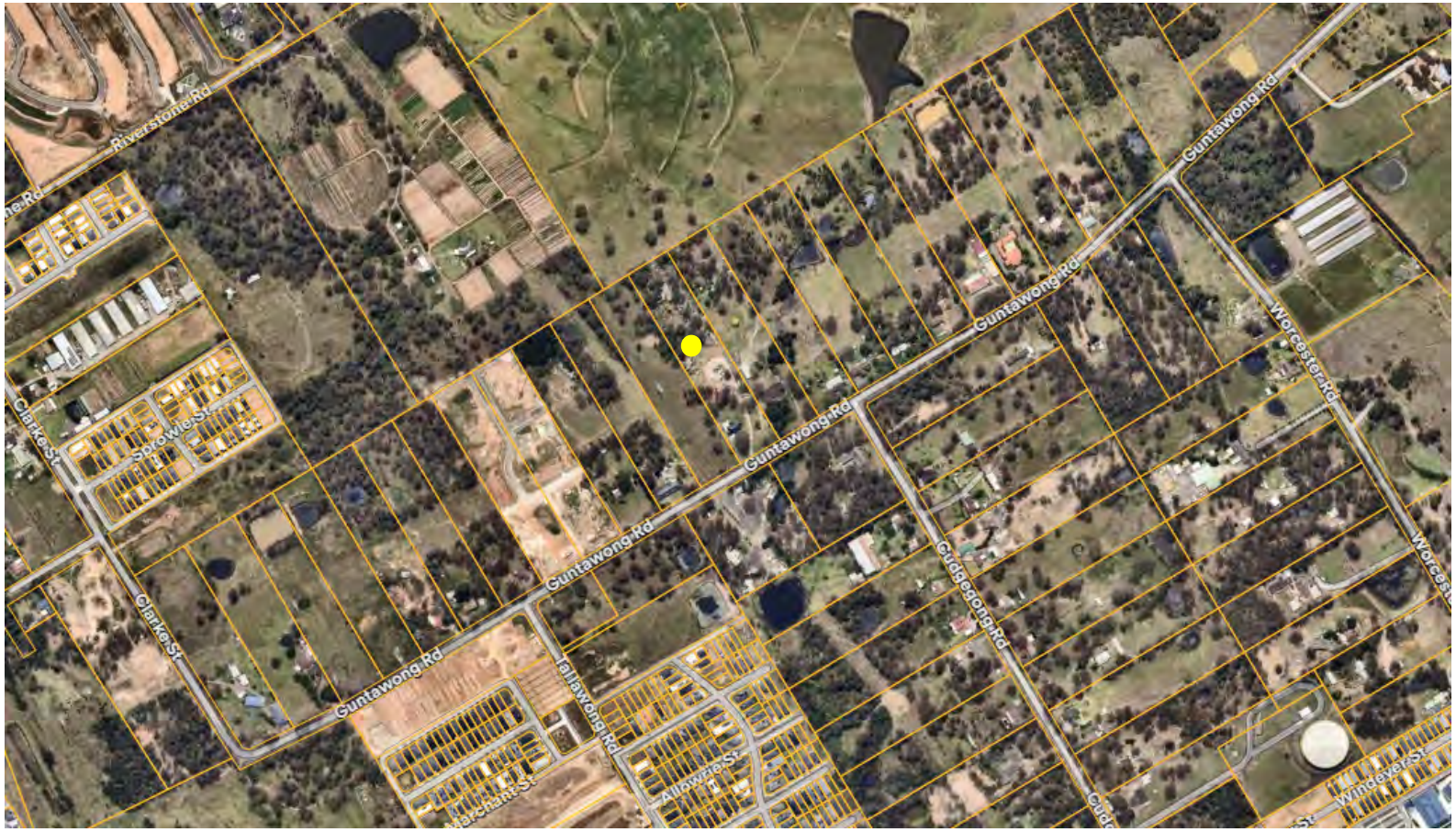
Submitters in Riverstone (east of the site)

Submitters in Riverstone (east of the site)

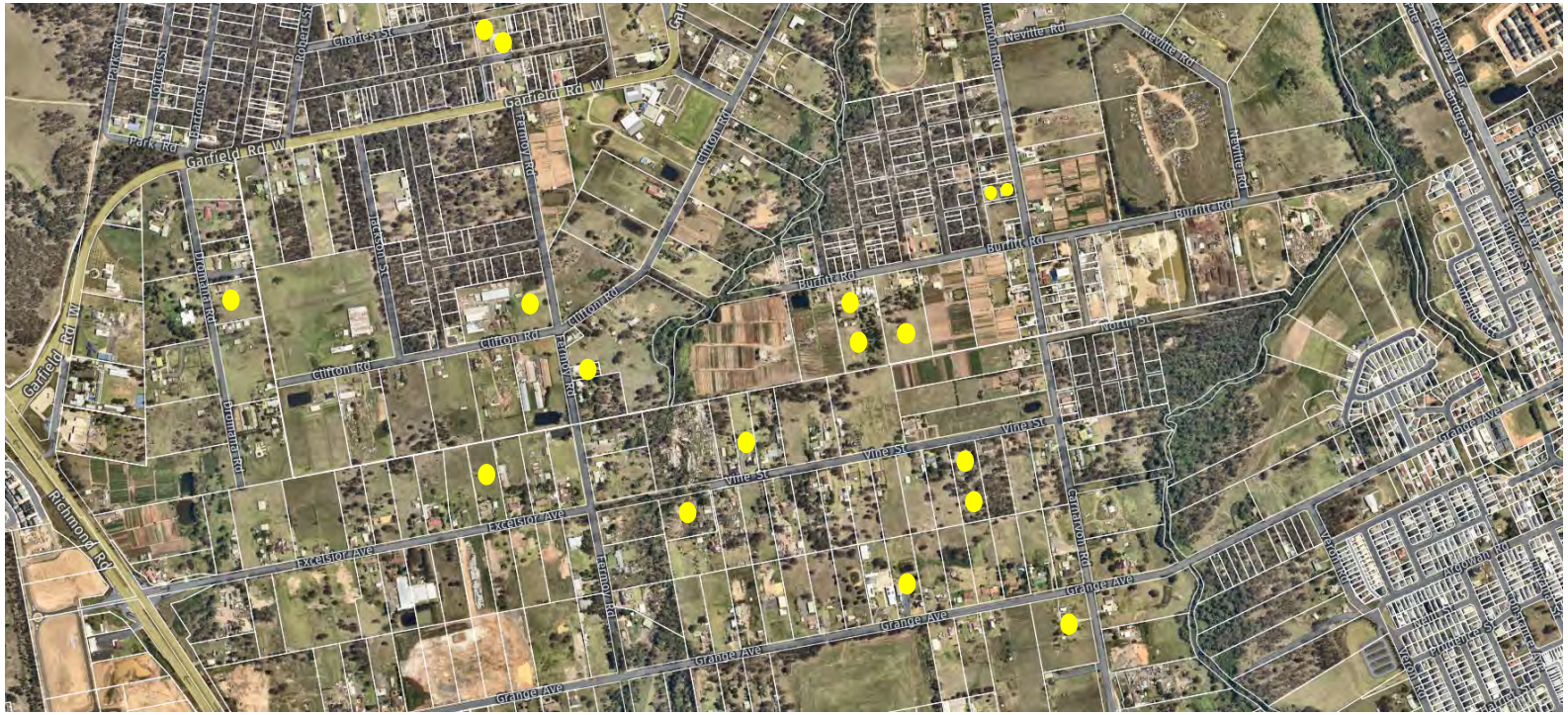
Submitters in Riverstone (east of the site)

Submitters in Riverstone (east of the site)

Submitters in Riverstone and Schofields (south of the site)



Submitters in Rouse Hill (south east of the site)



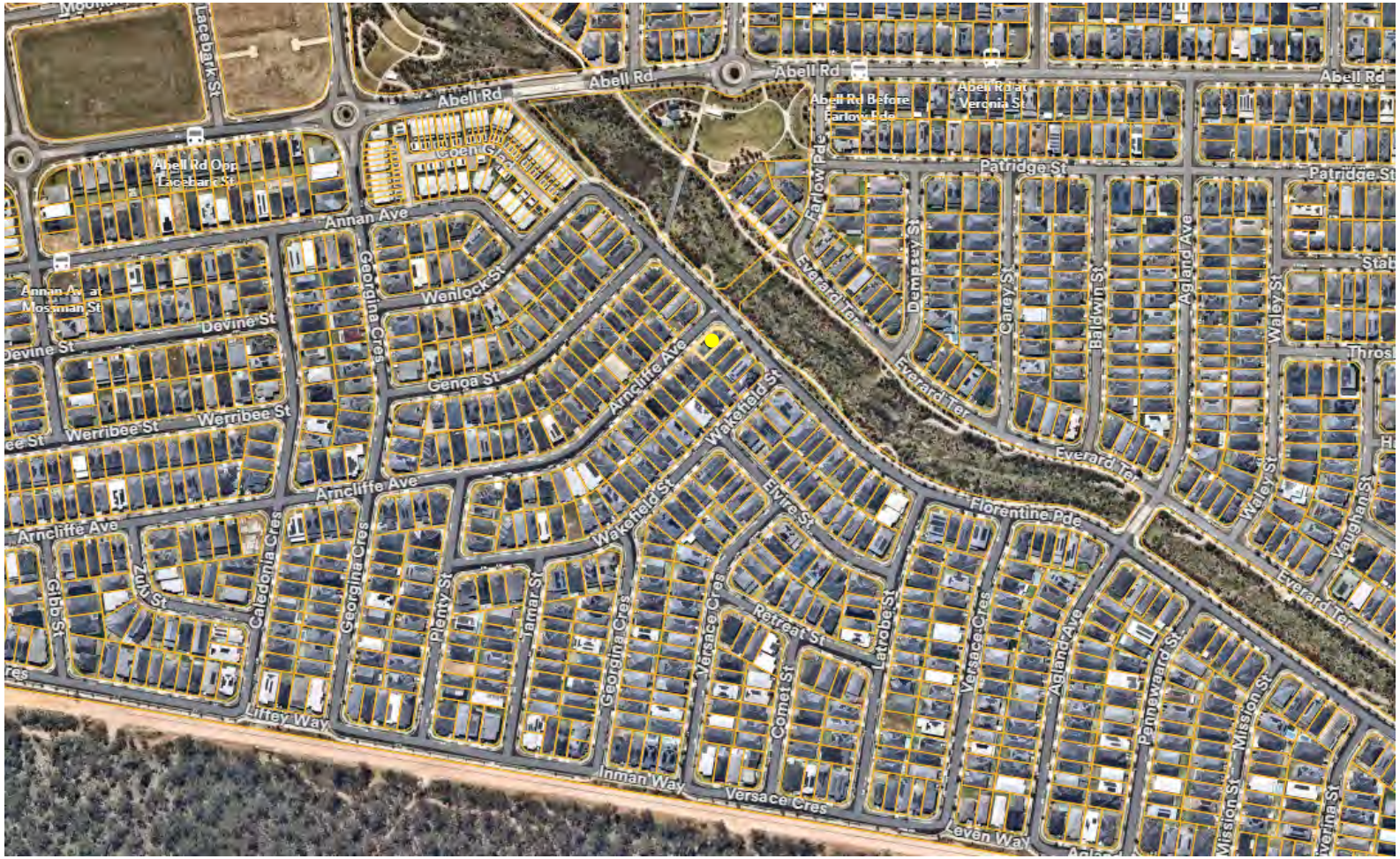
Submitters in Schofields, Marsden Park and Angus (south of the site)

Submitters in Marsden Park and Angus (south west and west of the site)

Submitters in Marsden Park (west of the site)

Submitters in Marsden Park (south west of the site)

Submitters in Melonba (south west of the site)



Submitters in Melonba (south west of the site)

Submitters in Riverstone (south east of the site)

Submitters in Schofields (south east of the site)

Submitters in Rouse Hill (south east of the site)

Submitters in Grantham Farm (east of the site)

2 Consideration of issues raised

Issue	Planning comment/response
FLOODING: • while this development is on less-sensitive commercial and industrial land, it will have flood impacts on surrounding sensitive residential land. Why are industrial developments exempt from the state government flood zoning when residential developments are not? • the development was supposed to use material on site using the balanced cut and fill method with no imported fill with no loss of flood storage on the site. Importing fill will reduce flood storage capacity and raise the flood levels including the Probable Maximum Flood across the whole of the Hawkesbury Nepean floodplain. It will impact many homes in the Riverstone Town Centre and surrounding areas, the Hawkesbury and Penrith LGA including the major centres of Richmond, Windsor and Penrith. • bringing in fill to the site will create a choke point which will cause the water that normally lays on the flood plain to bank back up and put homes underwater. • the proposed filling will increase flooding of the Riverstone - Richmond railway line limiting heavy rail travel during major flood events that is used by the wider community. Roads and flood evacuation routes in the area will close sooner and for longer. • Riverstone Cemetery will flood more frequently and at a higher level due to the proposed filling. • impact of flooding during placement of fill is not addressed in the documentation. This could lead to erosion of the fill material which could have an impact on siltation in Eastern Creek • the flood impact on residents of Riverstone, the Riverstone town centre has been completely ignored in the Tuflow flow hydraulic model predictions. It is likely to impact Riverstone East and the impacts are not highlighted on the maps • mapping in the Tuflow Hydraulic model is misleading in its use of colour to make all residential areas the same colour as the “now dry land”. The map also differs in the AEP 1% flood level to other maps of the same nature. • filling in low lying areas will reduce the capacity of the flood water to naturally inundate, creating additional pressure for the flood water to flow elsewhere impacting surrounding and up stream areas which will increases the risk to life and property	The Riverstone West Precinct was rezoned in 2009 following an extensive precinct planning process that included a detailed flood impact assessment. This underwent a recent review by what was then called the Department of Planning & Environment in 2020 to 2022 that focused on flood risk management matters. The modelling undertaken by Advisian verifies the modelling undertaken by Cardno (now Stantec) on behalf of the now Department of Planning Housing and Infrastructure during the State Environmental Planning Policy (Precincts – Central River City) 2021 amendment investigations. It indicates an immaterial impact on off-site flood behaviour from this bulk earthworks development. This application proposes final land levels that are consistent with the level adopted as part of the Policy's review. As detailed in the main body of this report, the Department's letter of advice to Council and associated modelling reinforce their position that the proposal will have immaterial flood impacts on adjoining properties. The Department’s view is that the cut and fill strategy associated with the 2009 rezoning of the precinct: • was not based on an equalisation of cut and fill volumes • allowed for a net loss of floodplain storage capacity. The Department’s view is also that the final scenario underpinning the rezoning did not provide for balanced cut and fill volumes on land below the Hawkesbury-Nepean Valley 1% flood level and that this allowed for a net loss of floodplain storage capacity. Council defers to the Department's position and modelling on all flooding concerns associated with this proposal. Current NSW Government flood prone land policy, outlined in the 2023 Flood Risk Management manual, and the development control plan requires development designed to be above the 1% AEP flood event, rather than the PMF. The development complies with these guidelines in this regard. Many submitters have indicated that their properties are affected by a new PMF level. If surrounding properties already have a new PMF flood level, it would not be as a result of this development as the application has not been determined yet With regards to why Riverstone West has its own flood planning controls, Council raised the same concern with the Department at the time of State Environmental

Issue	Planning comment/response
• flood reports state that there will be minimal impact on surrounding properties, but what does that actually mean? • this catchment saw 6 floods between 2020 and 2022. This development will increase the flood damage to surrounding area, especially with impacts of climate change • why are there different flood planning controls for the Riverstone West Precinct than apply to anywhere else in the State? • this proposal was created under the old PMF levels. Will this development now have to be adjusted to the current level of 28 m that now applies to Marsden Park, Schofields West and Riverstone areas in relation to the development and flood heights. If not, why not? • the development is using outdated flood studies from 2014, whereas the long awaited developments of the Riverstone Town Centre, Marsden Park North and Schofields West using the same studies were declined recently. • the flood reports do not include the cumulative effect of the fill to the neighbouring streets along Garfield Road West, West Parade, Creek Street areas also to the properties in Angus in particular York Road, Marsden Road, Delaware Road and Lyton Road areas. • apply logic not flood reports as flood water will need to go elsewhere if you fill this land • south, Bells and Eastern Creek don't currently have the capacity to hold the amount of rainwater experienced in recent years that flows into it so water banking up due to this development will cause it to spread out closer towards homes • cancelled West Schofields, Riverstone Town Centre and Marsden Park North precincts will become retention basins for this development potentially putting homes that have never flooded before under water • why are previous flood studies done in this area being ignored • appropriate infrastructure measures such as road upgrades to counter flooding must be in place before this development goes ahead • what mitigation measures are proposed to prevent flood impacts on properties in the vicinity and not impact on local drainage systems • concerns that State Government changed the SEPP from having no flooding impact to minimal flood impact	Planning Policy amendment stating that the Department should not apply different flood planning criteria to Riverstone West. With regards to climate change, the development control plan requires the minimum fill level to be at the present day flood planning level, but future buildings would be subject to future climate conditions as determined through a Hawkesbury Nepean Flood Study. With regards to what happens if it floods during filling, the proposed catch drains and sediment basin will be constructed prior to the proposed earthworks. There are 17 sediment control basins proposed which are designed in accordance Landcom: Managing Urban Stormwater: Soils and construction. These basins are designed up to 10% Annual Exceedance Probability level. The applicant's soil and water management plan shall address the set up of the basins before major earthworks are undertaken. The Cardno/Stantec modelling undertaken for the Department is the most appropriate model to use to compare impacts on the site. This model considered older models as part of its development. Mitigation management measures for floods have already been considered in the Department's modelling and reflected in the civil plans. Impervious surfaces, like concrete, generate higher amounts of water runoff that pervious surfaces, like grass. The impervious surface ratio is the ratio of the total area of impervious surfaces to the total land area of a development. This does not refer to chance. The 95% impervious indicates that the modelling for this precinct considers 95% of the site to be similar to concrete-like rather than grass-like. Current NSW Government flood prone land policy, outlined in the 2023 Flood Risk Management manual requires both industrial and residential development to be designed to be above the 1% AEP flood event. The development control plan for the precinct was also developed in accordance with flood prone land policy. The development complies with these guidelines in regard to flood impacts. The flood modelling provided does not show any adverse impacts in Riverstone Town Centre. Riverstone East is on a different tributary of the Hawkesbury Nepean river, and will not be impacted by the proposed development. This development will not have to adjust to the new PMF. The development is designed to be above the 1% AEP flood event, rather than the PMF. New modelling for the Hawkesbury Nepean River indicates that the 1% AEP level has not increased in the vicinity of this development.

Issue	Planning comment/response
• importing 3.9 million cubic metres of landfill to increase the level in a flood plain and then build buildings on top is against the FEM and PMF principles • the land has a height of only 10 metres overall above PMF level to allow anything built • the development will have cumulative impacts on surrounding land in the Hawkesbury Nepean flood plain • the development will put extra pressure on emergency services to obtain extra resources • the NSW Government and the Department of Planning announced on 29 October 2023 that development in the Hawkesbury Nepean Floodplain must now be above the Probable Maximum Flood level due to the bathtub affected and risk to life in the area. Most of this site is affected by flooding and should not be developed. • what will the back flow of water do to the Hawkesbury areas, South Creek, Windsor Downs and Bligh Park • fill of this nature, height and extent in a floodway will have a significant effect on flooding pattern, depths and velocities • the LEP does not support landfill on a floodplain • the information provided does not detail the effect of riverine flooding which needs to be considered • flood information provided is based on a 1:100 year flood event which does not meet the guidelines of the current Floodplain Development Manual as this is a floodway fill development • the proposed removal of flood storage is estimated to add 50mm to flood levels on Rickabys and South Creek for a Nepean-Hawkesbury flood and add approximately 165mm to the flood levels on South Creek in a coincidence of local and riverine flooding. In the example of July 2022, this additional flood level would have caused an inundation of Richmond Road at Berkshire Park and Blacktown Road at Londonderry for as much as 36 hours. • were the surveys relating to the flood level projections done prior to, during or after the current PMF mapping was accepted by the NSW Government? If other Blacktown residents have to conform to the current rules within the flood zone so should developers.	

Issue	Planning comment/response
• developer funds should not enable changes to existing rules which can/will cause damage within the catchment. • the effects of any change to the local hydrology as a result of the proposal cannot be fully known even with the specialist flood reports and surveys provided. • the projections in relation to the increased local flood levels from concentrated storm water flows relating to the massive increase in hard surface to be installed under this DA should not be trusted. The containment of this additional storm water into channels cannot be guaranteed and the resulting effect to flood levels across the catchment cannot be predicted. • not enough is known about the future flood habits to trust the results of these desktop surveys. Flood modelling is just that, hypothetical modelling. The ongoing changes to climate and rainfall have already shown over the last three years that they remain unpredictable and therefore cannot be accurately forecast. Flood modelling should not be relied upon over local knowledge of those who have experienced flooding in the area first hand • the changes proposed in the Overland Flow Assessment 3 cannot be handled effectively as per the surveys' recommendations • the Flood Emergency Response Plan is 10 years old and needs to be updated to current standards • the site grading is 2m higher than the evacuation route which means people will have to travel into flood water to rise up again to evacuate • Overland Flow Assessment does not provide detail for flood mitigation. Images are not clear and cannot be understood • Overland Flow Assessment mentions flood modelling under "Developed Conditions" that the model is "95% impervious". What will be the impact to the model in the 5% chance it is not impervious? • further flood modelling of flood events to the south of the site needs to be done prior to approval • Carnarvon Road at the intersection of Garfield Road and before at Grange Avenue and the intersection of Carnarvon Road and Schofields Road are subject to flood, limiting emergency evacuation for residents within this boundary. With no flood modelling in this area based on the proposed development, how will this be impacted? • consider the bridge work on the M7 from Symonds Road to Quakers Hill parkway as an example. Any fill to that area would have caused major flooding in the	

Issue	Planning comment/response
surrounding residential areas, hence the requirement for bridges to support the M7 to not disperse flood waters in an area that already floods. So how would this DA proposal be different? • the development will only give people living in this area less time to prepare in case of flooding as the water would fill up very quickly as a result of filling the low lying areas. • Approval of the proposal will set a precedent • what consideration has been made in relation to safety and welfare of students and staff of nearby schools and school infrastructure • the conclusion of the Flood Impact and Risk Assessment is both inaccurate and over optimistic when one considers the impact of climate change within the last few years where we have seen consecutive flooding in the area. The conclusions may prove to be irrelevant when a 1.5C degree increase in temperature is predicted for 2025 and after the future modelling for the Riverstone Town Centre is considered by the DPE • it appears that the developers are trying to rush through this application before NSW Government Flood Evacuation Modelling is evaluated and implemented through necessary future local analysis and modelling • the proposals compliance with Clause 3.27 of SEPP (Precincts—Central River City) 2021 is irrelevant at this stage as the flood management strategy referred to is dated August 2009 and will likely be modified or changed as a result of the current considerations and analysis by the NSW Department of Planning, in regards to flood mitigation strategy and associated planning impacts, alongside the current proposed Riverstone Town Centre Plan • second and even third opinions should be obtained about the flood impacts of the proposal instead of relying on 1 report • the current stormwater infrastructure does not have the capacity to take all the water from the new surrounding developments, let alone the overflow that will occur from the diverted and displaced water from the Sakkara site • given the recent Independent Flood Enquiry and the Flood Advisory Panel modelling and recommendations for the Basin (as a high risk area) it is surprising that you are even considering the DA. • is the proposed filling of the land the reason that 50% of surrounding properties have a new PMF flood level and Riverstone is now a high risk flood zone area	

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• compensation must be paid to all people in the floodplain affected by the proposed filling if insurance increases or homes are impacted by flood • we are not allowed to fill on our property because this makes it flood elsewhere on someone else's property, but this applicant can fill 3.9 million cubic metres • a large lake should be built on the Sakkara site to offset the loss of flood storage by filling on the site • filling that has already occurred to deliver residential development in Marsden Park and Schofields has already raised the flood levels on properties in this area. The proposed filling will only exacerbate this issue • the development will change the contour of the water way and where places weren't affected by this particular development will now be directly impacted • we are concerned that if this is approved that anyone and any entity that will be adversely affected will have a hard time legally proving that the developer has further caused the flooding issues to be worse in the future. • what guarantees are there that no deaths will occur and that homes/properties that were never flooded will not be affected due to increased flooding this proposal will result in. Not only a guarantee from those supplying the flood modelling, but also from Sakkara, the State Government and every employee from Council that was involved in making the decision. This guarantee must be signed prior to approval of the development • all the data provided on flood modelling is just hypothetical. How do you know that filling in a massive amount of the flood plain is not going to cause water to bank up on both sides of the development and cause more flooding either to the local area or up and downstream from the local south creek and its contributory's • it is necessary to consider the downstream flood impacts of the extensive civil works proposed in this Development Application on Eastern Creek, South Creek and the Hawkesbury River in both flood heights and velocity. With the low-lying floodplains downstream from the development, the increase overland flows into Eastern Creek and South Creek that will occur as result of the extension civil works has the potential to adversely impact Hawkesbury, particularly in the suburbs of Windsor, Mulgrave and McGraths Hill. Further assessment should be made to determine the extent of downstream impacts. • there is no evidence of consideration of climate change in the flood modelling provided in the accompanying document in support of subject application. It is	

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becoming increasingly more imperative to consider climate change in flood modelling to ascertain the true potential extent of impacts. • it is necessary to consider the impact of the proposed development on water quality at both the local and regional scale. With the alteration of direction of overland flow, velocity and volume of flood water, impacts on the degree of turbidity and sedimentation are likely to arise, with consideration of the resulting impacts on Eastern Creek and the greater Hawkesbury-Nepean catchment required.	
EVACUATION: • There is no provision for roads in the DA to allow safe evacuation during flooding or other emergency during or post construction.	This development application relates only to site filling and ancillary works that accord with the planned intentions for the Riverstone West Precinct. Emergency management measures that relate to the future development and use of the Precinct will necessarily need to be addressed in future development applications, when the specific nature of those developments is known. Only temporary haul roads are proposed in this application. Notwithstanding the above, a Flood Emergency Response Plan is included as an Appendix of the Floodplain Management Strategy relied on by the proposed bulk earthworks development. It provides evacuation principles and routes for the proposed development. It demonstrates that appropriate flood emergency response planning can be successfully implemented for each intermediate stage of development and for the ultimate development scenario for the Precinct. It provides evacuation principles and routes for the proposed development that will ensure people can safely occupy the land and evacuate in the event of a flood. Our traffic and engineering experts, Sydney Trains and Transport for NSW have all assessed the application and found it satisfactory, subject to conditions.
IMPORTED FILL MATERIAL: • Consolidation of the fill material and the underlying subgrade can be significant given the height to which fill materials are placed. This can be potentially detrimental to buildings, roads and drainage systems located on the fill • How will you police the truck loads to ensure virgin soil and not asbestos, refuse or hazardous waste is imported to this area that is only 40 metres away from Eastern Creek? What penalties will apply for breaches in the event unsafe fill is imported and will Council and the state government monitor the development closely to ensure there is no health or safety or environmental risk to the children and residents • Amount of fill proposed is excessive	Conditions of consent have been imposed requiring compaction certificates to be produced relating to compaction requirements to verify that the correct compaction requirements have been met. Future applications for built form and road construction will need to address being built on filled land. Conditions of consent have been included requiring only clean Virgin Excavated Natural Material or Excavated Natural Material to be deposited/imported on site. Validation of the imported fill material will also be required by a suitably qualified registered contamination consultant at the source and the sign off for the load must be presented at the gate house prior to entry at the site. The applicant will need to archive the validation certificate/report so that Council can do random checks if required. A condition has been included accordingly. Infringement

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• The fill height exceeds the maximum height of 3m above natural ground level and in some areas reaches up to 8m • Why has no Environmental Protection Licence been obtained • It is unclear what level the development proposes to fill to	Notices incurring a monetary penalty will be issued by Council where this is not being complied with. The proposed importation of 3.9 million m^3 of fill was envisaged by the Department when it released this Precinct in 2009 and to realize the development potential allowed by the prevailing instruments. This is the only way that future development can occur. The filling is required for the precinct to be developed in line with its approved zoning above the 1 in 100 year flood level. This filling will be undertaken in 5 stages over the course of many years. Fill heights for the site are prescribed in Figure 20 of the Riverstone West Precinct Development Control Plan 2009. An Environmental Protection Licence is not required for the proposed fill works. Concurrence from the Environmental Protection Authority is also not required for the proposed works. Conditions of consent have been imposed that require the fill material to be imported to only be clean virgin excavated natural material. The civil engineering plans submitted have sections which show the fill pads all achieve a minimum 17.3m Australian Height Datum and fill above that height to varying heights to ensure sufficient gradient is provided to allow water to be conveyed over the pads to the proposed basins.
STORMWATER INFRASTRUCTURE: • An OSD is proposed as part of the development draining into Bandon Road, the timing, and details of this are not mentioned in this report. • Capacity of the existing culverts across Bandon Road to handle the increased flows from the development, if found, are to be required to be amplified. Hawkesbury City Council will not fund amplification cost of the existing drainage system and the associated road pavement reinstatement works. • Details of impact on the stormwater conveying structures downstream of Bandon Road Culverts needs to be identified and addressed. • Details of impact on water quality due to the proposed development on streams/creeks located within the Hawkesbury City Council should be assessed accordingly. • Water quality of Eastern Creek will be impacted by erosion of fill material • What percentage of the water that lays on this site will be directed into the detention basin? • How big and where will the detention basin be?	Onsite Stormwater Detention is not proposed as part of the development. The current application is for bulk earthworks only which will not change the impervious percentage from current conditions or volume of flows. Peak stormwater flows will not be increased as part of the proposed works and therefore will not change the flow rate or the capacity of culverts across Bandon Road. Therefore, no works are proposed on Bandon Road. Any upgrade of Bandon Road to cater for the additional loadings will need to be carried out by the applicant at their cost. Sedimentation basins will be provided at all discharge points to ensure stormwater runoff is captured and appropriately treated prior to discharge from the site. Flood velocity impacts are discussed in the flood report prepared by Advisian for the applicant which accompanies the application. The flood report concludes that there will only be minor localised increases and will not result in any change in risk to life or property. The proposed development does not significantly alter the direction of overland stormwater flow, with all major overland flow paths generally being retained in similar locations. Sediment and erosion control measures are also to be implemented such as: • sediment fencing downstream of disturbed areas,

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• Once the detention basin reaches capacity, where will the excess water be released to?	• dust control measures, • placement of hay bales or mesh and gravel inlet filters around and along • proposed catch drains and around stormwater inlet pits • stabilised site access at the construction vehicle entry/exits to avoid sediment spreading onto the surrounding road network. Any stockpiled material, including topsoil, will be located as far away as possible from any associated watercourses or temporary overland flow paths. Sediment fences will be installed to the downstream side of stockpiles and any embankment formation. All stockpiles and embankment formations will be stabilised by hydroseeding or hydro mulching to prevent erosion into the creek. The submitted plans state that about 120.4 ha will be collected by the 17 proposed sediment basins. This area covers the proposed earthworks pads. Some of the site that is outside the scope of work does not collect into the basins. As such we are unable to provide the percentage. The civil engineering plans provide details of the basin volumes which range from 559 m^3 to 2,793 m^3. If the capacities are reached, the basins will overflow to the proposed on-lot catch drains or the creek line.
HISTORICAL ACTIONS OF THE DEVELOPER OF THE SITE: Past behaviour of the developer shows that they have a complete disregard for the community through their illegal activities and therefore cannot be trusted to carry out the proposed works legally: • Non-compliance with hours of operation imposed in approved development applications. • Trucks arriving at the site all hours of the night including Sundays. • What actions will Council take if the applicant does something wrong as they have done in the past	The proposal is subject of a separate application and we have imposed conditions of consent that must be complied with by the applicant. These include specific hours of operation being 7.00am - 6.00pm Monday to Friday and 8.00am 1.00pm Saturday with no access on Sunday or public holidays. The traffic management plan will also include these operating hours. In the event of non-compliance with these conditions of consent, investigations will be launched and potentially infringement notices issued to the developer. The community can report any non-compliances with the above operating hours to our Compliance Team (Contact: 5300 5920).
TRAFFIC IMPACTS, CONCURRENCE FROM TFNSW AND COUNCIL: • the existing road network cannot support the required truck movements. • the existing traffic situation is already problematic and will be exacerbated by the development leading to increased danger, congestion, longer commute times and decrease in quality of life. • The level crossing on Garfield Road is already heavily congested and this development will create only generate more traffic at this location	The traffic strategy has been developed to minimise impacts on the surrounding road network. The key concepts underpinning the strategy are: • To avoid the Garfield Road level crossing and Railway Parade altogether • To limit truck movements per hour It is estimated that 50% of trucks will arrive via Garfield Road West and 50% via Bandon Road (i.e. 5 trucks per hour from each direction) while all trucks will

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• There is already insufficient public transport and parking at train stations • There is no upgrade proposed to Garfield Road in this application • the large number of trucks that will import the fill will damage local roads leaving them dangerous and costly to repair • Trucks entering Carnarvon Road to take the soil through Garfield and Riverstone Parade will create chaos with already struggling traffic conditions • So much new development happening that the current infrastructure cannot accommodate • What will stop the developer from making the temporary roads proposed permanent • Riverstone Station carpark is not large enough to accommodate commuters • There are no turning provisions at any of the intersections along Garfield Road West and safety concerns are raised at all intersections along Garfield Road West that will require upgrades if this proposal proceeds • The traffic report has not provided any traffic information when the site is partly and fully developed and the traffic impacted in the wider area in the future. • The spine road is not included in the application • How long will the temporary haulage road be in place and what is it's function? • Where are the new roads located • The DA relies on Bandon Road's upgrade which is only a proposal that has not received funding • if the creek is partially blocked it will cause redistribution of flood flow which will impact the site and surrounding properties • The traffic impact assessment is inadequate and does not fully address the impacts of the truck movements on local access, congestion and road safety. I does not acknowledge the existing conditions, the long queues and delays along Garfield Road West It also has incorrect calculations for truck movements and provides no evidence for source of the fill • A detailed traffic impact from a suitably qualified and independent consultant should be requested • The overall framework 3.0 Street Network and Design of the Riverstone West Precinct Development Control Plan 2009 states that the street network and design objectives are to provide an acceptable level of access, safety and	depart via Bandon Road (i.e. 10 trucks per hour with 8 travelling south on Windsor Road and 2 travelling north. To ensure that no trucks approach the Garfield Road West level crossing, the access driveway to the haul road off Garfield Road West will be a left in only road that can only be accessed for trucks approaching from Richmond Road to the west. Trucks will therefore not be able to nor will they be permitted to arrive/depart from/to the east on Garfield Road or along Denmark Road. The applicant's traffic consultant TTPA's traffic impact assessment submitted with the DA concludes that the proposal will not have an unacceptable impact of the road network. Notwithstanding the findings of the traffic report, the development application was referred to the State's Transport for NSW (TfNSW) dated 9 August 2023 for comment in accordance with the State Environmental Planning Policy (Transport and Infrastructure) 2021 as Garfield Road West is a TfNSW managed road. TfNSW reviewed the submitted information and raised no objections to the proposed development. TfNSW recommended 2 requirements to be included as conditions of consent which have been imposed accordingly. These requirements are: • The design and construction of the sealed driveway off Garfield Road West shall be in accordance with TfNSW requirements. Detailed design plans of the proposed driveway are to be submitted to TfNSW for approval prior to the issue of a Construction Certificate and commencement of any road works. • A Road Occupancy Licence is to be obtained from Transport Management Centre for any works that may impact on traffic flows on Garfield Road West during construction activities. Our traffic engineers have also reviewed the application and have confirmed that the proposal is not expected to have significant adverse traffic implications on the local road network, subject to the preparation of a suitable traffic management plan which details as a minimum: • the prescribed route for access (i.e. Garfield Road West and Bandon Road) • the prescribed route for egress (ie. Bandon Road) • the hours available for access (i.e. 7.00am - 6.00pm Monday to Friday and 8.00am 1.00pm Saturday with no access on Sunday or Public Holidays) • the co-ordination and communication to avoid any "bunching" of arriving or departing truck movements • the maximum truck speeds within the site and on Bandon Road particularly

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convenience for all street and road users within the Riverstone West Precinct, whilst ensuring emergency access and egress and acceptable levels of amenity and minimising the negative impact of traffic. This is not the case in this application. • The traffic report makes no mention of the existing potholes on access roads • Will the developer be required to enter into a road maintenance agreement to fund the increased maintenance requirements associated with the truck movements • All access to the site should be from the north of the site and no access allowed from Garfield Road West • How will vehicle movements be monitored to ensure the routes outlined in the DA are adhered to • The M7 Richmond Rd intersection is already a bottleneck during peak hours and the influx of additional trucks as proposed in the development would exacerbate this issue • In the event of an accident on either Richmond Road or Windsor Road or both, how will heavy vehicle movements be directed to the proposed development site? • With the influx of 20000 workers into the proposed development site, has future infrastructure/road improvements been considered. Garfield Road and Bandon Road already can't cope with existing traffic. • Once the development is completed, no mention of further traffic movements has been discussed or considered putting further pressure on already severely congested local roads • Increased trucks will damage roads that are already in bad condition • Truck and dog drivers do not obey the road rules • Cut and fill from soil on-site should be used instead of imported • Roads Act 1993 approval must be sought from Council as the Denmark Road project is not complete	• approaching and departing the railway level crossing • the prohibition of movement onto the level crossing unless there is quite • adequate space available to “clear” the level crossing • The developer shall comply with the “7.0 Driver Code of Conduct, Monitoring & Review described in Traffic Impact Assessment dated April 2023 prepared by ttpa. The statement of environmental effects states that 12,000 jobs are estimated to be provided once the Riverstone West Precinct is fully developed, not this earthworks development. For that to occur, new roads including a north/south spine road will require construction in line with the road pattern shown on the Indicative Layout Plan for the Precinct. Signalised intersections at the spine road's intersection with Bandon Road and Garfield Road West will also need to be delivered. These road upgrades will occur through approval of a separate future development application. Conditions of consent have been imposed to ensure that the developer repairs any damages caused to the road network used to service this development. Conditions of consent have also been imposed which require the upgrade of Bandon Road from the haul road entry point to the TransGrid access. A deceleration lane of at least 30 metres is also required to be constructed before arriving at the proposed driveway crossing off Garfield Road West. Transport for NSW have recently confirmed that funding has been allocated to progress the planning for the Bandon Road Corridor Upgrade and Extension project. See here: https://www.transport.nsw.gov.au/projects/current-projects/bandon-road-corridor-upgrade-and-extension-north-west-growth-area A conditions requiring a Roads Act approval has been included in the consent. The temporary haul roads will be in place for the lifetime of the earthworks which will take place over a number of years as each stage of works commences.
WESTERN TRAIN LINE: • The rail corridor will be impacted by the development	Sydney Trains have assessed the application and have provided their concurrence subject to conditions which have been included in the consent
ENVIRONMENTAL IMPACT:	Environmental impacts associated with any future development application or State Significant Development will have to be dealt with in those applications.

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• Will Council and the state government require the land use to be environmentally safe, not just this decade but into the future?	Conditions of consent in any future consent granted will ensure that the land is used in a safe way
SEDIMENT CONTROL: • Mud and dirt from trucks will end up on roads outside the site. Where does the water from the truck wheel wash bays go?	Conditions of consent have been included to ensure that all roads adjoining the site must be kept clean and free of materials. Infringement Notices incurring a monetary penalty will be issued by Council where this is not being complied with. Wash-down areas for trucks leaving the site and how they function will be detailed on the soil erosion and sediment control plans.
POLLUTION RISK: • What occurs in the event of a spill such as diesel?	Conditions of consent have been included that require the applicant to inform Council of any pollution incident that occurs in the course of carrying out the works where material harm to the environment is caused or threatened as required under Protection of the Environment Operations Act 1997.
CURRENT USES: • Will the current use of the development site for rusting containers and dumped vehicles be restricted with the site becoming a more attractive industrial area?	Where current uses are impacted by demolition or earthworks, they will have to cease and be removed from the site or reused on-site in a safe manner. Conditions of consent have been imposed accordingly.
GREENSPACE: • Will residents lose all access to green spaces by this development • This land should rather be developed into much needed parklands	Part of the land is zoned E2 - Environmental Conservation. The riparian corridor adjacent Eastern Creek will be restored and in some areas will be dedicated to Council as part of future applications. This development will also facilitate the future development of recreational space in the north west of this Precinct in the RE2 - Private Recreation zoned part of the site.
ABORIGINAL ARCHAEOLOGY: • Will the developers be required to protect the Aboriginal heritage of Riverstone including requiring the creek, the trees and the fauna to receive a higher level of protection and rehabilitation as it is still one of the last stands of Cumberland left in BCC as well as one of the last waterways that drains the land in times of flood	The applicant will need to obtain a Controlled Activity Approval from the Department of Planning and Environment-Water for any works close to the creek. The riparian corridor will also need to be rehabilitated in line with a vegetation management plan that is to be provided as a deferred commencement condition of consent. A Biodiversity Development Assessment Report accompanies the application which has been assessed by our ecologist and found to be satisfactory subject to conditions. The applicant will also have to comply with Aboriginal Impact Permits that have already been issued for the site. All works will need to cease if any previously unidentified Aboriginal objects are identified during the works and conditions have been imposed accordingly to address unexpected finds.
DEMOLITION WORKS: • Who is going to monitor the safe removal of the asbestos when the buildings are demolished? Will it be buried under all the fill they are importing?	This will be the responsibility of the demolisher. Conditions of consent have been included that all demolition work and handling of materials shall be in accordance with Australian Standard 2601-2001 (Demolition of Structures) and all applicable SafeWork NSW requirements including the Code of Practice for the Safe Removal

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	of Asbestos" – National Occupational Health and Safety Commission: 2005. No approval is sought or being granted in this proposal for burial of asbestos.
JOB CREATION • It is forecast that the development will create 20,000 jobs. It is unclear where these estimates come from. Are these during construction, on completion of the project, permanent positions or temporary positions, long term or short term?	It is unclear which document refers to 20,000 jobs being created, however that number of people could only happen in the long term once the Precinct is fully developed and operating as the earthworks proposed will not generate many jobs.
DUST IMPACTS • Dust impacts from earthworks and importation of fill will produce air pollution and impact on people with respiratory issues	The applicant has proposed several dust control measures for the construction phase of the development. These include but are not limited to: • cease operations when there are any visible dust emissions until mitigation measures applied are adequately controlling dust or conditions improve • retain existing vegetation until it is required to be removed to undertake the works • stage works to minimise areas of disturbance at any one time • develop and implement a Construction Dust Management Plan prior to construction commencing • dust suppression using water sprays or dust suppression surfactants to ensure no visible dust emissions • install temporary covers over areas of earthworks where possible. • locate stockpiles away from sensitive receptors, drainage paths, easement, kerb or road surface. • covering/tarping of stockpiles – this may include the use of mulch temporarily laid over the stockpile. • enforce 15km/hr speed limit for vehicles on site. • cover all truck loads entering and leaving the site. • Vehicles leaving the site will be cleaned of dirt and other materials to avoid tracking these materials onto public roads. Conditions of consent have been imposed that require the recommended mitigation measures to be implemented Notwithstanding the proposed dust mitigation measures, standard conditions of consent have been included to further ensure that dust emissions are minimised. Any justified complaint will be investigated and appropriate action taken where required.

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NOISE IMPACTS: • Objection to the level of noise disturbance and would prefer that activities are restricted to a shorter daily timeframe with no activity occurring at weekend and for periods of peace during the day • Have the low frequency vibrations that emit from trucks been evaluated? • Years and years of noise associated with the development will be mentally draining • Will noise levels be monitored by EPA? • The activities on site already show non-compliance with hours of operation imposed in approved development applications. Illegal truck activity outside of operating hours though trucks idling beyond the approved operating hours. Trucks also arriving at the site all hours of the night including Sundays.	A Construction Noise and Vibration Management Plan (RTA, dated April 2023) was submitted with this application. The following recommendations in the plan provide noise control recommendations to reduce noise impacts to sensitive receivers that will be implemented: • regularly inspect and maintain equipment to ensure it is in good working order. • provide special attenuation to any use and maintenance of 'noise control' or 'silencing' kits fitted to machines to ensure they perform as intended. • avoid any unnecessary noise when carrying out manual operations and when operating plant. • simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be limited/avoided where possible. • the offset distance between noisy plant and adjacent sensitive receivers is to be maximised where practical. • where practical, plant and equipment that are used intermittently are to have throttle setting reduced or shut down when not in use. Any plant and equipment that will not be used for extended periods of time are to be switched off. • trucks engines should be turned off as opposed to idling, if feasible. Also, non-tonal reversing beacons should be considered for the on-site vehicles. • a management procedure will need to be put in place to deal with noise complaints that may arise from demolition activities. Each complaint will need to be investigated and appropriate noise amelioration measures put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits. • good relations with people living and working in the vicinity of the Riverstone West Precinct should be established at the beginning of a project and be maintained throughout the project, as this is of paramount importance. Keeping people informed of progress and taking complaints seriously and dealing with them expeditiously is critical. The person selected to liaise with the community must be adequately trained and experienced in such matters. • Implementation of noise control measures such as those suggested in Australian Standard 2436- 2010 Guide to Noise Control on Construction, Demolition and Maintenance Sites, are expected to reduce predicted earthwork noise levels.

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	Conditions of consent have been included that require the recommendations of the applicant's Construction Noise and Vibration Management Plan to be implemented before works commence and during earthworks activities. The State Environmental Protection Authority will not be monitoring noise levels. Conditions have been included which require that any activity carried out not give rise to air pollution (including odour), offensive noise or pollution of land and/or water as defined by the Protection of the Environment Operations Act 1997. Upon receipt of a justified complaint in relation to noise pollution emanating from the premises, an acoustical assessment will also need to be carried out in accordance with the requirements of the Department of Environment and Conservation's Environmental Noise Management - NSW Industrial Noise Policy and provide recommendations to mitigate the emission of offensive noise from the premises. The report shall be prepared by an appropriately qualified acoustic consultant that is a member of the Association of Australian Acoustic Consultants and shall be submitted to Council for consideration.
LAND USE PERMISSIBILITY: • Permissibility of the proposed development. The development should not even be considered	Bulk earthworks is a permissible facilitating use in the zones relevant to the land. Council has a statutory obligation to assess and process the development application in accordance with relevant legislation and environmental planning instruments. The application will ultimately be determined by the independent Sydney Central City Planning Panel as this proposal is a Regionally Significant Development. Our role is to assess the application, draft a report and provide a recommendation to the panel. The Panel will then make the final determination of this application.
HERITAGE IMPACTS: • The heritage buildings must be conserved • It is not appropriate to leave the buildings in a state of disrepair until decisions about their eventual usage takes place. This could be up to a decade away. Demolition by neglect is not acceptable. • All work that has been identified in the Heritage Works Schedule must be undertaken as a priority. • A schedule of works needs to be prepared which contains a timeline of when the work that has been identified as needing attention is to take place. • The buildings must be continually monitored and any work identified as being required to keep them in good condition must be completed promptly.	The locally significant heritage buildings on the site are not proposed to be demolished. They will be need to be preserved in stages as the staging of the earthworks is undertaken to ensure that they are conserved to avoid further dilapidation. A deferred commencement condition of consent has been included requiring the submission of an updated Conservation Management Plan prior to the consent becoming operational. This plan will deal with the scheduling of conservation works and how the works will be staged. Our heritage experts require that temporary protective works be in place prior to the commencement of the proposed bulk earthworks. The Heritage Interpretation Strategy will be required to address all historical events related to the Meatworks site and buildings. The buildings are proposed for demolition in this application.

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• No mention has been made to either keep the buildings or have a large clearing made where six local heroes of our community lost their lives in a catastrophic fire at Riverstone Meatworks that affected our community for many years. This is a very significant site to the community. As noted in the Heritage Interpretation Strategy, I believe that many people in our community will be up in arms to find that the place where six gentlemen lost their lives is being written off for signage as their memory. We require a fenced area in Stage 1 of the DA where people may go to pay their respect for the loved ones that lost their lives (not just signage in the plaza). • Butchers row was built between 1900 and 1919. While they are not heritage listed, they are of importance to Riverstone, same as the historic railway building and other heritage listed buildings in the vicinity. These important buildings will be destroyed if the development goes ahead.	
PROPERTY VALUES • Impacts on property values, ability to sell property and insurance premiums	Impacts on property values are not a planning consideration. There is no evidence to suggest the development proposed will devalue property in the area. The Department has advised that this proposal will have an immaterial impact on flood levels outside of the precinct.
ENVIRONMENTAL IMPACTS: • Impacts on wildlife, protected species and ecosystems • Potential runoff of soil into the creek • The natural landscape and drainage patterns will change as a result of the filling • The raised land will have a permanent visual impact • The development will cause the loss of the small rural town feel • The proposal is causing unnecessary stress and anxiety in the community and will bring personal risk and hardship to rate payers for the benefit of a single developer. How will the developer compensate the community for this • The development is not beneficial enough to waste effort and money on • What will happen to the Riverstone Wetland as a result of the DA • No social impact assessment has been undertaken • No social licence has been obtained • Has the applicant undertaken environment, historical and Aboriginal studies	It is considered the potential impacts of the development can be satisfactorily mitigated through conditions of consent. As such, deferred commencement conditions of consent have been included to ensure that the biodiversity, heritage and engineering information that is still required is produced by the applicant and approved by Council prior to the consent becoming operational. The rural feel of the land will change, but the vision for the precinct since 2009 has been for industrial and business park type development. The visual impacts of the earthworks pads will also be staged and begin in the northern end of the site. The earthworks pads will change into terraced retaining walls with landscaping in accordance with the development control plan in the future when applications are lodged for built form. A social impact assessment is not considered necessary for the purposes of a bulk earthworks development as it does not include any end land uses. The developer made a financial decision to lodge this development application regardless of the public's opinion on the development.

Issue	Planning comment/response
• What will be the social, environmental and economic legacy of this development for the community and how will the proposal enhance the continuity of the community • in whose interests is this disruption of the local environment, the local infrastructure and the local community • Residents cannot see the economic or social value of this development • The risks associated with the development outweigh the benefits	
VIEWS ON COUNCIL'S ROLE IN THE ASSESSMENT: • approval of the development is politically driven, not for the good of residents • approval of the development is a cash grab by Council which is putting profit over people • disappointment that Council has even exhibited this DA for public comment • Council is conspiring with external sources that unfairly degrade their own people • Council doesn't care about its residents and the impacts of its decisions • the proposal will benefit Council but not ratepayers • why Council would even consider such a proposal • Council should have never rezoned the Riverstone West Precinct • there are other DAs lodged at the same time as this one at this site, so how can Council even consider more applications • approval will confirm Council pandering to developers at the expense of the community • why have Eastern, Bells and South Creek never been cleaned • the existing condition of streets and pavements in Riverstone is making it undesirable due to Council's lack of maintenance • council has already approved fill in flood prone areas that have already adversely affected residents, so what cumulative impact will this development have • why don't Council and State government listen to the people that have already had to deal with major floods in this area • why did Council not push back when the SEPP was being amended by the Department instead of being bullied by the Department • Council must be held liable for future flooding that will be intensified by this proposal as Council is responsible for its approval. Council must cover the cost of	Council has a statutory obligation to assess and process a development application that has been lodged in accordance with relevant legislation and environmental planning instruments. The application has been assessed by Council only on the information provided by the Department and the prevailing planning controls. The application will ultimately be determined by the independent Sydney Central City Planning Panel as this proposal is a Regionally Significant Development. Our role is to assess the application, draft a report and provide a recommendation to the Panel. The Panel will then make the final determination of this application. Ultimately, Council has relied on the Department's advice on the application which has largely informed our recommendation to the Panel. Council is neither the developer of this land nor is Council the applicant for the proposal. We have received a development application from an external applicant which we have a statutory duty to process. The only financial contribution we receive in the application process is the administrative processing application fee which we charge all applicants in line with our Council adopted Goods and Pricing Schedule. Rezoning of this Precinct was a State undertaken process. Notification of the application was done in line with Section 8A of the Environmental Planning and Assessment Act 1979 and our Community Engagement Strategy and Community Participation Plan 2022. At the time when the Department was amending State Environmental Planning Policy (Precincts - Central River City) 2021, Council did make a submission and raised the following concerns: • the principle of allowing for a flood modelling tolerance level, which was not there before • the proposed revision of Clause 3.27 of the SEPP not being consistent with the principles of the State Flood Prone Land Policy as it now provides different

Issue	Planning comment/response
people replacing their belongings, homes and businesses when the inevitable flooding occurs • Council has taken our rates and new suburbs all around us have benefited whilst nothing is spent on improvements on established suburbs. Most of us have no footpaths, sewerage and other infrastructure • wrongful death lawsuits that will arise from Council's negligence will uncover which Council officers were responsible for approving the development • if in the future if it is found that these earth works create flooding in the town centre of Riverstone, a community class action could be acted upon which could include Council and the developer • local Councillors have been useless and have provided no assistance or interest in assisting its constituents. There will be major political backlash if this development is approved • why is Council not disputing the refusal of the planning proposals for West Schofields, Riverstone Town Centre and Marsden Park North. It appears corrupt that Council has not taken action. • Council's refusal of applications for relatively minor improvements which would have had very little to no impact on the flood level because of the potential impact to the flood level, yet this development is allowed to fill the flood plain • is Council building dam walls to flood housing so that Council can build new homes like other states • The decisions made by Council now which include the alterations to hydrology proposed by this DA will continue to affect all those who live in and nearby to this catchment forever • Council has broken promises by promising new infrastructure to benefit the astronomical number of families moving into the area but have not gone ahead with any new infrastructure, including new shops, parks and services yet allow this development to proceed • Electoral boundaries and suburb names have been strategically changed to confuse all involved • Do Council staff and approval authorities have the necessary qualifications to assess the application • Council is already approving childcare centres with underground parking in residential areas next to family homes as well as overcrowded slum areas	flood planning controls to this Precinct than those that apply anywhere else across the State • the revised Clause 3.27 is no longer guaranteeing a 'no net loss' of floodplain storage • the need for clarity in relation to how the cumulative impacts of development in the floodplain in Riverstone West are to be assessed • the inconsistencies between the Standard Instrument Clause 5.21 relating to flood planning controls across the North West Growth Area including Riverstone West and the proposed flood planning criteria proposed for the precinct • the adequacy of the supporting technical reports • the need for an extensive review of the DCP if the SEPP amendment was to proceed. Despite the issues raised, the Department gazetted amendments to State Environmental Planning Policy (Precincts - Central River City) 2021 on 16 December 2022, regardless of Council's submission. The modelling undertaken by Advisian and verified by Cardno (now Stantec) on behalf of the then Department of Planning during the SEPP amendment investigations from 2020 to 2022 indicates an immaterial impact on off-site flood behaviour from this development. The requirements of the amended SEPP prevail over the DCP controls in the event of an inconsistency. Council also received many representations from Councillors during the course of this application who brought the concerns from the community to this proposal to our attention to take into consideration in our report. Council did not dispute the refusal of the residential planning proposals for West Schofields, Riverstone Town Centre and Marsden Park North because we supported the Department's views on flood safety issues for future residential areas. A State led rezoning process is again under way for these 2 precincts looking for alternative less sensitive uses in these areas where people could not live. It is noted that many of the issues raised against Council relate to existing issues that have not been caused by the proposed development as it has not yet been determined and are therefore not considered relevant. Some of the issues raised are also not relevant to the proposal.

Issue	Planning comment/response
• If Council supports this development there needs to be an investigation by ICAC as to why	Given the history and unique circumstances of this proposal, the Department advises that it does not believe the current proposal will set an undesirable precedent regarding the capacity of the floodplain or the direction of flows on other properties. So where proposals outside this precinct have been rejected in the past because of the potential impact to the flood level on adjoining land, similar developments will continue to be rejected as they are not part of the Riverstone West Precinct Plan area. It is noted that some of the issues the community have raised do not relate to this proposal and are not considered relevant to its assessment.
ROAD FUNDING • Funding has now been approved for a project that appears to benefit the developer more than the community. Labor government have found money to fund Bandon Road's upgrade and underpass and extension of Windsor Road. This appears to be a solution to benefit this development to go forward • Delivery of infrastructure upgrades and lack of existing infrastructure to cope with this proposal • The new shopping centre, the overpass bridge at the Railway crossing and Garfield Road upgrade have not started but rumour has it the funding has been spent instead of allocating the funding to these resources. • The developer is making a contribution to build the Bandon Road by pass. This additional contribution should be focused on flood mitigation if the DA is to be approved.	Funding for the road network outside of the proposed development is a State matter relating to the State Infrastructure Contributions collected for new development in the Growth Centres. This proposal for bulk earthworks was referred to the State Transport for NSW regarding its impact on the arterial road infrastructure and they have raised no objection to the proposal subject to conditions of consent. Notwithstanding the above, conditions of consent have been imposed requiring the developer to upgrade Bandon Road up to the haul road from the TransGrid access to cater for the truck movements associated with the development.
CONTAMINATION: • in respect to contamination from previous events regarding illegal waste disposal that have occurred at the subject site and the current industrial use of the land, the concern for impact of water quality is heightened with the risk of leachates and pollutants entering the river system if proper remediation and management is not conducted. • is there an independent source that can guarantee us that asbestos from the current buildings to be demolished will be remediated legally versus being buried on site illegally?	A range of environmental assessments and audits have been undertaken at the site which are outlined in attachment 4 and 6 of this consent. They include assessment of illegally dumped materials at the north east of the site. That matter formed part of an ICAC investigation. The person responsible was criminally charged and received a custodial penalty. This contamination has since been capped and contained in the north east of the site. A validation report accompanies the application which validates the capping. Accordingly, this contamination has been addressed and will be managed into the future through an Asbestos Management Plan which also accompanies the application. Conditions of consent have been imposed which require an interim letter of advice to be submitted to Council at the completion of each stage of works as well a full site audit statement and report to be prepared for the entire site after the final

Issue	Planning comment/response
• The site has already been subject to an ICAC enquiry for illegal dumping of contaminated waste. Was this waste ever been removed or has it simply been capped just to be exposed in the next flood • Has action previously been taken against the owners of this site for importing and placing unauthorised fill into the flood plain? If so, what action was taken and was the fill ordered to be removed as required? • They imported tonnes of fill on the property. The developer was fined and had to remove some of it. This illegal venture was poorly managed by Council in terms of response to complaints from the community	stage of the earthworks. These interim advice letters and site audit statement will have to be prepared by an independent EPA accredited site auditor. The final site audit statement can only be issued after the site is fully remediated and validated by the site auditor that the land is suitable for the intended industrial/commercial purposes. Our Environmental Health Unit have assessed the application and supporting documents and have provided conditions of consent that require the submission of the following information prior to commencement of works: • the above-mentioned interim letter of advice, site audit statement and report for the site • a Long-Term Environmental Management Plan for the ongoing protection, maintenance and management of the asbestos containment cell which managed the illegally disposed waste. It is required to be attached to the site audit statement • the location of the cell is to be registered on the Deposited Plan and as a restriction on the title of the land
STATE SIGNIFICANT DEVELOPMENT • The project has an investment value of over $30 million which sets this a State Significant Development (SSD). SSD would normally require a Environmental Impact Statement (EIS) in order to fully consider the impacts of the project. It needs to follow the guidelines set out by the Department	The development is regionally significant development under Schedule 6 of State Environmental Planning Policy (Planning Systems) 2021 being general development over $30 million, not State Significant Development.
PUBLIC NOTIFICATION • Why was notification done so close to Christmas. At least 6 months should be granted for public submissions to be received • The lot boundary is not the same location as indicated on the map on the webpage. This means that some people in Riverstone might not have written an objection as it seems to be a lot further away, not all along the train tracks and consequently railway terrace. • Community consultation should have occurred prior to lodgement of a development application • The development has not been widely communicated to local residents. It should not proceed until further information and consultation is available to these communities • Hawkesbury Council has to be notified of this development	The timing of notification was due to Council requesting the applicant to provide enough information for the public to be adequately informed about what the development proposes. Notification was then done in line with Section 8A of the Environmental Planning and Assessment Act and our Community Engagement Strategy and Community Participation Plan. The notification period was from 8 November to 6 December 2023 specifically so that the public would not be away on holiday during the notification period. Notwithstanding this, we continued to accept submissions after this date. The proposed development was notified to 1715 property owners and occupiers in the locality. That is a much larger notification area than we normally would notify for development applications. The local residents and property owners notified were the same as those notified when the SEPP controls relating to this precinct was being amended. Hawkesbury Council was also notified and has made a submission. No further consultation is required under our Community Engagement Strategy and Community Participation Plan. The public will however have an

Issue	Planning comment/response
	opportunity to voice their concerns to the Panel at the determination meeting for this proposal. It is not clear from the submission which lot boundary map is being referred to. Notwithstanding this, all properties along railway terrace adjacent the train tracks were notified. Council has no control over an applicant's engagement with the community ahead of them lodging a development application
BIODIVERSITY: • Biodiversity Conservation Regulation 2017 needs to be addressed prior to approval • A vegetation management plan must be provided prior to approval of this DA • Non-certified lands should not be impacted by the development	Council's ecologist has assessed the application against the relevant legislation for this site. They have requested the applicant to provide additional information on several occasions which has mostly been provided apart from an updated Vegetation Management Plan. Therefore, a deferred commencement condition has been included requiring the submission and approval of the updated Vegetation Management Plan before the development consent will become operational. The impacts of the development on non-certified land have been assessed by our ecologist. A Biodiversity Development Assessment Report has been provided due to the impacts on the biodiversity values mapped portion of the site. This has also been assessed by our ecologist who finds it satisfactory, subject to conditions including the payment of biodiversity offset credits for the impacted species.
TIMING OF REZONING • How did the rezoning of this land occur prior to others in the flood zone	The Riverstone West Precinct was one of the first release precincts announced by the NSW Government in June 2006 with planning commencing in March 2008 and being finalised on 7 August 2009. Council has no role in the NSW Government's timing for the rezoning of the precincts.
DEPARTMENT OF WATER AND FISHERIES: • Any operation impacting the creek including additional discharge require consultation and appropriate approval from Department of Primary Industries – Fisheries under Fisheries Management Act 1994. A Section 201 permit under Fisheries Management Act 1994 will need to be applied for now prior to DA approval • This land backs onto Eastern Creek and all this importation of fill will stop just short of 40 metres away from the Creek	The application was referred to Department of Primary Industries (Fisheries) who provided comments that the application must be submitted to Department of Planning and Environment-Water for assessment and determination. If Department of Planning and Environment-Water determines that the works do not require a Controlled Activity Approval, then the integrated development must be referred to DPI Fisheries and DPI Fisheries will require a Section 201 permit for dredging and reclamation under the FM Act in order to proceed. The application was also referred to Department of Planning and Environment-Water who provided General Terms of Approval which include a Controlled Activity Approval.
CANCELLATION OF SURROUNDING PLANNING PROPOSALS • Cancellation of planning proposals for West Schofields, Riverstone Town Centre and Marsden Park North as a result of risk to life due to flooding, unsuitable	The timing of the exhibition of this application coincided with the announcements of the cancellation of planning proposals to rezone West Schofields, Riverstone Town Centre and Marsden Park North. This overlapping timing has created

Issue	Planning comment/response
evacuation routes and flood mitigation concerns. No fill was proposed to be imported to these precincts that would've delivered housing and an upgrade to Bandon Road, yet this development is going forward.	confusion and created the impression that what is being applied for in this proposal was enabled by the cancellation of the abovementioned planning proposals. Their cancellation is however unrelated to the subject precinct that was already rezoned in 2009 when precinct specific flood controls were established. The planning proposals to rezone the adjoining precincts were proposed well after the subject land's rezoning was approved. Council is currently pursing alternative land uses for the Marsden Park North and West Schofields Precincts through a state lead rezoning process. Letter's to inform residents of this undertaking were distributed on 10 September 2024
RATE PAYMENTS: • Is Council going to waive the rate payments on land that is now worthless based on the planning proposal's refusal and refund rates that have been paid to Council in the belief that this land would be rezoned the same as other scheduled lands.	Current rate payments are not a matter for consideration in assessing this application. Residents should reach out to our Rates section if they wish to question their rate payments
LEGAL OPTIONS FOR THE COMMUNITY: • What legal avenue can be taken to stop this development • Do residents have a case to take this matter to the Ombudsman for investigation	This is a matter for the residents to obtain their own legal advice on.
MAINTENANCE OF EASTERN CREEK • What scheduled cleaning and dredging maintenance is expected at Eastern creek to improve it's effectiveness	This section of Eastern Creek is not currently funded for creek maintenance. Given the large number of waterways we are required to manage and the limited resources we have, we need to prioritise works based on what is achievable with limited resources. We are currently reviewing how we prioritise our waterway management activities and this will be documented in a new Waterway Management plan. This plan is informed by recent community consultation on the waterways in our City. Details are available on our website https://haveyoursay.blacktown.nsw.gov.au/community-engagement-understanding-your-values-satisfaction-and-interaction-with-our-waterways
FUTURE LAND USES • What type of development is going to occur in this area if the application is approved?	Any development that is permissible in the B7 - Business Park, E2 - Environmental Conservation, IN1 - General Industrial, IN2 - Light Industrial and RE2 - Private Recreation zones
UNCLEAR DETAILS OF THE APPLICATION: • It is unclear what the intentions of the applications are based on the information submitted	The statement of environmental effects and supporting documents submitted explain what the intent of the application is. The main body of this report also details what is proposed.

Issue	Planning comment/response
• The development is in 5 stages. What will the other 4 stages represent? • The staging diagram indicates Riverstone railway station has been moved to Vineyard which has not been in any previous consultation. • It is unclear what the estimated timeline of the earthworks will be • Are existing shops in Riverstone going to disappear?	This development seeks approval for all 5 stages of earthworks as indicated on the engineering plans. The updated civil plans show Riverstone railway station in its current location. It is not proposed to be relocated in this application. Vineyard station is also in its current location. The estimated timeline for the staged site preparation activities is approximately 6 years. The shops in Riverstone do not form part of this application or site and will therefore remain where they are as far as this application is concerned
LACK OF NEW DEVELOPMENT IN RIVERSTONE No new development has occurred in Riverstone in terms of shops, parks and walking areas despite hundreds of new houses being built	The Department cancelled the planning proposal for Riverstone Town Centre which would have enabled this to occur. The proposed development will however provide an opportunity for new development in the area.
DEVELOPER OBLIGATIONS TO SURROUNDING PROPERTY OWNERS If the development is approved, Council must make it compulsory for the developer to raise the height of surrounding property to the same height as theirs as their cost to ensure its safety and the future use of that land whilst maintaining its value. Alternatively the developer must compensate surrounding property owners with similar size blocks of land elsewhere where we can build residential homes. Alternatively the developer must be made to purchase surrounding property at a fair price before the levels are raised	There is no legal requirement for Council or the proponent to compensate other property owners that are not associated with the development or to fill their land or to purchase their land or the like. There is also no legal avenue for Council to make it compulsory for the developer to do any work on land that is not part of this application.

Ref: IRF24/2038

Mr Peter Conroy
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Via: peter.conroy@blacktown.nsw.gov.au; Judith.portelli@blacktown.nsw.gov.au

Subject: Further advice - Riverstone West DCP and DA-23-00740

Dear Mr Conroy

Riverstone West Precinct Development Control Plan and DA-23-00740

I would like to follow up on Council's letter dated 27 February 2024, subsequent meetings with the Department on 13 March 2024, 13 May 2024, and 19 June 2024, and my recent letter dated 28 May 2024.

Background

The matter relates to a unique landholding located adjacent to the T1 Richmond line between Riverstone and Vineyard railway stations, a distance of over 3 km. The site - in single ownership and over 240 Ha in area, was rezoned for employment purposes on 7 August 2009. Historically the site was part of the Riverstone Meatworks. The Meatworks originally owned land on both sides of Eastern Creek, including sites known as Lot 11 and Lot 211.

A range of flood modelling investigations were carried out prior to the 2009 rezoning of the site. The modelling examined various cut and fill scenarios. The final scenario that underpinned the rezoning did not provide for a balanced cut and fill volume on land below the Hawkesbury-Nepean Valley 1% flood level.

As such, the cut and fill strategy associated with the 2009 rezoning of the precinct:

- was not based on an equalisation of cut and fill volumes
- allowed for the net loss of floodplain storage capacity.

The design was based on achieving performance criteria relating to impacts on flood levels and flow velocity. The cut and fill numbers were an output of achieving satisfactory results in the site profiling to deliver the development pads. The primary contribution of Lot 11 to the proposal in 2009 was to provide a local source of bulk fill for Lot 211.

When Worley / Advisian reviewed the modelling without the contribution of Lot 11 it became apparent that the contribution of Lot 11 was not required for the civil works to achieve an immaterial impact on off-site flood behavior. This has since been verified by Cardno (now Stantec) on behalf of the now Department of Planning Housing and Infrastructure during the SEPP amendment investigations between 2020 and 2022.

The modifications to the planning controls implemented by the Department recognise the alternate solution for the cut and fill on the site proposed by Cardno (now Stantec).

Floodplain Management

Historically the Department has not had a policy position on development applications for cut and fill and flood storage.

However, in more recent times the Department has moved towards an approach that involves pursuing a balance of cut and fill in some situations. In this instance, given the history and unique circumstances of this proposal, the Department does not believe that the current proposal will set an undesirable precedent in terms of impact on either the capacity of the flood plain and/or directing flows on other properties.

Consideration of current application

In recognition of the history of this site, a non-balanced cut and fill outcome might still be appropriate for this unique site, and in this regard the following observations may be relevant:

- At the time of the original rezoning of this land in 2009, when this site and the neighbouring site were part of a single project, balanced cut and fill was never proposed. Rather some compensatory cut was proposed on the neighbouring site to offset to a limited degree, the loss of storage capacity in the floodplain that would occur as a result of the fill being placed on the subject site.
- From the outset, rezoning of this land for employment purposes involved some reduction in the storage capacity of the floodplain. The currently proposed development is generally consistent with the development originally intended for the site.
- Any impacts on the loss of floodplain storage capacity that are caused by non-balanced cut and fill, should be considered in the context of their specific impact on the broader Hawkesbury Nepean basin and the limited potential for any future similar development proposals.
- Assessment of the DA should include consideration of the intent and wording of the amendment to clause 3.27 (2) (b) made on 16 December 2022 (requiring the consent authority to be satisfied that the proposal does not materially increase flood levels on adjoining properties in events up to the 100 year recurrence flood) and whether the nature of the proposed cut and fill are site specific only and so should not set a precedent on other sites/DAs.

- With reference to Planning Circular PS-24-001, it is noted that this scheme is for industrial/commercial land uses, and not more flood-sensitive residential land uses.

Council's attention is also drawn to the existing policy context surrounding this matter:

- Standard Clause 5.21 Flood Planning, in the Blacktown LEP 2015
- Clause 1.7.2 of the DCP
- Planning Circular PS 24-001 – Flood Risk in planning decisions.

Please do not hesitate to contact myself or Rukshan de Silva, A/Director, Local Planning (Metro Central, West and South) on 02 9860 1487, if you have any questions.

Yours sincerely

27/8/2024

Daniel Thompson
A/Executive Director, Local Planning and Council Support
Planning, Land Use Strategy, Housing and Infrastructure

Final Report

Riverstone West Precinct Flooding Assessment

59918177

Prepared for

Department of Planning and Environment

25 February 2022

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Glossary

Annual Exceedance Probability (AEP)	The probability of an event occurring or being exceeded within a year. For example, a 5% AEP flood would have a 5% chance of occurring in any year. An approximate conversion between ARI and AEP is provided.

AEP	ARI
63.2 %	1 year
39.3 %	2 year
18.1 %	5 year
10 %	10 year
5 %	20 year
2 %	50 year
1 %	100 year
0.5 %	200 year
0.2 %	500 year

Australian Height Datum (AHD)	A standard national surface level datum approximately corresponding to mean sea level.
Average Recurrence Interval (ARI)	The long-term average period between occurrences equalling or exceeding a given value. For example, a 20 year ARI flood would occur on average once every 20 years.
Catchment	The area draining to a site. It always relates to a particular location and may include the catchments of tributary streams as well as the main stream.
Development	The erection of a building or the carrying out of work; or the use of land or of a building or work; or the subdivision of land.
Discharge	The rate of flow of water measured in terms of volume over time. It is to be distinguished from the speed or velocity of flow, which is a measure of how fast the water is moving rather than how much is moving.
Flood	Relatively high stream flow which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or overland runoff before entering a watercourse and/or coastal inundation resulting from super elevated sea levels and/or waves overtopping coastline defences.
Floodplain	Area of land which is subject to inundation by floods up to the probable maximum flood event, i.e. flood prone land.
Flood planning area	The area of land below the flood planning level and thus subject to flood related development controls.
Flood planning levels (FPLs)	Flood levels selected for planning purposes, as determined in floodplain management studies and incorporated in floodplain management plans. Selection should be based on an understanding of the full range of flood behaviour and the associated flood risk. It should also take into account the social, economic and ecological consequences associated with floods of different severities. Different FPLs may be appropriate for different categories of land use and for different flood plains. The concept of FPLs supersedes the “Standard flood event” of the first edition of the Manual. As FPLs do not necessarily extend to the limits of flood prone land (as defined by the probable maximum flood), floodplain management plans may apply to flood prone land beyond the defined FPLs.

Geographical Information Systems (GIS)	A system of software and procedures designed to support the management, manipulation, analysis and display of spatially referenced data.
Hydraulics	The term given to the study of water flow in a river, channel or pipe, in particular, the evaluation of flow parameters such as stage and velocity.
Hydrograph	A graph that shows how the discharge changes with time at any particular location.
Hydrology	The term given to the study of the rainfall and runoff process as it relates to the derivation of hydrographs for given floods.
Probable maximum flood (PMF)	The PMF is the largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation, and where applicable, snow melt, coupled with the worst flood producing catchment conditions.
Risk	Chance of something happening that will have an impact. It is measured in terms of consequences and likelihood. For this study, it is the likelihood of consequences arising from the interaction of floods, communities and the environment.
Runoff	The amount of rainfall that actually ends up as stream or pipe flow, also known as rainfall excess.
Stormwater flooding	Inundation by local runoff. Stormwater flooding can be caused by local runoff exceeding the capacity of an urban stormwater drainage system or by the backwater effects of mainstream flooding causing the urban stormwater drainage system to overflow.
Topography	A surface which defines the ground level of a chosen area.

Abbreviations

AEP	Annual Exceedance Probability
ARI	Average Recurrence Intervals
ARR	Australian Rainfall and Runoff
DCP	Development Control Plan
DPE	Department of Planning and Environment
FERP	Flood Emergency Response Plan
FMS	Floodplain Management Strategy
GIS	Geographic Information System
ha	Hectare
ILP	Indicative Layout Plan
km	Kilometres
km^2	Square kilometres
LGA	Local Government Area
LiDAR	Light Detection and Ranging
m	Metre
m^2	Square metre
m^3	Cubic Metre
mAHD	Metres to Australian Height Datum
mm	Millimetre
m/s	Metres per second
NSW	New South Wales
PMF	Probable Maximum Flood
SEPP	State Environment Planning Policy
TfNSW	Transport for New South Wales

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1 Introduction

1.1 Background

The Riverstone West precinct is planned to be a major employment area within the North West Growth Area and was zoned in August 2009 primarily for Business Park, general industrial and light industrial uses. Associated with the rezoning was a cut and fill strategy to raise land within the precinct to the 1% AEP flood level in order to achieve the minimum land height required for business and industrial development.

Since the rezoning of the precinct a number factors, internal and external to the precinct, have created the need to review the proposed development footprint and cut and fill strategy. These factors are:

- Proposed works by Transport for NSW (TfNSW) relating to Garfield Road West and Bandon Road. These upgrades are part of the TfNSW's North West Growth Centre Road Network Strategy (https://roads-waterways.transport.nsw.gov.au/projects/north-west-growth-centre-strategy/index.html) and have the potential to alter flood behaviour within and in the vicinity of the precinct, primarily near Garfield Road West;
- Amendment to the alignment of the southern end of the proposed "Spine Road" due to the proposed Garfield Road West works; and
- A previously planned "cut" area on Lot 11 DP 816720, a site immediately west of the precinct, being no longer available for this purpose.

1.2 Purpose of the Study

The overarching purpose of this study is to investigate the flood behaviour impacts of the development footprint of the Riverstone West Precinct and the associated earthworks.

1.3 Scope of Work

The scope of work is as follows:

1. Undertake hydrological modelling considering the Australian Rainfall and Runoff Guidelines 1987 (ARR1987);
2. Undertake hydraulic modelling to establish the existing, interim and design condition flood behaviour;
3. Consider different flooding scenarios including local catchment flooding and also Hawkesbury-Nepean flooding scenarios based on Hawkesbury-Nepean Regional Flood Study (2019); and
4. Assess the impacts of the proposed development footprint on flood behaviour.

2 Study Area and Context

2.1 Location

The location of the Study Area is shown in **Figure 2-1**. The Precinct is located within the Blacktown City Council Local Government Area (LGA). It is bound by Bandon Rd to the north, Garfield Road West to the south, Riverstone Parade to the east and Eastern Creek to the west. The total Study Area is approximately 274ha and currently contains around 40ha of industrial land and the remainder is grazing paddocks. There is an existing Sydney Water Sewerage Treatment Plant and Transgrid Substation located within the Precinct.

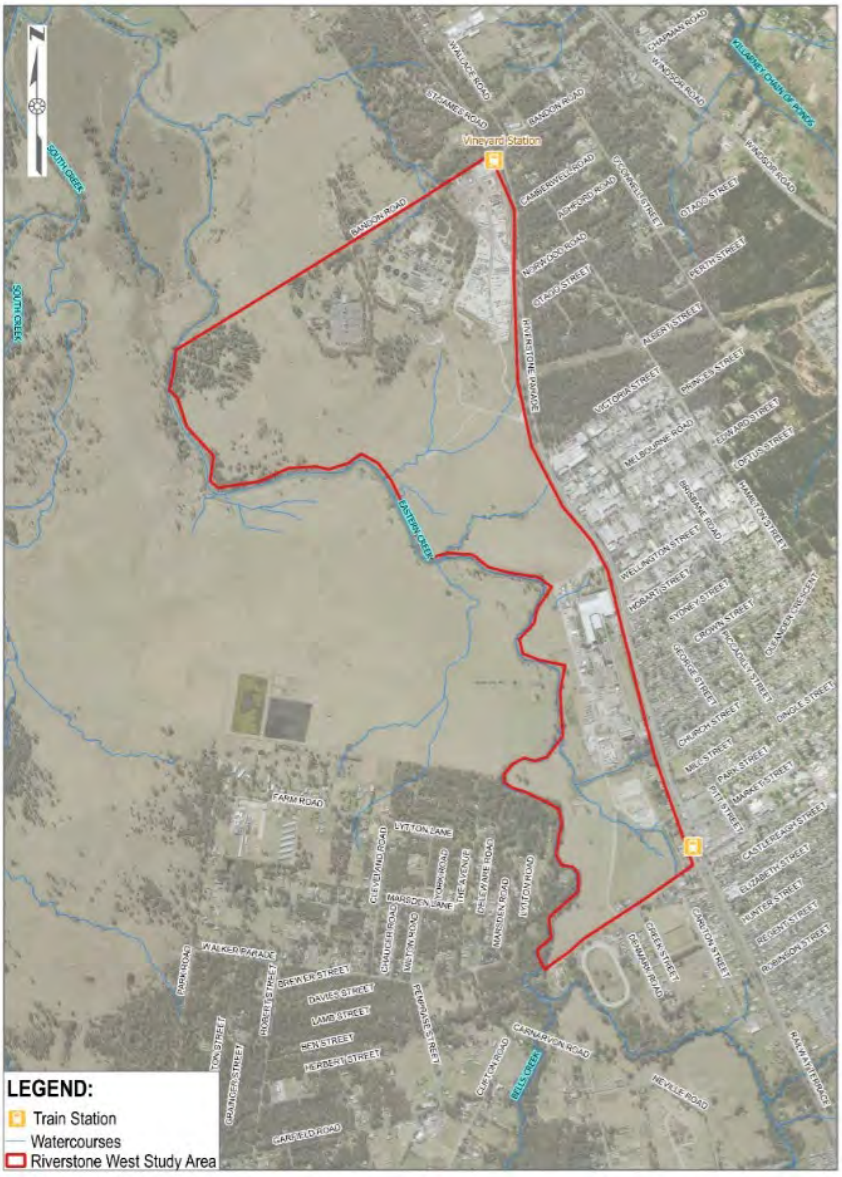

Figure 2-1 Study Area – Riverstone West Precinct (Aerial Image Source: Nearmap)

2.2 Topography and Existing Drainage

The Study Area is located between the low grounds along Eastern Creek to the west and high ridges along Riverstone Parade to the east. Therefore, terrain levels vary extensively between 5 mAHD to the west and 40 mAHD to the east.

Detailed survey of the Study Area (undertaken by Land Partners, 2008) was provided to Cardno. The site ground survey along with the 2019 1m Light Detection and Ranging (LiDAR) data was used to provide a detailed presentation of the topography of the site and surrounds.

The survey (Land Partners, 2008) also included some details of the drainage network within the Study Area and railway culverts including their alignment and invert levels at some locations. However, parts of the information such as size and invert levels of some culverts were missing. The missing information was requested and acquired from Transport for NSW (TfNSW).

The site survey is provided in **Appendix A**.

2.3 Land Use Zoning

The proposed land use zoning for the Study Area is shown in **Figure 2-2**. This figure has been generated by Cardno using the Department of Planning and Environment (DPE) land zoning downloaded from Cardno's GIS database.

As can be observed, the Study Area is zoned to include:

- Business Park;
- General Industrial;
- Infrastructure;
- Private Recreation; and
- Environmental Conservation.

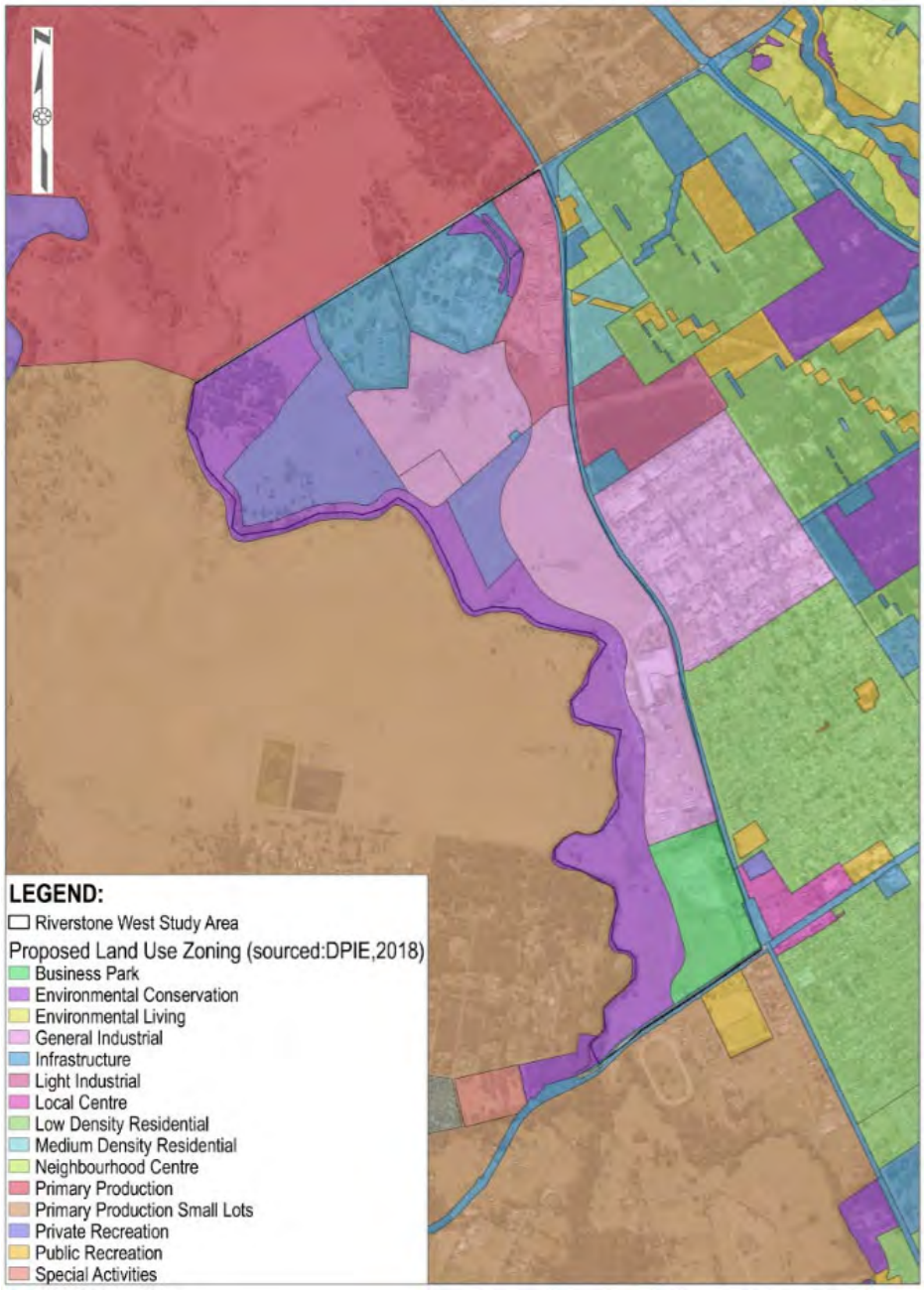

Figure 2-2 Land Zoning for the Study Area (Source of Data: DPE Land Zoning GIS Layers 2018)

2.4 Existing Flood Behaviour

The Study Area is located adjacent to Eastern creek and is also 3km upstream from the confluence of Eastern Creek and South Creek. South Creek then connects further downstream to Hawkesbury River. The area is subject to flooding from Eastern Creek, backwater flooding from Hawkesbury River; and local overland flows.

A number of studies have investigated flood behaviour at the site and surrounds. Details of these studies are provided in the following sections.

Figure 2-3 shows the flood extents along Riverstone West Precinct for different flood events and flooding scenarios sourced from Riverstone West Precinct Floodplain Management Strategy (Worley Parsons, 2014).

2.5 Previous Studies

2.5.1 Proposed Redevelopment of Riverstone West Precinct Flood Impact Assessment (Worley Parsons, 2008)

This study found that it was possible for the Study Area to be raised so a total of 121 ha will be above the 1 in 100 year ARI flood level of 17.3 m AHD without causing any significant impact on adjoining properties. The study also showed that a cut and fill strategy could be implemented without causing significant flood impacts on adjoining properties in the adopted design 100 year ARI local catchment flood.

2.5.2 Peer review of the Proposed Redevelopment of Riverstone West Flood Impact Assessment (Cardno, 2008)

Cardno undertook a review of the Worley Parsons 2008 flood impact assessment to assess the adequacy and appropriateness of the assumptions, model parameters and findings of this study. The review also made recommendations regarding additional work required to address any inadequacies and mechanisms that could reduce impacts on adjoining areas in the local flooding regime if found necessary.

2.5.3 Riverstone West Precinct Flood Impact Assessment Report (Worley Parsons, 2013)

Worley Parsons undertook a further flood investigation aimed at determining an optimal fill layout that was compatible with the existing flood characteristics of the Precinct and that would not cause unacceptable flood impacts on adjoining properties. The investigations included an assessment of the existing flood behaviour along the section of Eastern Creek that adjoins the site, definition of the predicted post-development flood characteristics (i.e., with the proposed filling in place), and an assessment of the magnitude and extent of any impacts that the proposed filling may have on flooding.

The purpose of this investigation was to determine an optimal fill extent that meets the guidelines and requirements outlined in the State Environment Planning Policy (SEPP 2009) and Development Control Plan (DCP 2009). The report also served as an updated Flood Impact Assessment Report for the proposed development of the Riverstone West Precinct.

2.5.4 Riverstone West Precinct Floodplain Management Strategy (Worley Parsons, 2014)

The requirement for this study is described as follows:

Although the Riverstone West FIA (2013) addressed the majority of flood related requirements outlined in the SEPP (2009) and DCP (2009), the guideline documents also require the preparation of a Floodplain Management Strategy (FMS). The FMS as described in Appendix C of the DCP (2009) is required for most development applications that involved development of land within the Riverstone West Precinct. The specific purpose of the FMS as outlined in the DCP (2009) is to:

- Define existing flooding at the site and in the vicinity of the site in accordance with the NSW Floodplain Development Manual, 2005 procedures;
- Determine the flood impacts on account of the proposed development, and investigate mitigation options which will input to the FMS;
- Develop a strategy that demonstrates flood impacts at the site and adjoining the site are managed in accordance with the requirements of the SEPP (2009) and the development controls in Section 4.3 of the DCP (2009); and

Develop a Flood Emergency Response Plan (FERP) in consultation with the State Emergency Services (SES).

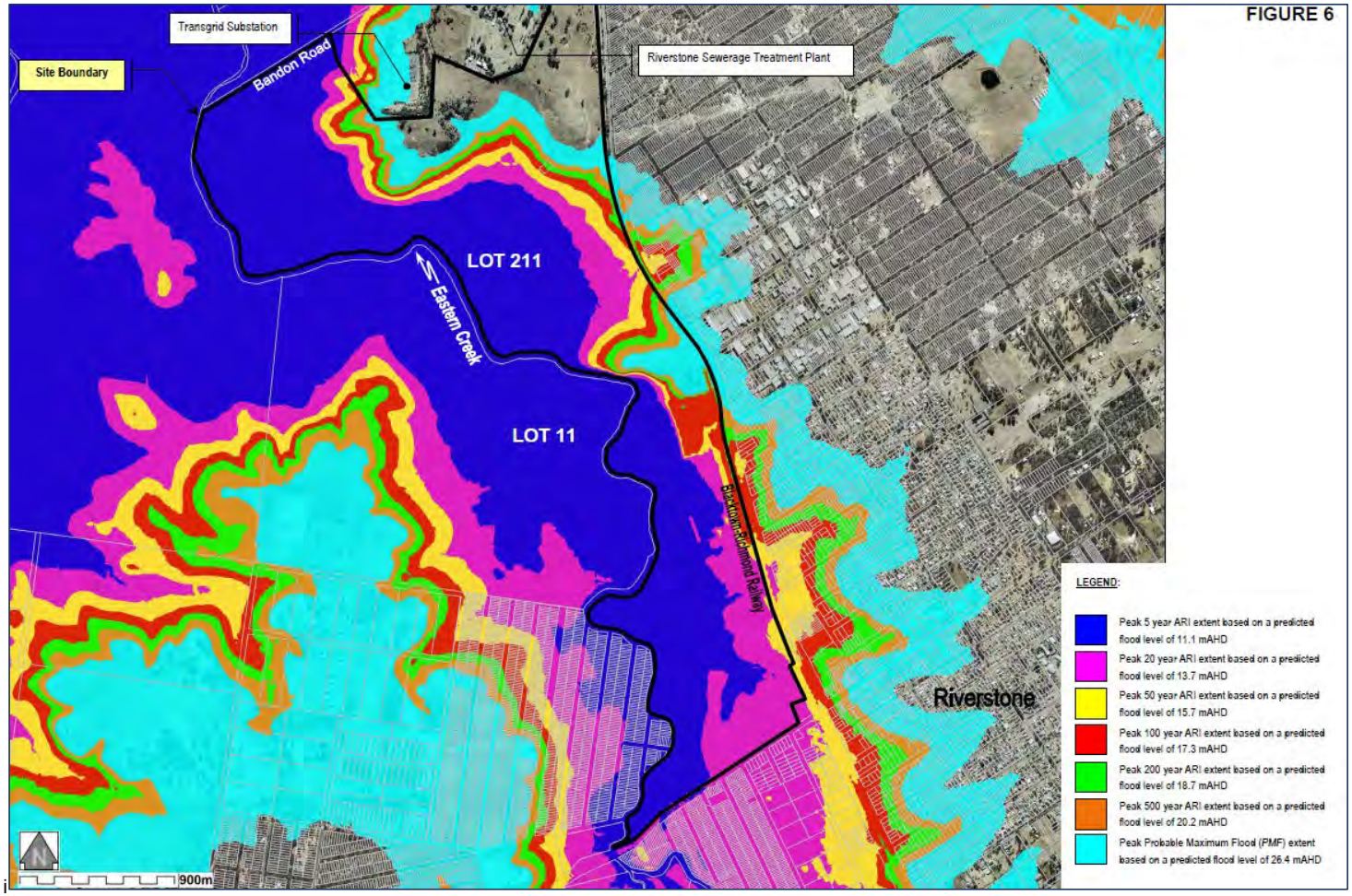

Figure 2-3 Haw kesbury River Flood Extents Under Different Flooding events and Scenarios (Source of Data: Riverstone West Precinct Floodplain Management Strategy (Worley Parsons, 2014))

2.5.5 Peer Review of the Riverstone West Floodplain Management Strategy (Cardno, 2014)

Cardno undertook a review of the Riverstone West Precinct Floodplain Management Strategy (2014) and the Riverstone West Precinct Flood Impact Assessment (2013) to identify any changes in the flood assessment as well as a review of the adequacy and appropriateness of the floodplain risk management study.

2.5.6 Eastern Creek Hydraulic Assessment (Catchment Simulation Solutions, 2014)

Catchment Simulation Solutions (CSS) undertook this hydraulic assessment study on behalf of Blacktown City Council as part of the Flood Planning Study for Eastern Creek and its tributaries contained within the Blacktown LGA. This study quantifies the existing flood behaviour across the Eastern Creek catchment for a range of design events. A XP-RAFTS hydrological model was used to define the design inflow hydrographs and a two-dimensional hydraulic model of Eastern Creek and its major tributaries was developed using the TUFLOW software. The model was verified by comparing simulated 1% AEP flood levels and discharges with 1% AEP flood levels and discharges documented in previous studies.

The study identified that flooding across the Eastern Creek catchment can occur as a result of major watercourses overtopping their banks as well as inundation from elevated Hawkesbury River water levels.

2.6 Proposed Development

According to the Riverstone West Precinct Development Control Plan (DCP, 2009):

"The vision for Riverstone West Precinct is to create an attractive employment precinct that provides for a diverse range of job opportunities to support the growing residential areas in Sydney's North West.

The Precinct will be characterised by a mix of industrial, light industrial and commercial uses that will be supported by accessible public transport, small scale retail and community facilities such as child care centres.

A pleasant and safe work environment is envisaged through the provision of pedestrian-friendly streets, good landscape design, parks and open spaces with access to riparian corridors, and cycle ways as well as encouraging high-quality built form based on ecologically sustainable design (ESD) principles.

Focal points around Riverstone and Vineyard Stations will be created by providing pedestrian-focused main streets with access to the stations. Small shops, cafes and restaurants will be encouraged to activate station areas and provide areas for social interaction.

The Precinct will incorporate a Spine Road that will improve the amenity of Riverstone Township by providing an alternative route for heavy vehicles to pass through. A crossing beneath the rail line (underpass) at Bandon Road will provide access to the Spine Road for vehicles travelling from the west.

Streets within the vicinity of Riverstone and Vineyard Stations will maximise pedestrian amenity and safety whilst providing for the requirements of large and heavy vehicles."

An Indicative Development Layout (ILP) for Riverstone West Precinct is shown in **Figure 2-4**.

2.7 Proposed Road Upgrades

Transport for NSW has proposed upgrades to Garfield Road West and Bandon Road. Details of these are provided in **Figure 2-5**. The proposed upgrades have been reviewed as part of this study and incorporated in the flooding assessment (See Section 3.1.2 for details).

Figure 2-4 Riverstone West Indicative Layout Plan (Source of Data: Riverstone West Development Control Plan 2009)

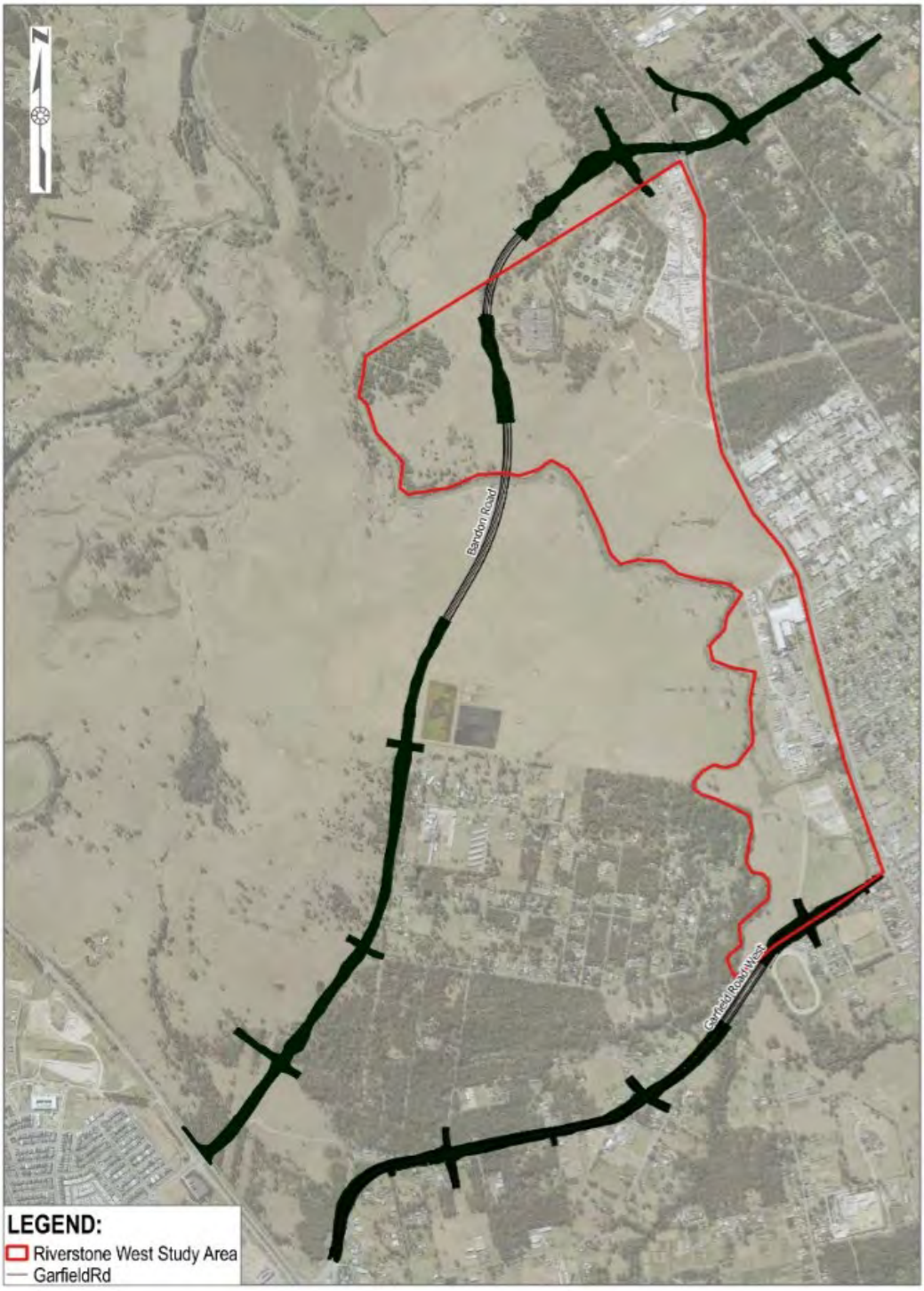

Figure 2-5 Proposed Garfield Road West and Bandon Road Alignment

3 Flooding Assessment

3.1 Modelling Approach

For this assessment flood modelling was undertaken to simulate the existing and future flood behaviour for the Study Area and surrounds. The hydraulic model for the Study Area and surrounds has been developed by Cardno.

Existing hydrology models and data were provided to Cardno for input into the hydraulic model. The following hydrology models and data inputs were used for the purpose of this flooding assessment:

- Eastern Creek XP-RAFTS model that was updated as part of the Eastern Creek Hydraulic Assessment (Catchment Simulation Solutions, 2014); and
- Inflow and Tailwater level data from the Hawkesbury-Nepean Regional Flood Study (WMAwater, 2019).

3.1.1 Model Simulations

For this study, the following flooding simulations were considered and adopted based on the available information and the flooding behaviour of the catchment:

- **Local Flooding:** This simulation is critical for designing drainage network and also assessing the impacts of the proposed development. The inflows for this simulation are extracted from two different sources:
  - **Eastern Creek Local Flows:** This simulation applies the inflows from Eastern Creek and also the sub-catchments to the east of the Study Area. The fine delineation of the sub-catchments provides the possibility to present the flowpaths traversing the Study Area. The inflows for this simulation are from two sources:
    - Inflows for the subcatchment at the site and surrounds are extracted from the XP-RAFTS hydrology model of Eastern Creek (Catchment Simulation Solutions, 2014). The XP-RAFTS model is based on the ARR1987 parameters; and
    - The upstream boundary inflows are extracted from TUFLOW hydraulic model of Eastern Creek (Catchment Simulation Solutions, 2014).
  - **Hawkesbury Nepean Study Flows**: This simulation considers local Eastern Creek and South Creek flooding through application of lump inflows into the model. The inflows for this scenario are adopted from the Hawkesbury-Nepean Regional Flood Study (2019) model data provided to Cardno by WMAwater. This scenario also considers Eastern Creek and South Creek flooding in isolation and without consideration of the backwater from Hawkesbury River.
- **Hawkesbury Nepean Study Tailwater Condition:** This simulation considers the backwater impacts from Hawkesbury River. This simulation is critical for assessing the impacts of the proposed development and also determining flood planning levels. The inflows and tailwater level hydrographs for this scenario are adopted from the Hawkesbury-Nepean Regional Flood Study (2019) data provided to Cardno by WMAwater.

Figure 3-1 shows the location of inflows applied into the hydraulic model for each simulation.

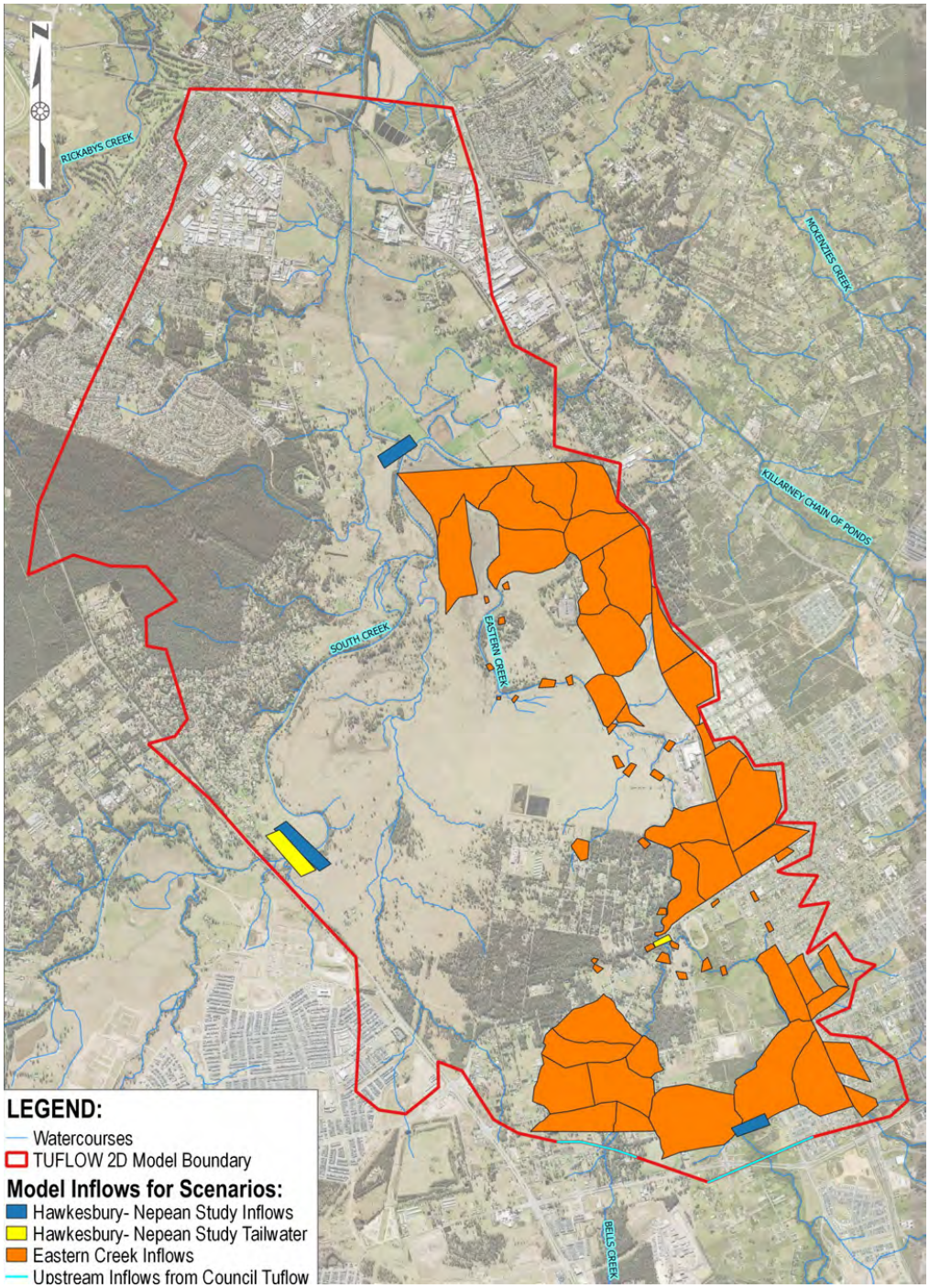

Figure 3-1 Location of Inflows Applied into the Hydraulic Model for each Model Simulation

3.1.2 Model Scenarios

To assess the impact of the proposed development of the Precinct, three scenarios can be considered for flood assessment:

- **Existing Scenario:** This scenario represents the existing conditions of the Study Area and surrounding areas and roads;
- **Interim Scenario:** This scenario represents the existing conditions with the proposed TfNSW Garfield Road West and Bandon Road upgrades included (Base Case); and
- **Design Scenario:** This scenario represents the TfNSW Garfield Road West and Bandon Road upgrades and the proposed Riverstone West Development footprint including the proposed fill pad and drainage network (**NOTE:** Compensatory cut not been assessed as part of this assessment).

Table 3-1 summarises the simulations and scenarios considered for undertaking the flood assessment as part of this study.

Table 3-1 Summary of Model Simulations and Scenarios

Flood Simulation / M Scenario	Local Inflow	Hawkesbury Nepean Inflow	Hawkesbury Nepean Tailwater
Existing Scenario	X	X	X
Interim Scenario	X	X	X
Design Scenario	X	X	X

3.2 Hydrology Modelling

3.2.1 Overview

A hydrology model combines rainfall information with local catchment characteristics to estimate a series of runoff hydrographs at selected locations. These hydrographs are then incorporated into the hydraulic model to simulate the behaviour of the flood through creeks, channels and over the floodplain.

Cardno had initially undertaken this assessment based on the ARR2019 guidelines. However, following advice from Council, it was agreed to adopt the Eastern Creek Hydraulic Assessment (Catchment Simulation Solutions, 2014) hydrology which is based on ARR1987.

For the Wianamatta (South) Creek Catchment Flood Study (November 2020), Advisian had undertaken a comparison of flows from ARR2019 and ARR1987 at Elizabeth Drive (South Creek). The comparison showed that the ARR2019 flows were up to 20% lower as shown in **Figure 3-2**, so the ARR1987 guideline was considered to be more appropriate and was adopted.

Approach Adopted for Estimation of Design 1% AEP Flows

Flood Frequency Analysis	ARR 1987	ARR 2019
538 m^3/s ^	492 m^3/s - 9%	381 m^3/s - 29%

^ *Value extracted from FFA curve provided as Appendix A49 – 'Review of ARR Design Inputs for NSW' (OEH, February 2019) prepared by WMA Water*

Download link: https://data.arr-software.org/static/pdf/appendix.pdf

Figure 3-2 Comparison of Peak 1% AEP flows at Elizabeth Drive (South Creek) based on ARR1987 and ARR2019 Hydrology to FFA (Source: Wianamatta (South) Creek Catchment Flood Study Existing Conditions (2020))

Cardno undertook a sensitivity check for Eastern Creek to check the indicative 1% AEP peak flows in the Eastern Creek catchment based on transposition of a Flood Frequency Analysis (FFA) peak flow, ARR1987 peak flow and ARR2019 peak flow from Elizabeth Drive in South Creek. The calculations showed that

ARR2019 guidelines results in almost 20% reduction in flows in comparison to ARR1987 and confirmed that ARR1987 results are closer to the FFA.

3.2.2 Critical Duration

The XP-RAFTS model of Eastern Creek was run for the 1%, 5%, 20% AEP and PMF events for a range of durations including 1.5 hour, 2 hour and 9 hour.

The critical durations for the Study Area under the Local Inflows simulation was identified through comparison of flows under different durations and at three key locations within the Study Area. **Figure 3-3** shows the key locations where the flows have been compared. The results indicated that 2 hour can be selected as the critical duration as it generates higher local flows passing through the study site. Details of flows for the 1% AEP and 5% AEP and for different durations and also the critical durations are presented in **Table 3-2**.

Table 3-2 Flow Comparison and Critical Duration

Key Location	1% AEP Flow			Adopted 1% AEP Critical Duration
	1.5 Hour	2 Hour	9 Hour	
EAS0005100	44.7	49.2	29.7	2 Hour
EAS0300090	19.7	18.9	8.4	
EAS0003320	10.2	10.7	8.5	
Key Location	5% AEP Flow			Adopted 5% AEP Critical Duration
	1.5 Hour	2 Hour	9 Hour	
EAS0005100	33.046	36.975	23.74	2 Hour
EAS0300090	15.761	15.036	6.726	
EAS0003320	7.064	7.424	6.768	

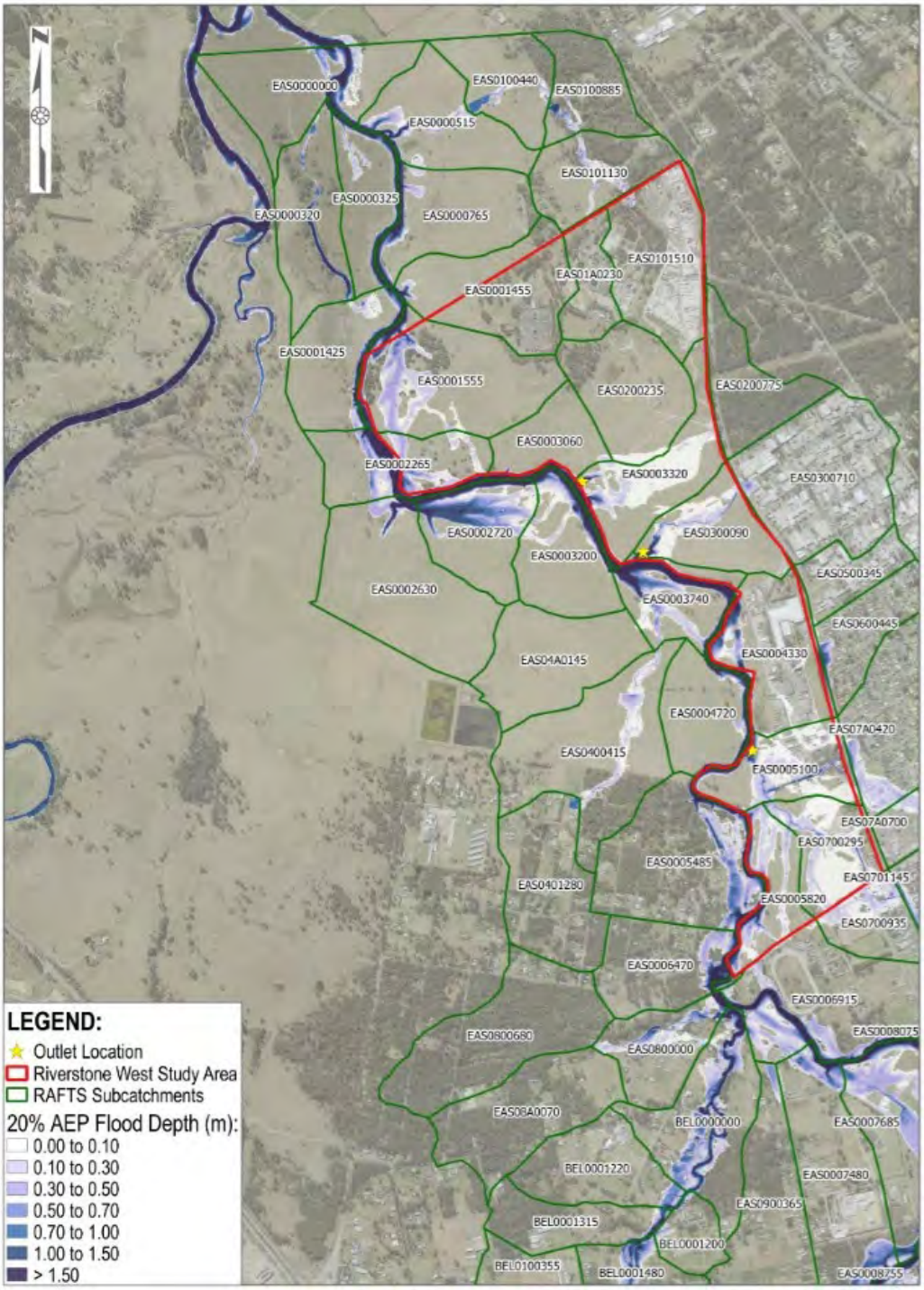

Figure 3-3 Key Locations for Identifying Critical Duration

3.3 Hydraulic Modelling

3.3.1 Existing Scenario Model Set-up

3.3.1.1 Model Extents

For the purpose of this assessment a 1D/2D hydraulic TUFLOW model was assembled by Cardno. **Figure 3-4** shows the extents of the hydraulic TUFLOW model adopted. The model extends from Schofields Road in the south to downstream of Windsor at the north (5km downstream of the Study Area). These model extents are considered sufficient to demonstrate any possible impacts of the proposed development on flooding on adjoining properties.

3.3.1.2 Model Topography

Model topography was adopted from the 2019 1m Light Detection and Ranging (LiDAR) data downloaded from ELVIS (Elevation Information System) website (https://elevation.fsdf.org.au/).

As discussed in **Section 2.2** detailed survey of the Study Area (undertaken by Land Partners, 2008) was also included in the model to provide a detailed presentation of the terrain at the Study Area (**Appendix A**).

Based on the size of watercourses within the model extent, existing flowpaths and Study Area, a grid size of 2m x 2m was considered suitable and adopted for this study. The existing ground level terrain for the Study Area and surrounds adopted in the model is shown in **Figure 3-5**.

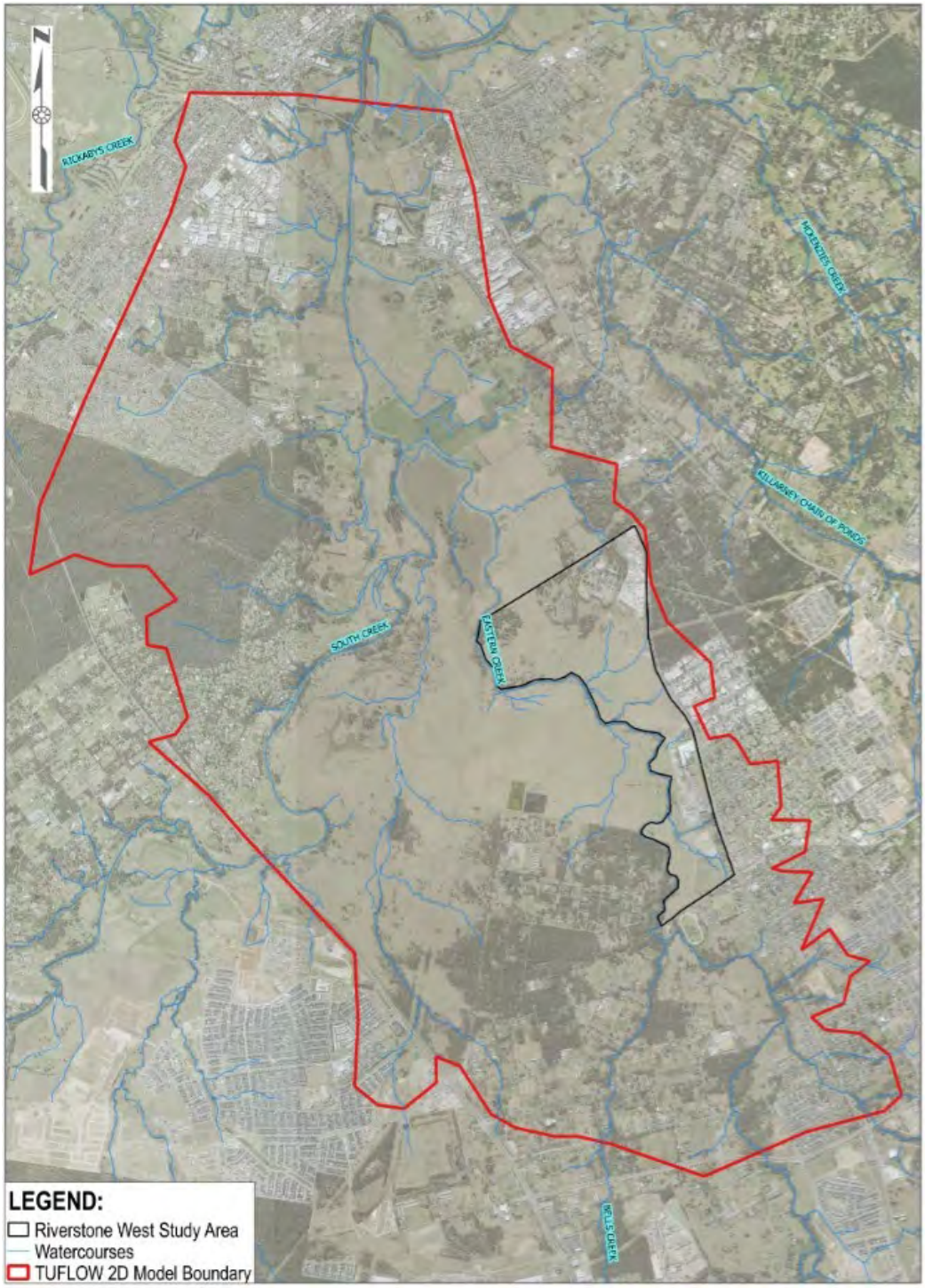

Figure 3-4 TUFLOW Model Extents

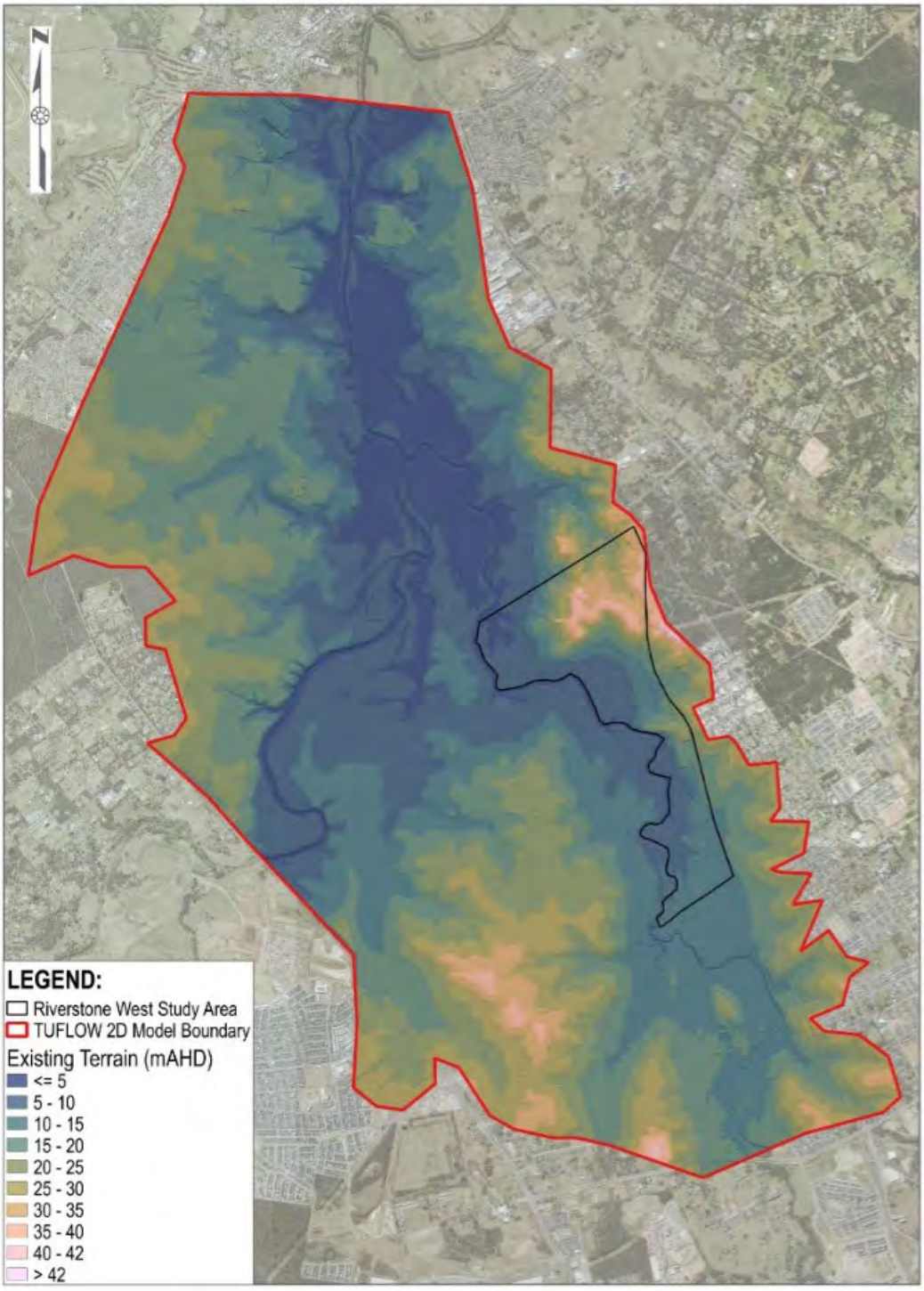

Figure 3-5 Adopted Topography at the Study Area and Surrounds

3.3.1.3 Hydraulic Roughness

Surface roughness was modelled in TUFLOW based on the roughness zones. Roughness zones for the model were determined using aerial photography, current land use zones, and site inspection carried out during the study. **Table 3-5** summarises the types of roughness zone and associating hydraulic roughness adopted in the model.

Table 3-3 Roughness Values for Different Roughness Zones

Roughness Zone	Manning's "n" Value
Light vegetation / Grass	0.035
Medium Vegetation	0.05
Dense Vegetation	0.1
Commercial / Industrial	0.1
Medium Residential	0.08
Low Residential	0.07
Railway	0.05
Roads	0.02

3.3.1.4 Existing Drainage Network

As discussed in **Section 2.2** the existing drainage network including railway culverts was modelled based on the site survey information, site inspection carried out during the study and also the information received from TfNSW. **Figure 3-6** shows the existing drainage network as included in the TUFLOW model.

Figure 3-6 Existing Drainage Network Included in the TUFLOW Model

3.3.1.5 Boundary Conditions

As discussed in **Section 3.1.1** different flooding simulations were considered in this study. **Table 3-4** shows the source of inflow and tailwater level boundary conditions adopted for each simulation.

Table 3-4 Source of Inflow Hydrographs and Tailwater Level Hydrographs Adopted in each Flooding Scenario

Flooding Scenario	Source of Inflows	Type/Source of Tailwater Level
Eastern Creek Local Flows with Free Outfall Downstream Boundary	- XP-RAFTS model (ARR1987) for local catchment AND Upstream inflows hydrographs extracted from Council's TUFLOW Model (Refer to **Section 2.5.6**)	Free Outfall
Eastern Creek Local Flows with 20% AEP Hawkesbury- Nepean Tailwater Level	- XP-RAFTS model (ARR1987) for local catchment AND Upstream inflows hydrographs extracted from Council's TUFLOW Model	20% AEP Hawkesbury-Nepean Tailwater Level
Eastern Creek Local Flows with 1% AEP Hawkesbury- Nepean Tailwater Level	- XP-RAFTS model (ARR1987) for local catchment AND Upstream inflows hydrographs extracted from Council's TUFLOW Model	1% AEP Hawkesbury-Nepean Tailwater Level
Hawkesbury-Nepean Study Flows	RUBICON model inflows (provided by WMAwater)	Free Outfall
Hawkesbury-Nepean Study Tailwater Condition	Hawkesbury-Nepean Regional Flood Study (provided by WMAwater)	Hawkesbury-Nepean Regional Flood Study (provided by WMAwater)

Hawkesbury Nepean backwaters are quite large and will cause significant flooding within the Study Area even in the smaller events. In such situation any fill or cut within the study area will be a small feature in comparison to the backwater and will have negligible impact on flood behaviour. Therefore, the local flooding simulations have been modelled with free outfall downstream boundary so that the impacts of the development on flood behaviour can be investigated and not be overshadowed by the backwater impacts.

3.3.2 Existing Scenario Model Results

The TUFLOW model was run for the three simulations as per **Table 3-4** for the 1% and 20% AEP events. The results are presented in **Figures E1** to **E8 in Appendix B.**

3.3.2.1 Local Flooding – Eastern Creek Flows with Free Outfall Downstream Boundary

In this simulation the Study Area is mostly flood free in the 1% AEP event with the exception of the flowpaths traversing the area form the upstream catchments at the east and south of the Study Area. The 1% AEP flood levels along Eastern Creek vary from 12.3 mAHD at Garfield Road West to 7.4 mAHD at Bandon Road (**Figure E4**).

In the 20% AEP event, similarly the majority of the Study Area is flood free. Flood levels along Eastern Creek vary form 11.06 mAHD at Garfield Road West to 6.5 mAHD at Bandon Road (**Figure E1**).

3.3.2.2 Local Flooding – Eastern Creek Flows with 20% AEP Hawkesbury-Nepean Tailwater Level

This simulation was undertaken for the 1% AEP event. It was observed that the site is partially flooded due to the impacts of the 20% AEP tailwater level from the Hawkesbury_Nepean system. Flood levels vary from 12.5 mAHD at Garfield Road West to 11.1 mAHD at Bandon Road (**Figure E7).**

3.3.2.3 Local Flooding – Eastern Creek Flows with 1% AEP Hawkesbury-Nepean Tailwater Level

This simulation was undertaken for the 1% AEP event. It was observed that the study site is almost completely flooded due to the impacts of the 1% AEP tailwater level from Hawkesbury-Nepean river system. A constant flood level of 17.3 m AHD is observed at the site and along Eastern Creek (**Figure E8).**

3.3.2.4 Local Flooding – Hawkesbury-Nepean Study Flows

In this simulation the 1% AEP flood levels along Eastern Creek vary from 11.5 mAHD at Garfield Road West to 6.6 mAHD at Bandon Road (**Figure E6**). In the 20% AEP event flood levels range from 10.6 mAHD at Garfield Road West to 5.7 mAHD at Bandon Road (**Figure E3**).

The flood levels and flood extents are generally smaller in comparison to the local Eastern Creek Flows simulation. This is predominantly due to the different distribution and magnitude of hydrology inflows into the model. It can be concluded that between the two local flooding simulations (Eastern Creek Flows and Hawkesbury-Nepean Study flows), the Eastern Creek flows is more critical for the purpose of this study as it provides the definition and magnitude of flows traversing the Study Area which are required for developing the fill and cut strategy and also designing the drainage network.

3.3.2.5 Hawkesbury-Nepean Study Tailwater Condition

In this simulation the bathtub impact form the Hawkesbury-Nepean backwater results in a constant flood level within the Study Area. The entire Study Area is flooded in the 1% AEP event with flood level of 17.3 mAHD (**Figure E5**). Depth and extent of flooding in the 20% AEP event is significant along Eastern Creek and the constant flood level of 9.9m AHD is observed (**Figure E2**).

3.3.3 Interim Scenario Model Set-up

To represent the Interim Scenario, the Existing Scenario model was updated to include the proposed designs for Bandon Road and Garfield Road West upgrades as provided by TfNSW (refer **Section 2.7**). **Figure 3-7** shows the changes in terrain levels for the Interim Scenario in comparison to the Existing Scenario.

Garfield Road West and Bandon Road upgrades result in increases and decreases in the terrain levels along the proposed roads. Bandon Road upgrade also includes two compensatory cuts as shown in **Figure 3-7.** These are located outside the Study Area.

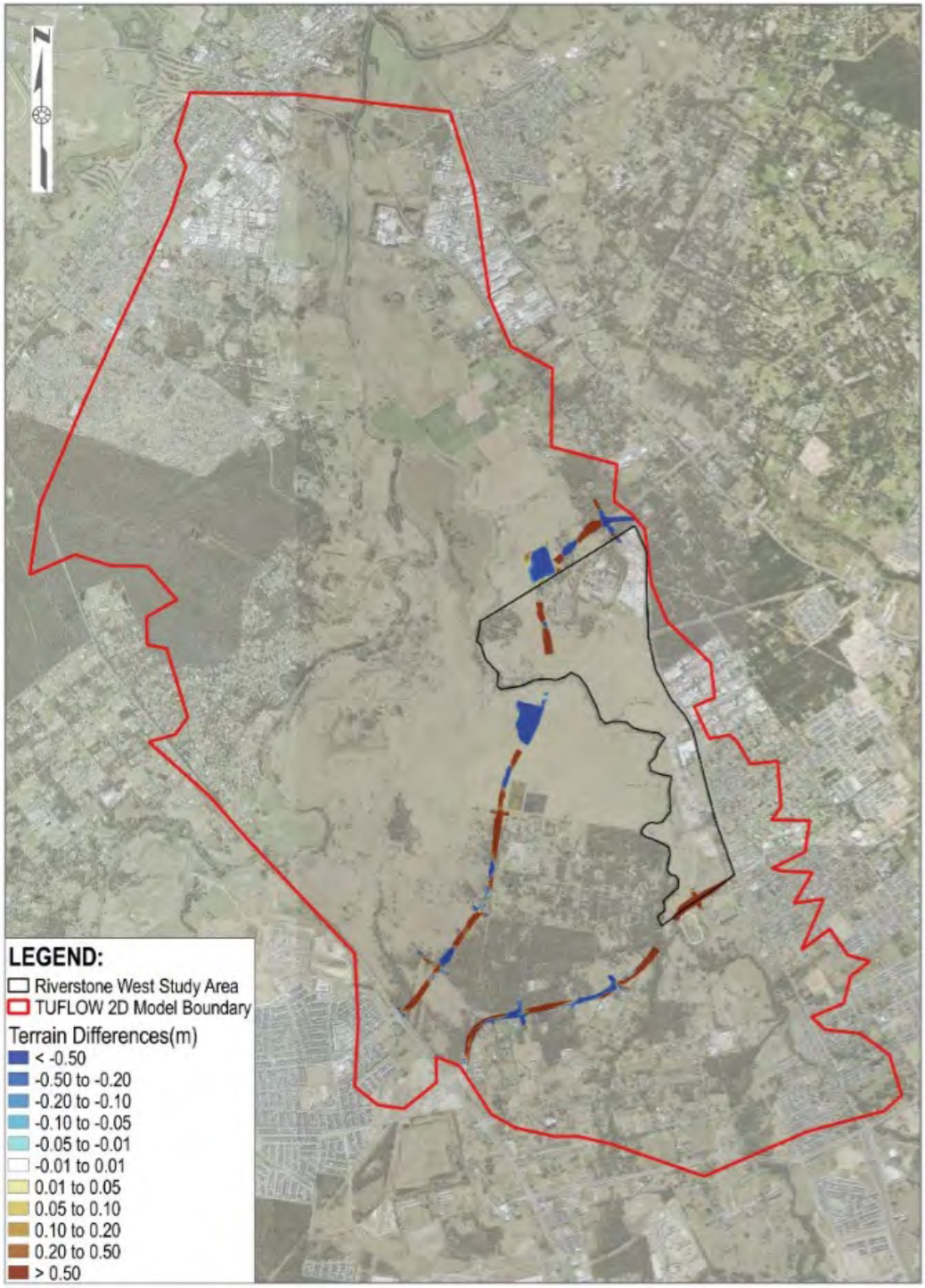

Figure 3-7 Terrain Difference Plot (Interim Scenario Less Existing Scenario)

3.3.4 Interim Scenario Model Results

The TUFLOW model was run for all the three flooding simulations discussed in Section 3.1.1 for the 20% AEP, 5% AEP, 1% AEP, 0.833% AEP, 0.5% AEP, 0.2% AEP and PMF events.

The differences between the Interim and Existing flood levels for the 20% AEP and 1% AEP events are presented in **Figure I1** to **Figure I6** in **Appendix B.**

It has been assumed that the hydraulic model with upgraded Bandon Road and Garfield Road West will form the Base Case for the purpose of Riverstone West Precinct assessment.

3.3.4.1 Local Flooding – Eastern Creek Flows with Free Outfall Downstream Boundary

The proposed Garfield Road West upgrade causes raised terrain levels on both sides of the confluence of Bells Creek and Eastern Creek (**Figure 3-6**). This results in reducing the width of the 1% AEP flood extent. Therefore the flood level increases of up to 50mm along the confluence are observed in the 1% AEP event (**Figure I4** and **Figure I6).** Localised flood level increases of up to 100mm are observed adjacent to Garfield Road West in the 1% AEP event (**Figure I4** and **Figure I6**).

Raising Garfield Road West levels adjacent to the Study Area results in increases in the 1% AEP flood levels and extents upstream of the site. It also results in decreases in flood levels and extents within and adjacent to the Riverstone West site (**Figure I4** and **Figure I6**).

The compensatory cut as a part of Bandon Road design is marginally within the 1% AEP flood extent and results in up to 60mm decrease in flood levels in both the local flooding simulations (**Figure I4** and **Figure I6**).

In the 20% AEP event the proposed Garfield Road West and Bandon Road upgrade impacts on flooding are almost similar to the 1% AEP event (**Figure I1 & Figure I3**).

3.3.4.2 Hawkesbury-Nepean Study Tailwater Condition

The impacts of the proposed Garfield Road West and Bandon Road upgrades on 1% and 20% AEP flood levels in this simulation is negligible (**Figure I2** and **Figure I5**). This is predominantly due to the small scale of the proposed terrain changes in comparison to the large flood depths produced by the backwater from Hawkesbury-Nepean River.

3.3.5 Design Scenario Model Set-up

The Design Scenario model has been developed through application of the following data:

- Proposed fill pad: The fill pad is designed to raise the development area to 17.3 mAHD (which is the Hawkesbury 1% AEP flood level) to ensure that the development will not be flooded by the backwater from Hawkesbury River;
- Proposed Spine Road (provided by land owner / developer): The Spine Road design has been aligned with the fill pad design to ensure consistency in the layout and levels; and
- Proposed drainage network: The proposed drainage network is designed to replace the existing overland flowpaths within the Study Area and convey flows from the east of the fill pad to Eastern Creek thereby avoiding any water ponding upstream of the fill area.

Figure 3-8 shows the changes in the terrain in the Design Scenario compared to Interim and also the proposed drainage network.

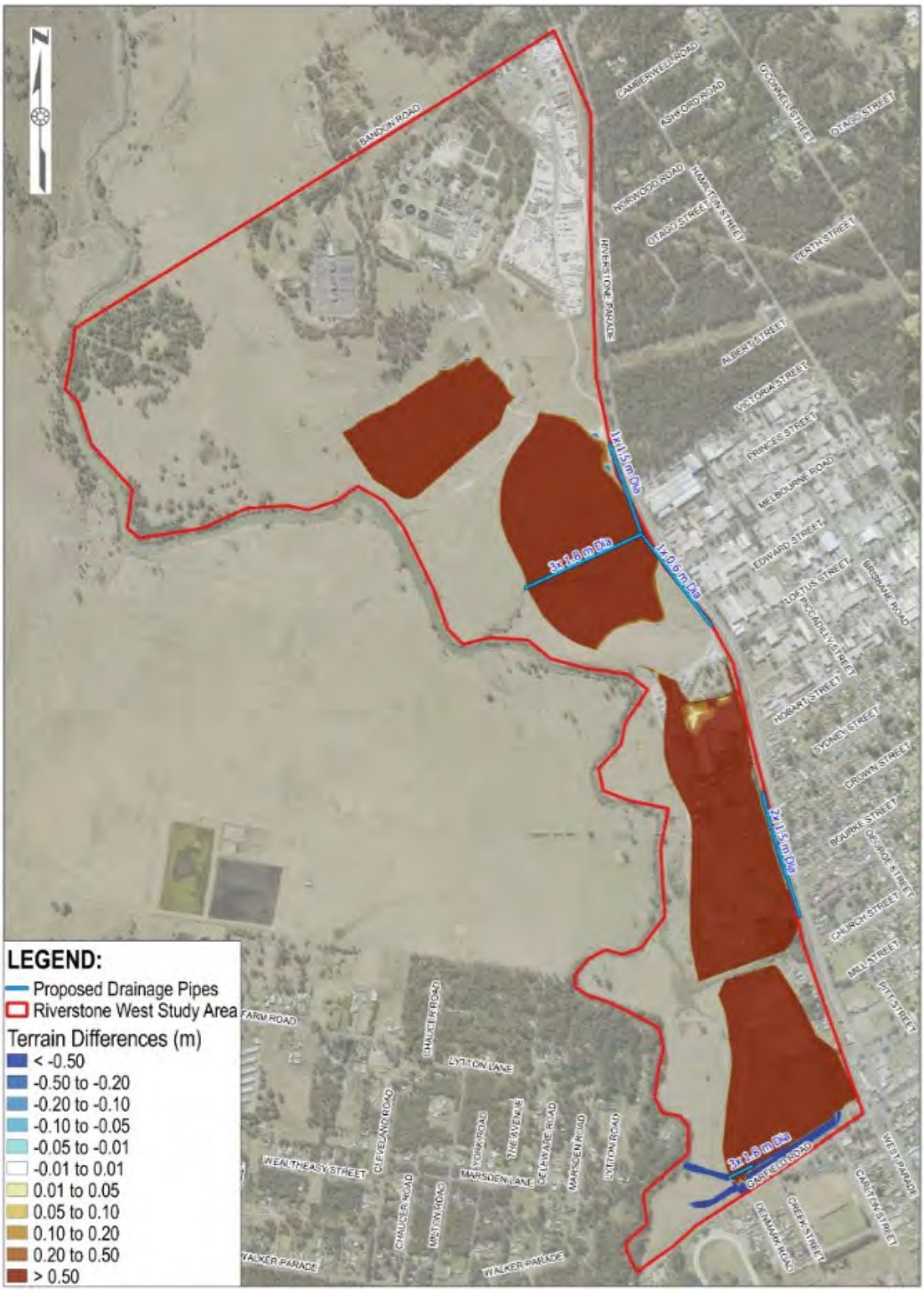

Figure 3-8 Proposed Drainage Network and Terrain Difference Plot (Design Less Interim)

3.3.6 Design Scenario Model Results

The Design Scenario model was run for the 20% AEP, 5% AEP, 1% AEP, 0.833% AEP, 0.5% AEP, 0.2% AEP and PMF events. The results for all the modelled events are provided in **Figures D1** to **Figure D35** in **Appendix B**.

3.3.6.1 Local Flooding – Eastern Creek Flows with Free Outfall Downstream Boundary

In the 20% AEP event the channel formalised upstream of the site redirect some of the upstream flows around the fill pad and into Eastern Creek. This results in the localised decreases in flood levels (up to 50 mm) along Riverstone Pde and the properties on the western side of Eastern Creek. Increases in flood levels are observed immediately adjacent to the proposed fill (**Figure D23)** but within the Study Area. A similar pattern is observed in the 5% AEP event (**Figure D26)**

The proposed fill pad is marginally within the 1% AEP local flood extent. This results in up to 50 mm increase in flood levels on properties along the western side of Eastern Creek and up to 500 mm within the Study Area. In this simulation, flood level decreases are observed upstream of the site and adjacent to Church Street, King Street and Princess Street (**Figure D29**). This is predominantly due to the provision of drainage networks and open channel proposed within the Study Area.

3.3.6.2 Local Flooding – Eastern Creek Flows with 20% AEP Hawkesbury-Nepean Tailwater Level

This simulation was undertaken for the 1% AEP event. It was observed that the proposed fill is partially within the flood extent and as a result increases in flood levels of up to 50 mm are observed on properties along the western side of Eastern Creek and within the Study Area (**Figure D30)**.

3.3.6.3 Local Flooding – Eastern Creek Flows with 1% AEP Hawkesbury-Nepean Tailwater Level

This simulation was undertaken for the 1% AEP event. It was observed that the proposed fill does not affect the flood levels within the Study Area and along Eastern Creek. However increased flood levels are observed along Riverstone Pde. These increased flood levels are a result of backwater through the proposed channels and drainage pipes (**Figure D31)**.

3.3.6.4 Local Flooding – Hawkesbury-Nepean Study Flows

In this simulation the 1% AEP flood levels increases of up to 300mm within the Study Area are observed. Flood level decreases of up to 50mm are also observed along Eastern Creek (**Figure D33**). In this simulation the impacts of the proposed development on 20% AEP event flood levels is negligible (**Figure D25)**.

It should be noted that the observed increases are contained within the creek corridor and are not affecting any adjacent roads or properties.

3.3.6.5 Hawkesbury-Nepean Study Tailwater Condition

The impacts of the fill pad on 1% and 20% AEP event flood levels in this simulation is negligible (**Figure D24** and **Figure D32**). This is predominantly due to the small scale of the proposed terrain changes in comparison to the large flood depths produced by the backwater from Hawkesbury-Nepean River.

4 Conclusion

The Riverstone West Precinct was rezoned in August 2009 to allow industrial, light industrial and business park uses. Since the Precinct is subject to flooding from Eastern Creek, backwater flooding from Hawkesbury River, and local overland flows; it is proposed to fill the land to the 1% AEP Hawkesbury-Nepean Tailwater level of 17.3 mAHD. This flood assessment was undertaken to review the flood implications of this.

A TUFLOW hydraulic flood model was established for the existing, interim (with Bandon Rd and Garfield Rd upgrades) and developed conditions (with Bandon Rd and Garfield Rd upgrades, and the proposed fill pads), for the local Eastern Creek flows, Hawkesbury Nepean inflows and Hawkesbury-Nepean Tailwater level flood events.

The key finding of the assessment undertaken is that local flooding due to Eastern Creek flows is most impacted by the proposed fill. As can be observed from the flood mapping provided (**Appendix B**), the impacts are predominately observed in the 1% AEP Eastern Creek Flows with free outfall downstream boundary event and 1% AEP Eastern Creek Flows with 20% AEP Hawkesbury-Nepean Tailwater Level event. Increases greater than 10mm are observed on adjoining properties. These increases will have to be mitigated to ensure that there are no impacts from the proposed fills pads.

There are increases also observed along Riverstone Pde, however these are predominantly stormwater drainage issues and can be resolved by drainage upgrades.

While increases and decreases of up to 10mm can be observed for most of the modelled events and scenarios assessed and are widespread for certain areas, these are considered to be within the modelling tolerances and can be considered as ‘negligible/no impact’.

5 References

Department of Planning 2009, Riverstone West Precinct Development Control Plan.

Worley Parsons, 2008, Proposed Redevelopment of Riverstone West Precinct Flood Impact Assessment.

Cardno 2008, Peer review of the Proposed Redevelopment of Riverstone West Flood Impact Assessment.

Worley Parsons, 2013, Riverstone West precinct Flood Impact Assessment Report.

Worley Parsons, 2014, Riverstone West Precinct Floodplain Management Strategy.

Cardno, 2014, Peer Review of the Riverstone West Floodplain Management Strategy.

EMGA Mitchell McLennan, 2014, Riverstone West Precinct: Salinity and Groundwater Assessment and Management Plan.

JBS&G Australia Pty Ltd, 2018, Assessment of Groundwater Levels During Site Filling Works: 211 Riverstone Pde, Riverstone, Riverstone West Precinct.

Advisian 2020, Wianamatta (South) Creek Catchment Flood Study Existing Conditions.

APPENDIX

A

SITE SURVEY

NOTES

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PLAN OF SHEET SET LOCATIONS OVER RIVERSTONE WEST PRECINCT BEING LOT 211 IN DP 830505

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SCALE 1 : 500

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BANDON ROAD

WALLACE ROAD

DULWICH ROAD

RIVERSTONE PARADE

TO RICHMOND

TO BLACKTOWN

LEVEL CROSSING

VINEYARD STATION

RAILWAY LINE

EASEMENT FOR TRANSMISSION LINE VARIABLE WIDTH

LOT 211 DP 830505

RD

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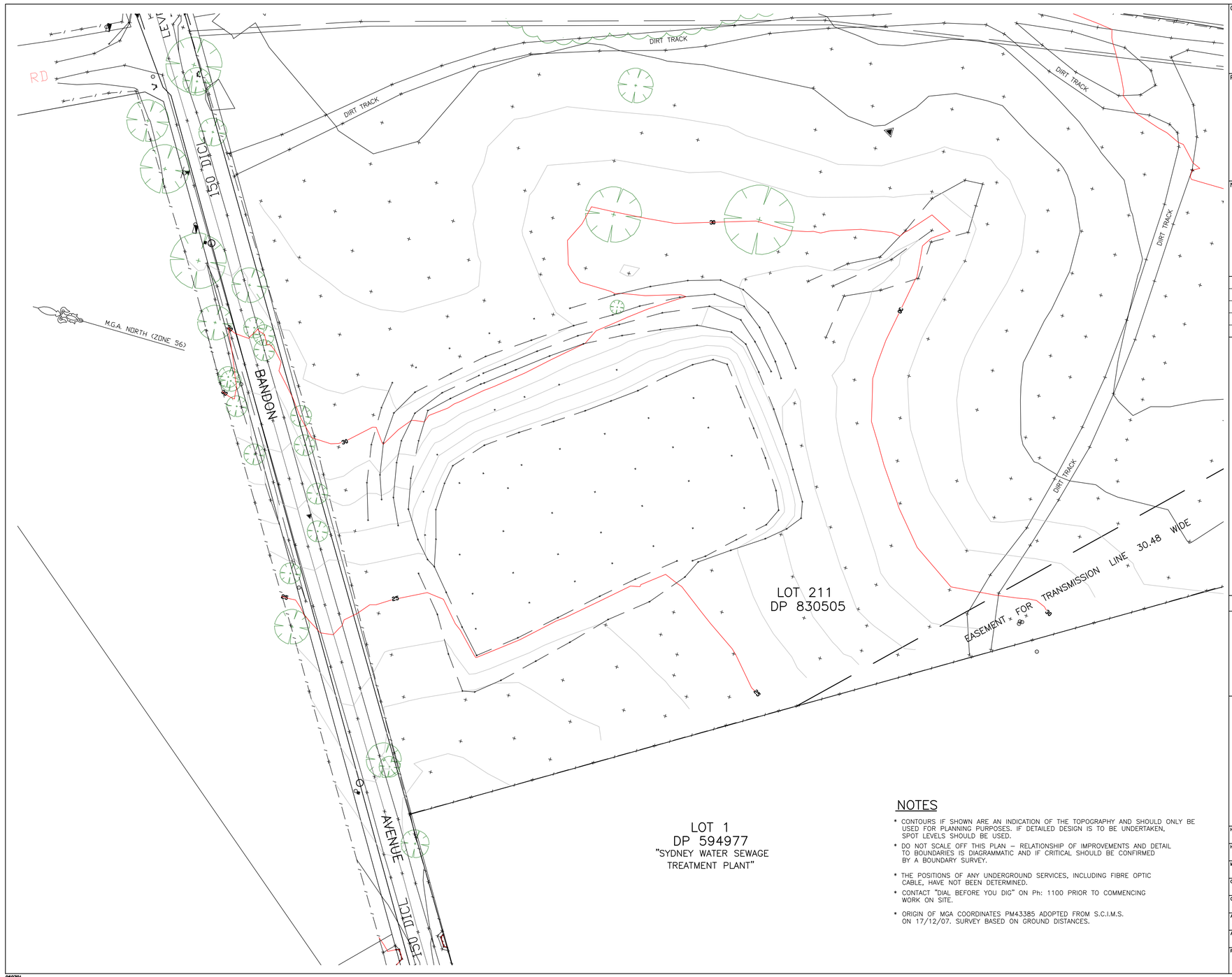

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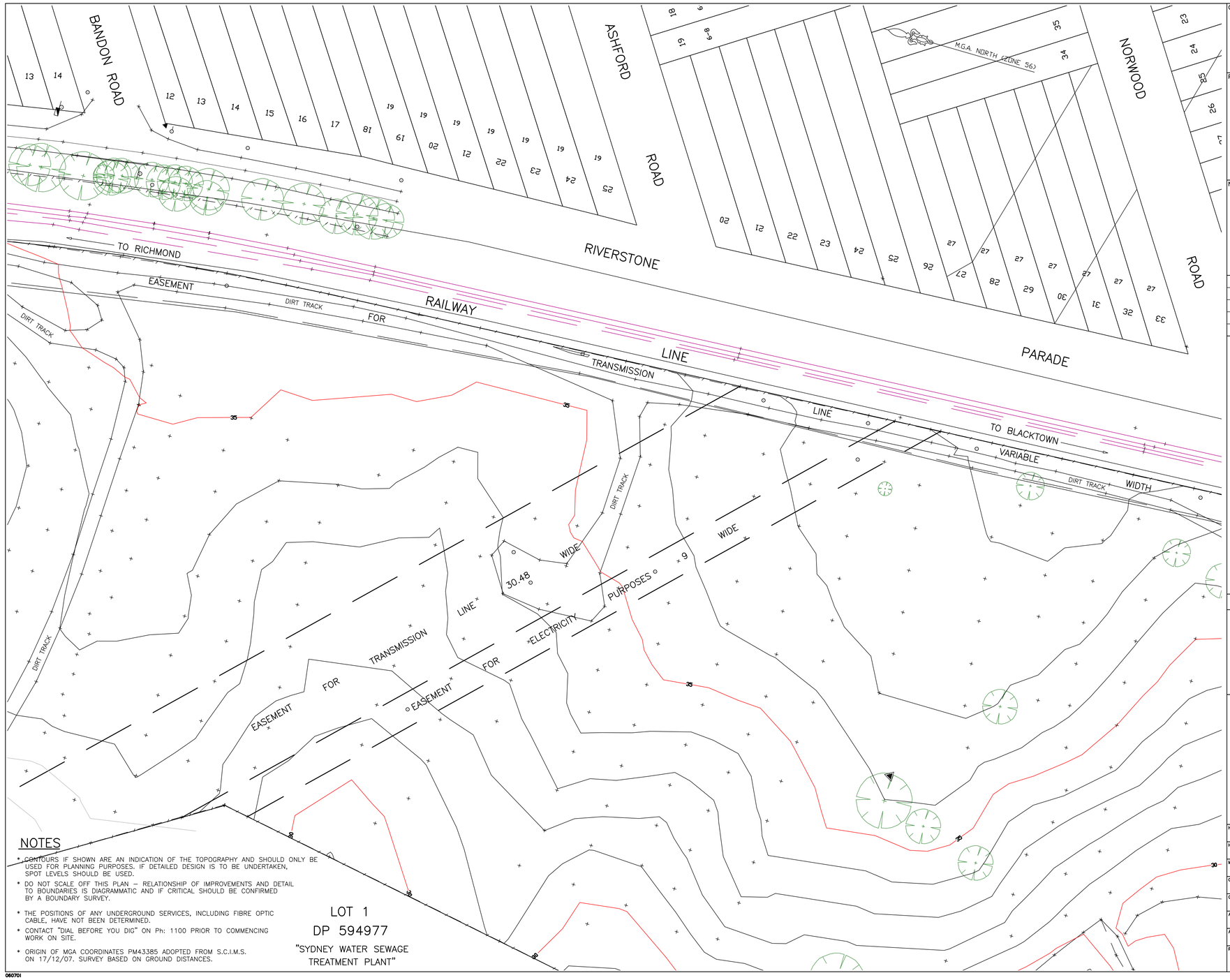

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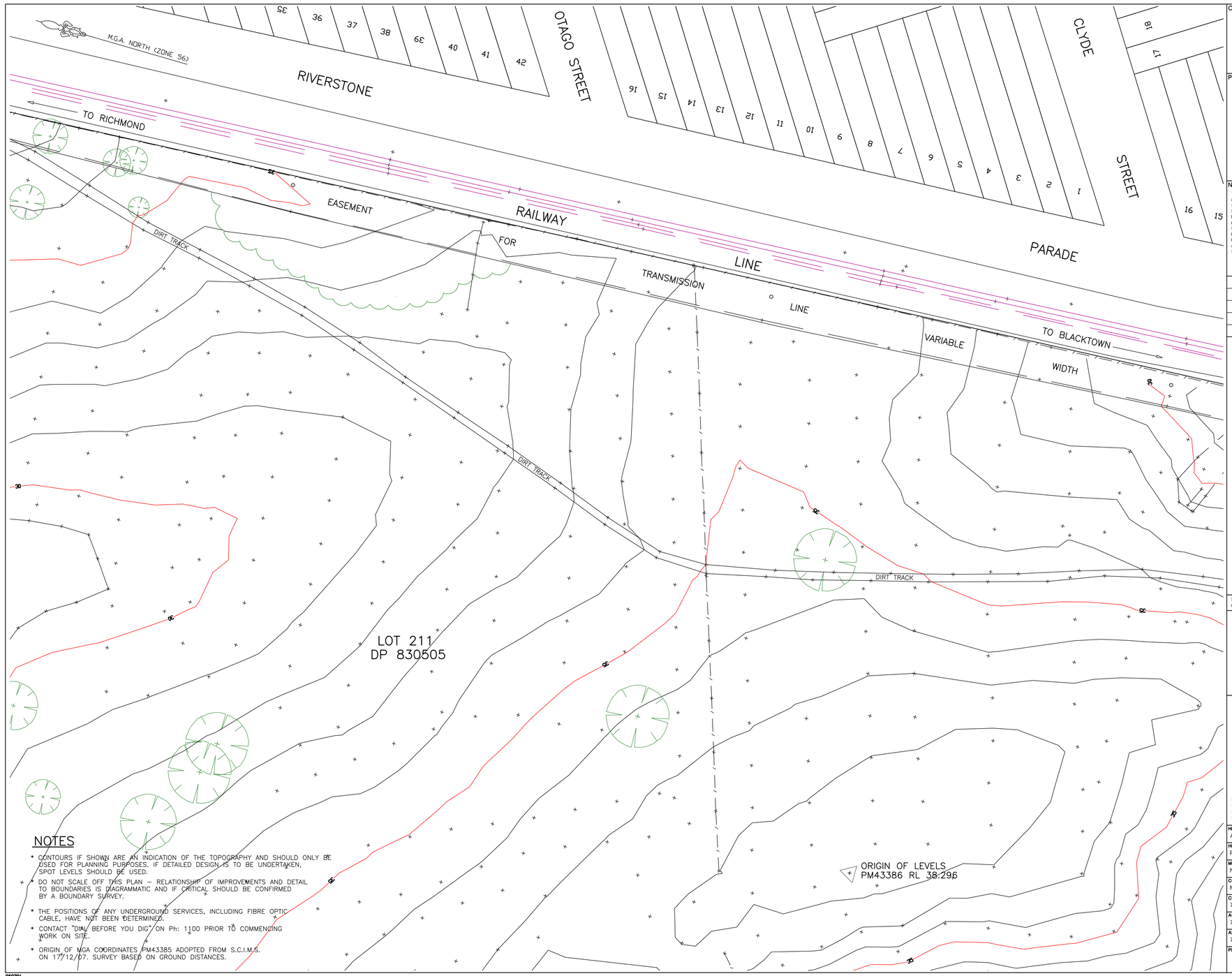

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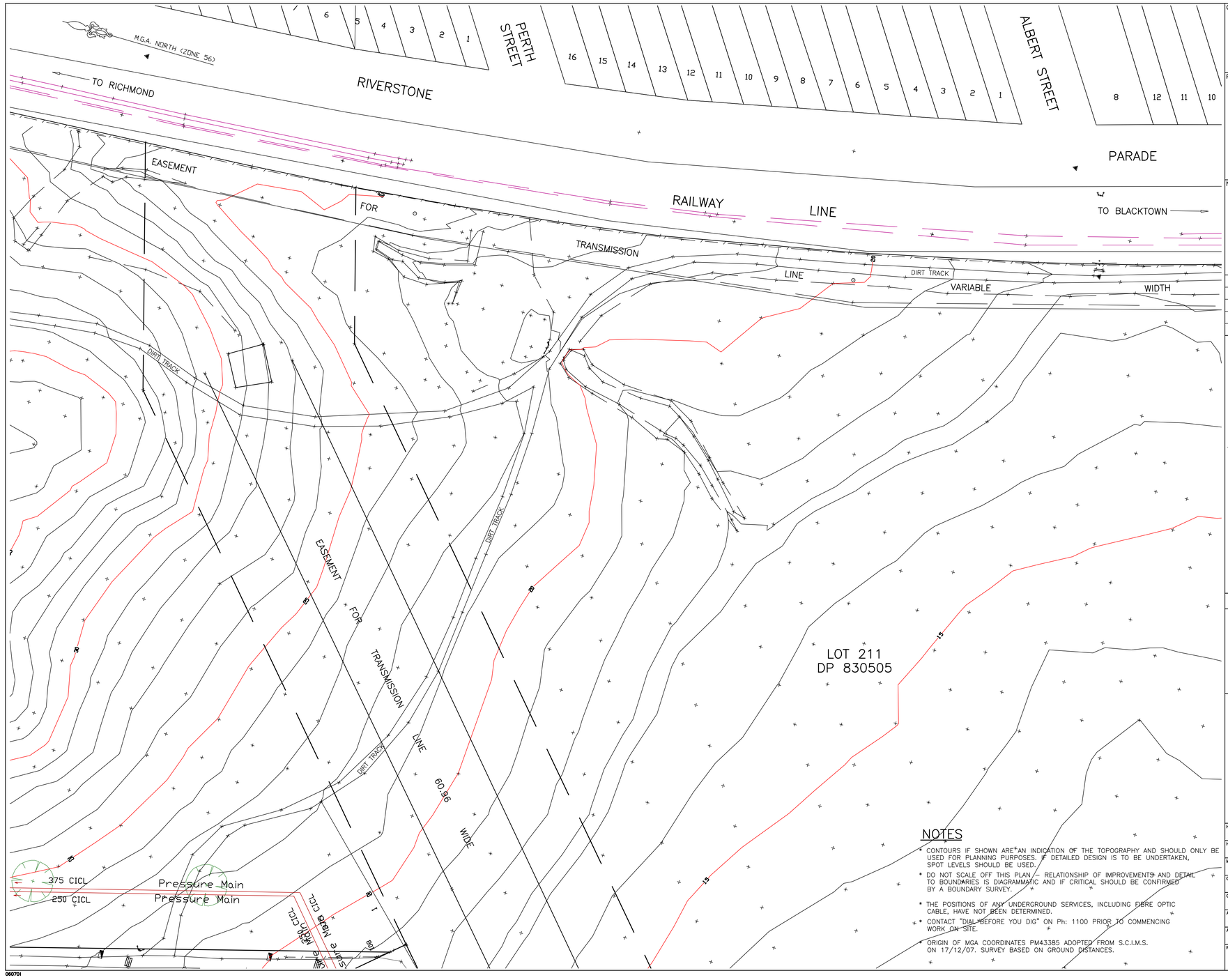

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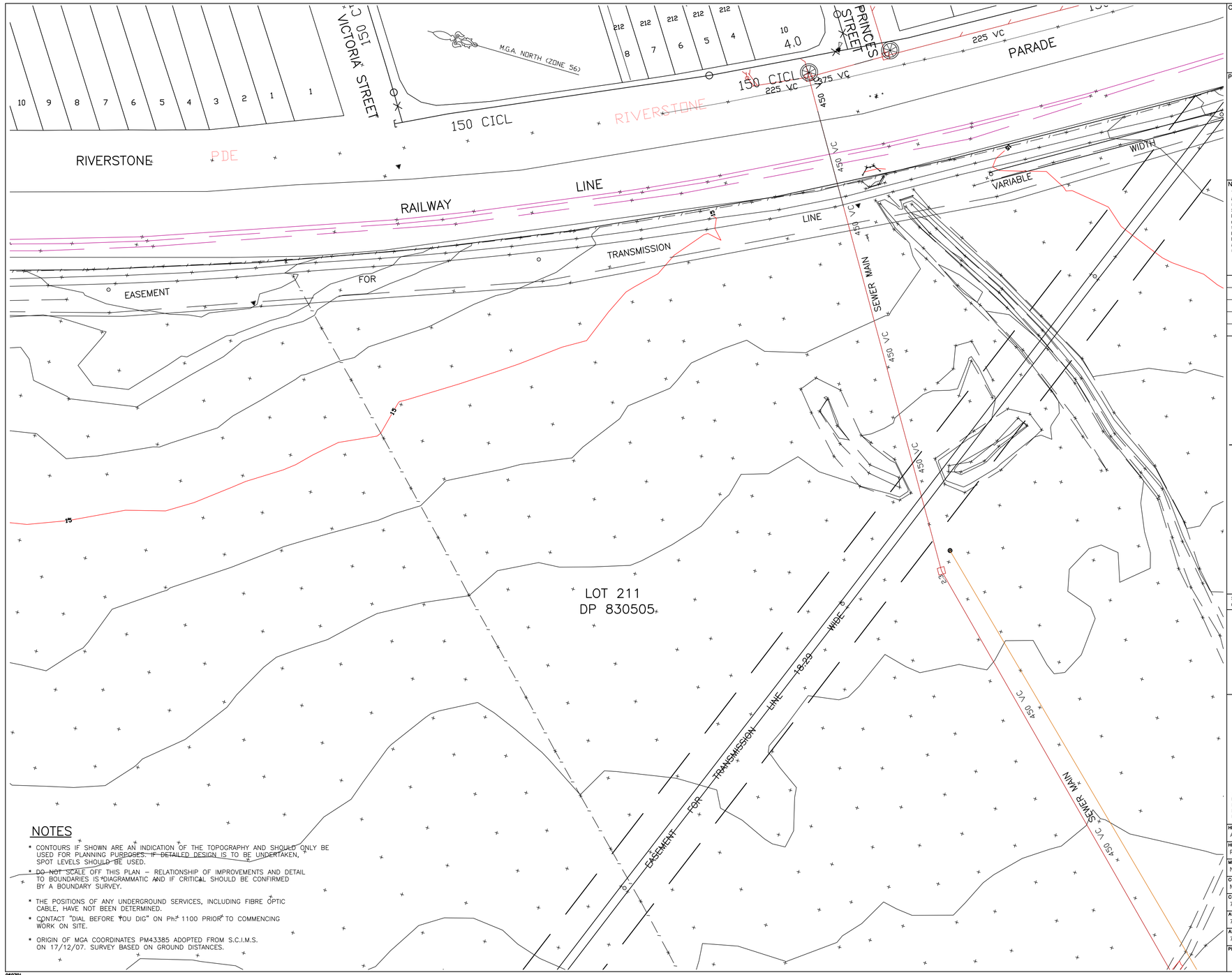

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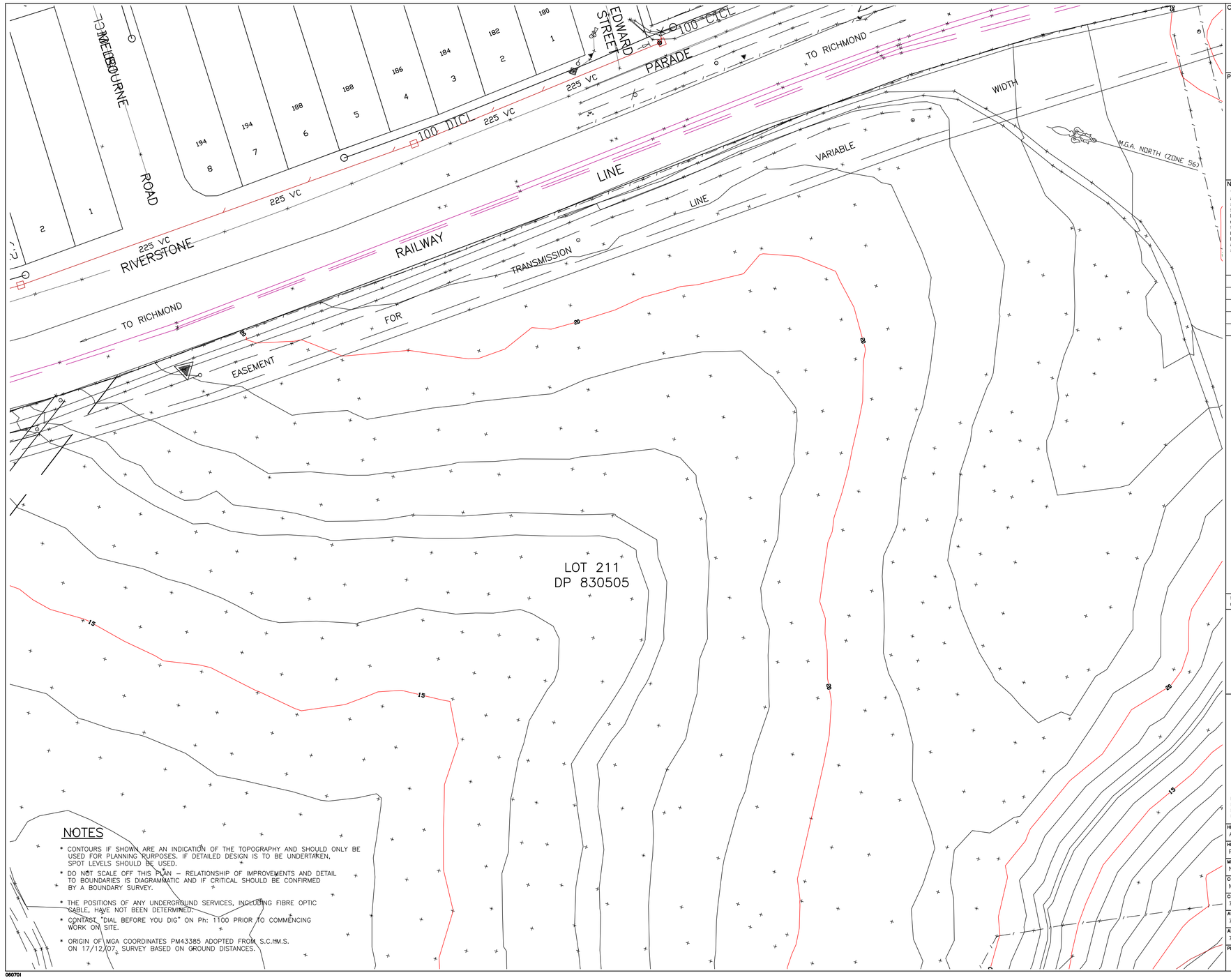

NOTES

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* ORIGIN OF MGA COORDINATES PM43385 ADOPTED FROM S.C.M.S. ON 17/12/07. SURVEY BASED ON GROUND DISTANCES.

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RIVERSTONE PARADE PTY LTD

PROJECT

PLAN OF DETAILS & CONTOURS OVER RIVERSTONE WEST PRECINCT BEING LOT 211 IN DP 830505

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LEGEND

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e sydney@landpartners.com.au
w www.landpartners.com.au

ISO 9001:2008 FS 535093

HEIGHT DATUM: AHD	LOCAL AUTHORITY: BLACKTOWN COUNCIL
HEIGHT ORIGIN: PM 43386 RL 38.296	SCALE: 1:500 (A1)
MERIDIAN: N/A	CONTOUR INTERVAL: 1.0 Metre
CO-ORD SYSTEM: MGA	SURVEYOR: BS — DATE OF SURVEY: 03/03/08
CCAD FILE: 71372-DE1	DRAWN: JMD — DATE: 24/09/2013
AUTOCAD FILE: 73341	CHECKED: GKO — DATE: ??/??/??
ARCHIVE FILE: 73341	APPROVED: GKO — DATE: ??/??/??

PLAN NUMBER

73341

SHEET 8 OF 25

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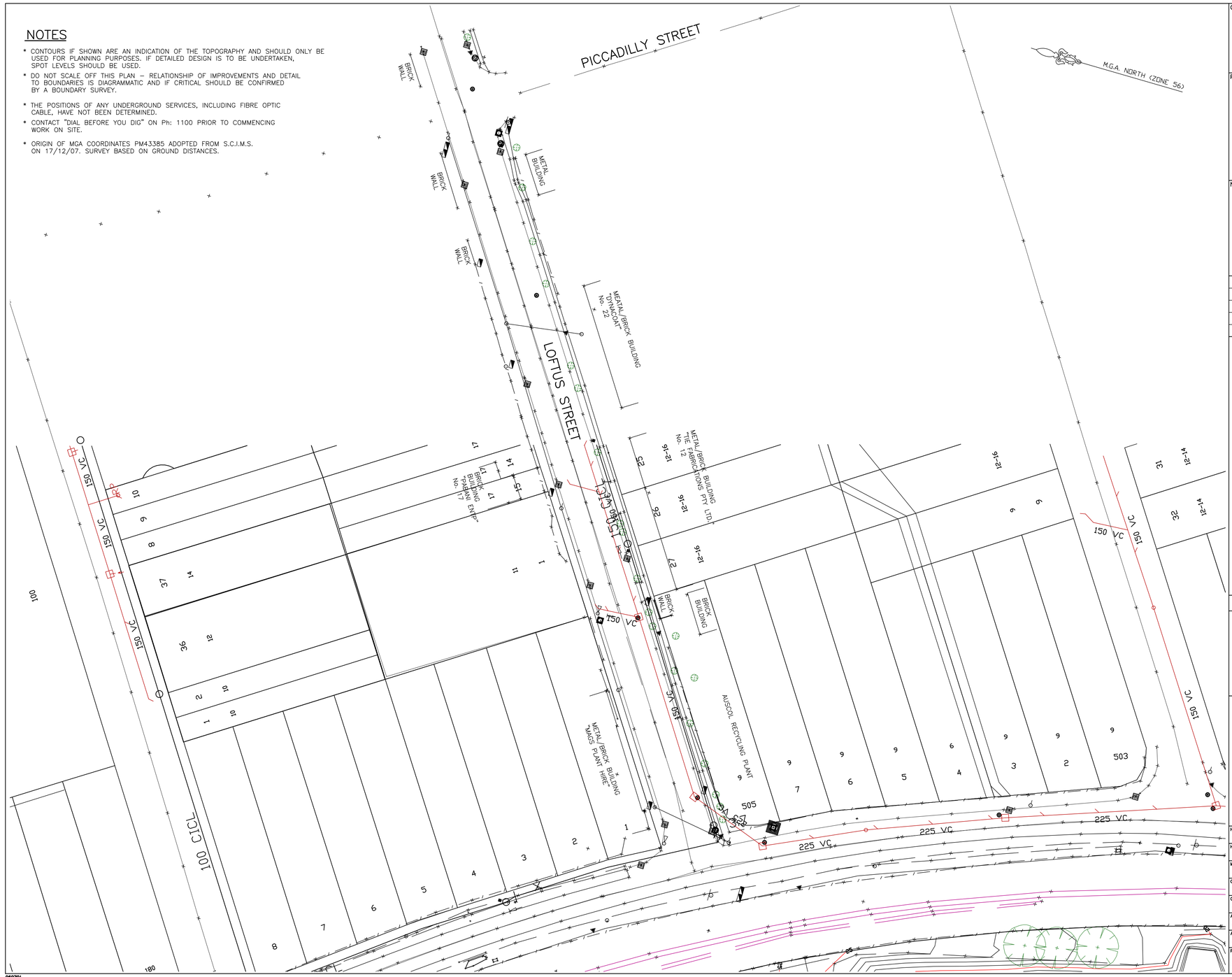

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RIVERSTONE PARADE PTY LTD

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HEIGHT DATUM: AHD	LOCAL AUTHORITY: BLACKTOWN COUNCIL
HEIGHT ORIGIN: PM 43386 RL 38.296	SCALE: 1:500 (A1)
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PLAN NUMBER: 73341	SHEET 9 OF 25

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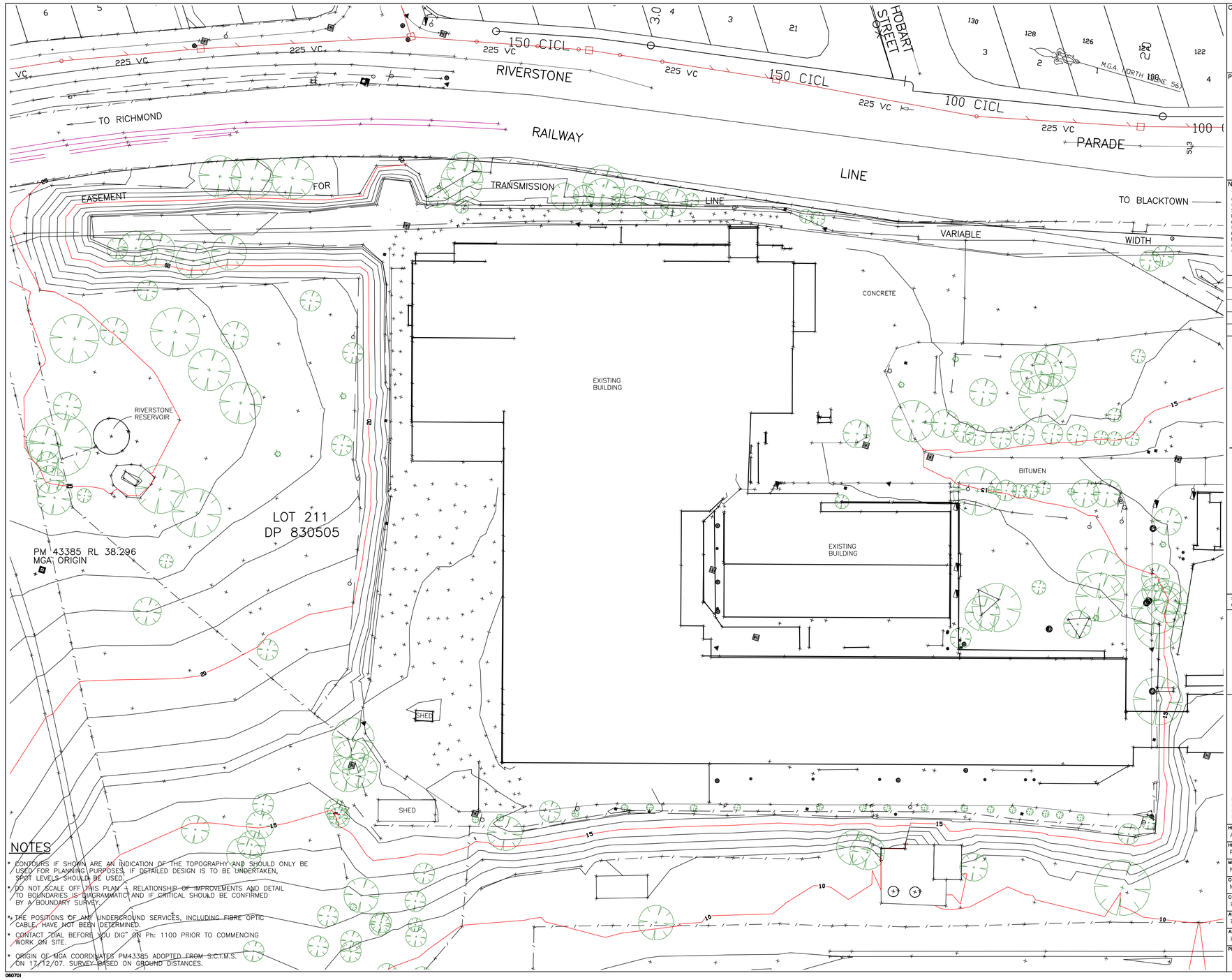

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FS 535003

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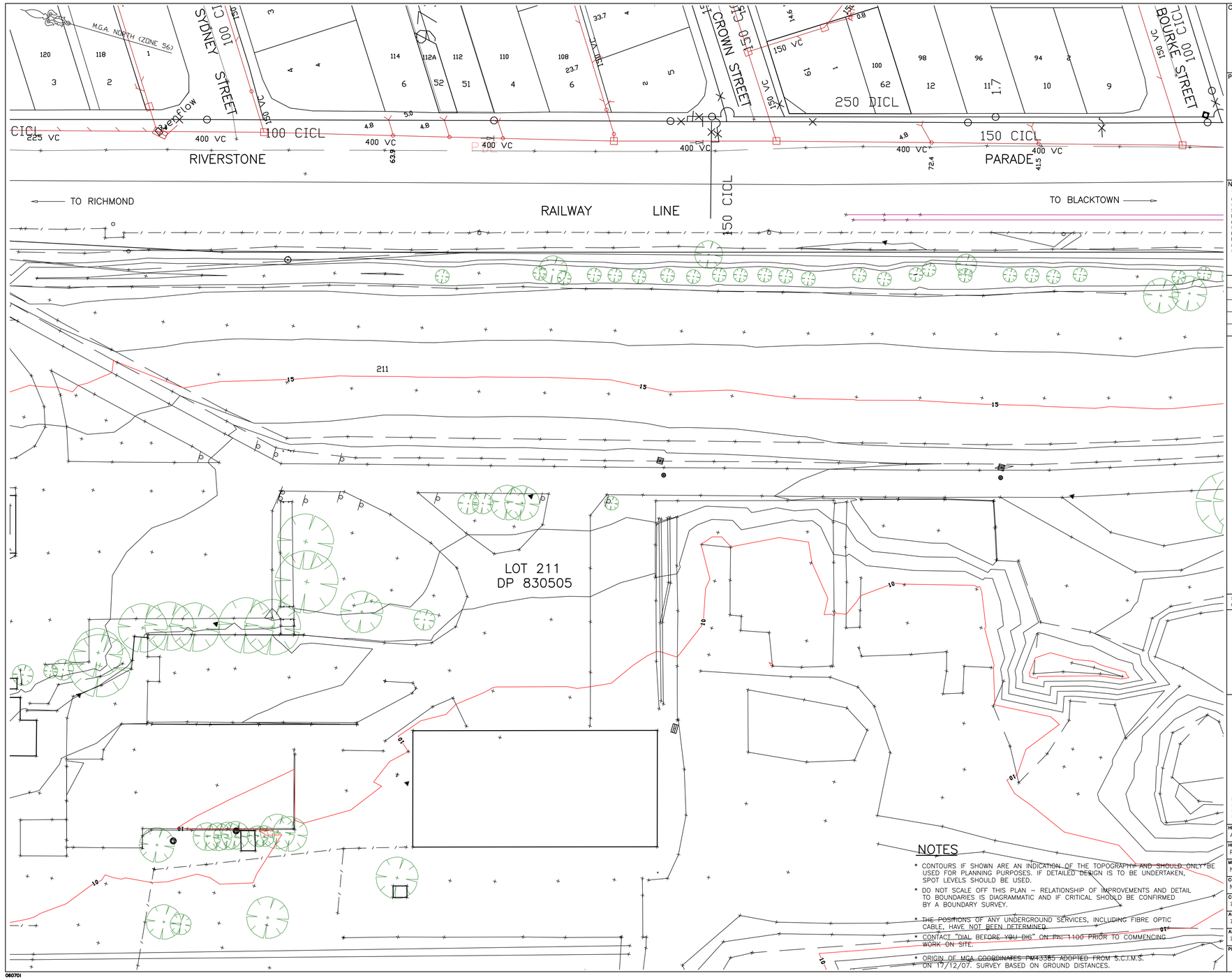

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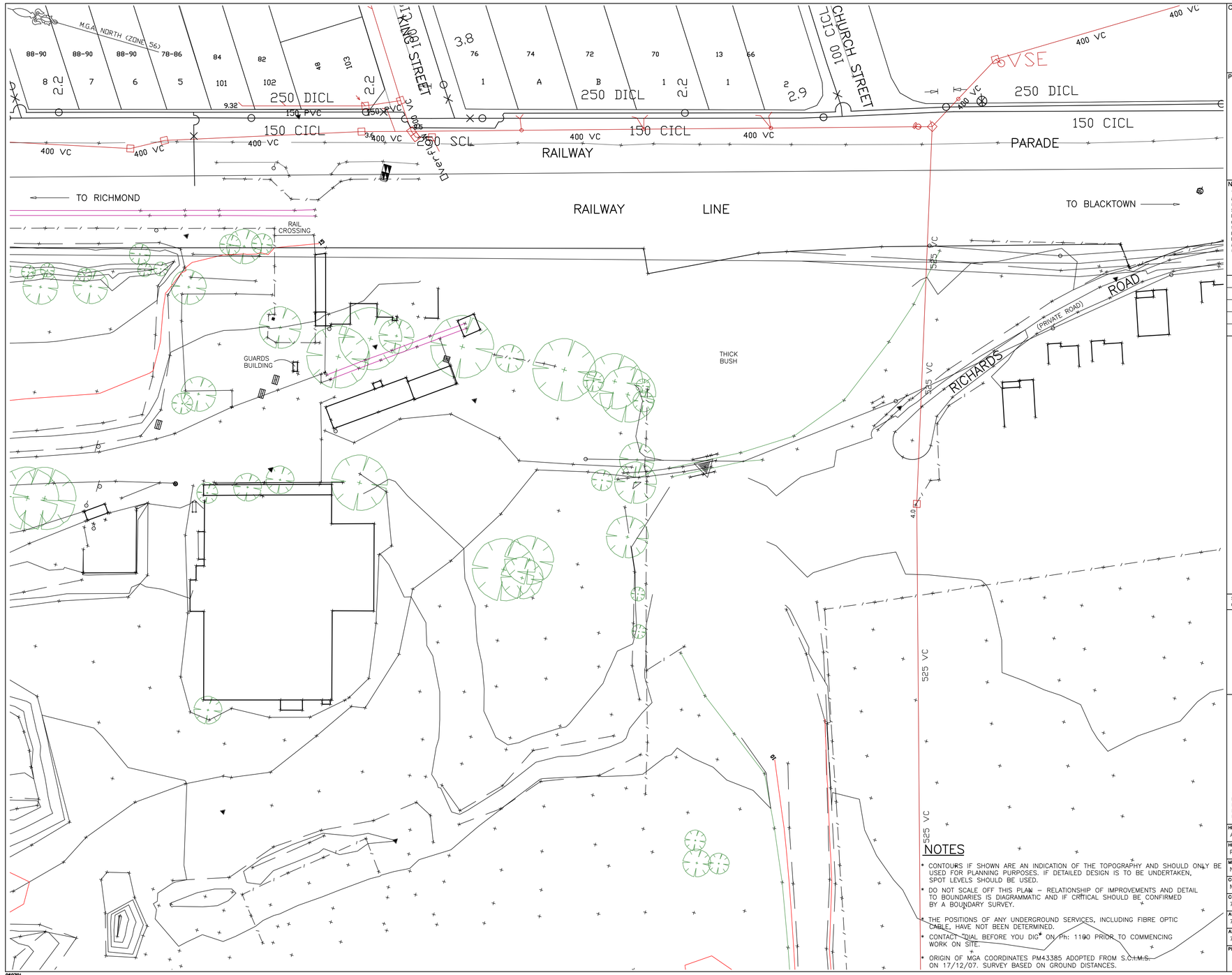

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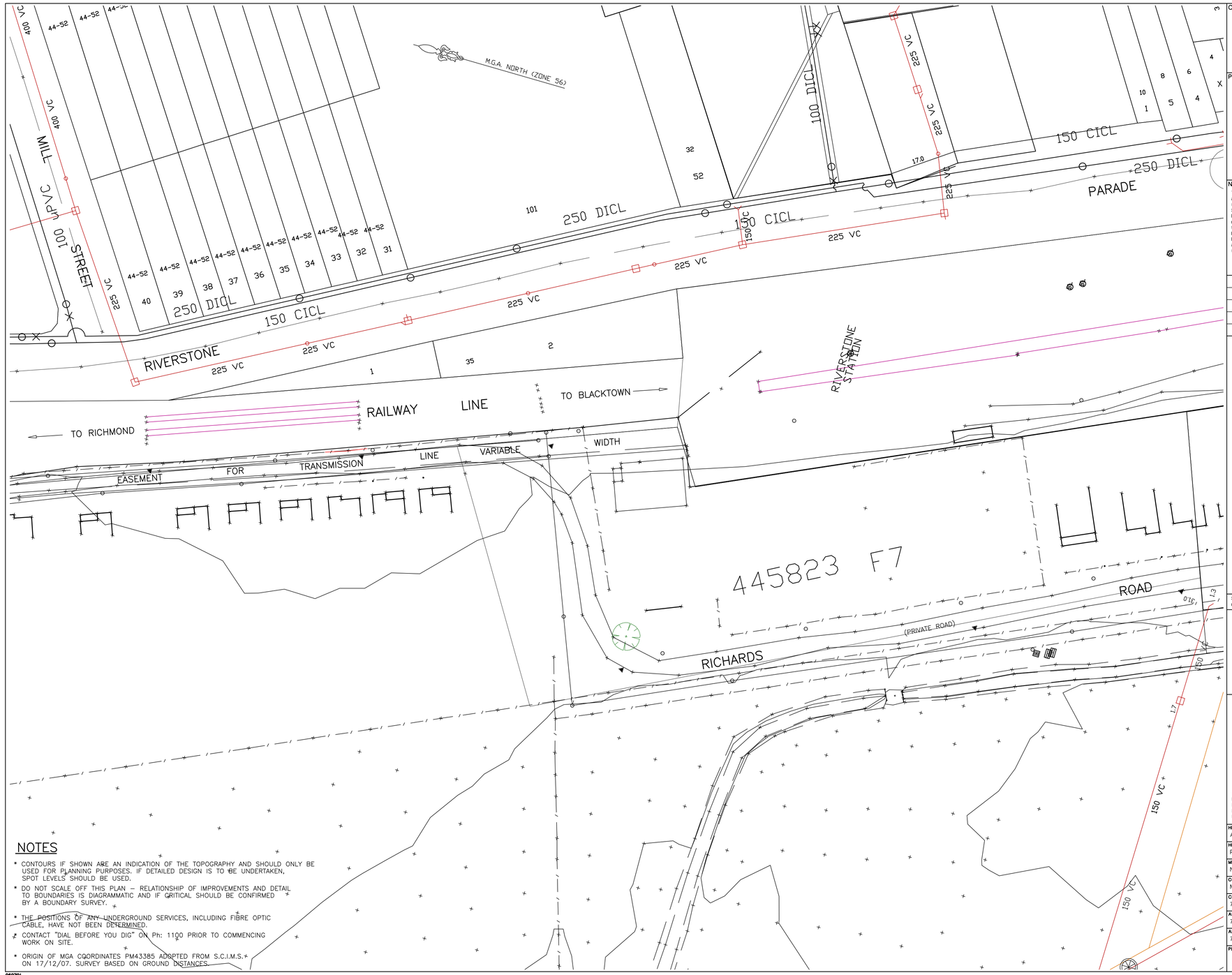

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PLAN NUMBER: 73341	SHEET 13 OF 25

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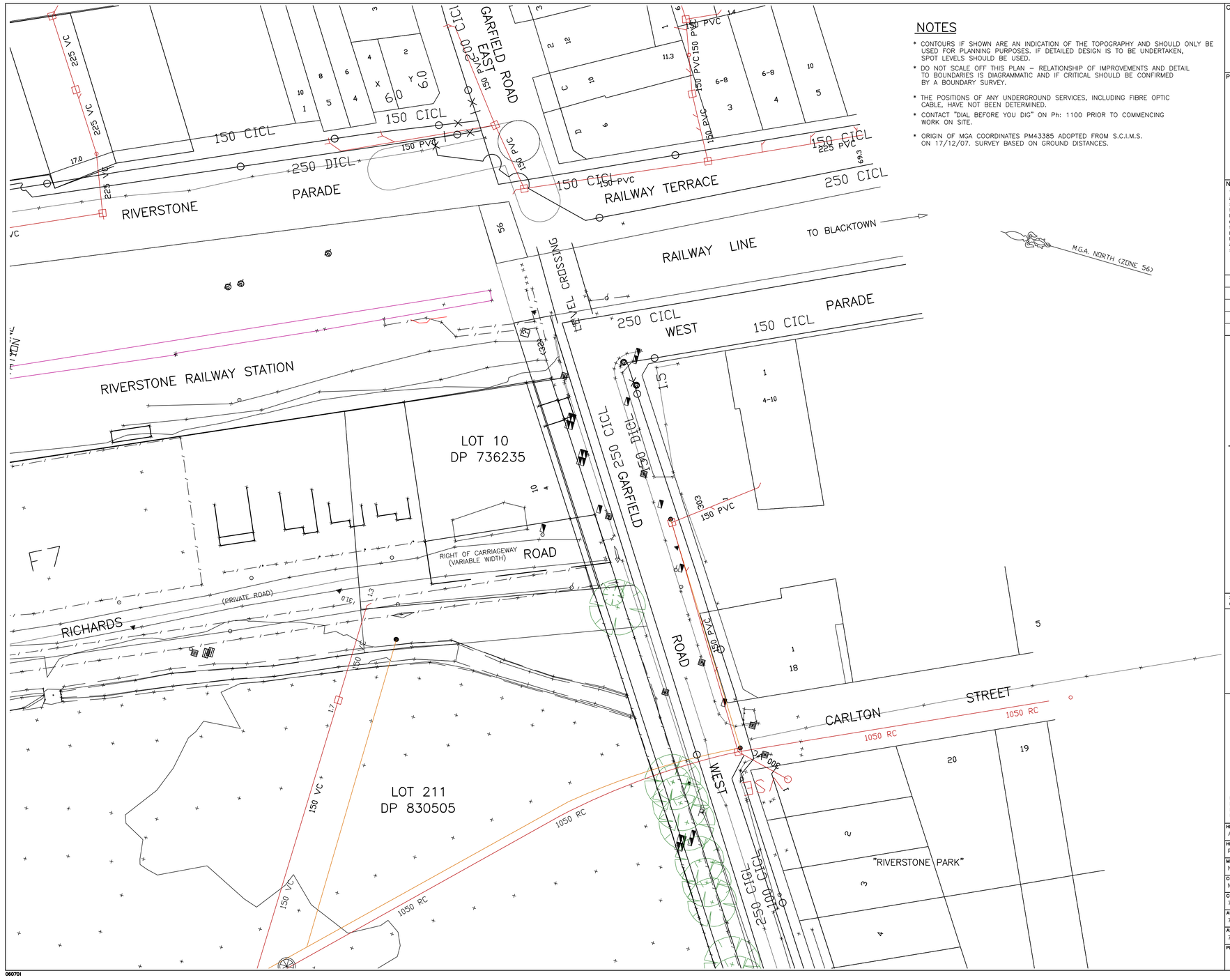

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HEIGHT DATUM: AHD	LOCAL AUTHORITY: BLACKTOWN COUNCIL
HEIGHT ORIGIN: PM 43386 RL 38.296	SCALE: 1:500 (A1)
MERIDIAN: N/A	CONTOUR INTERVAL: 1.0 Metre
CO-ORD SYSTEM: MGA	SURVEYOR: BS — DATE OF SURVEY: 03/03/08
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SHEET 14 OF 25

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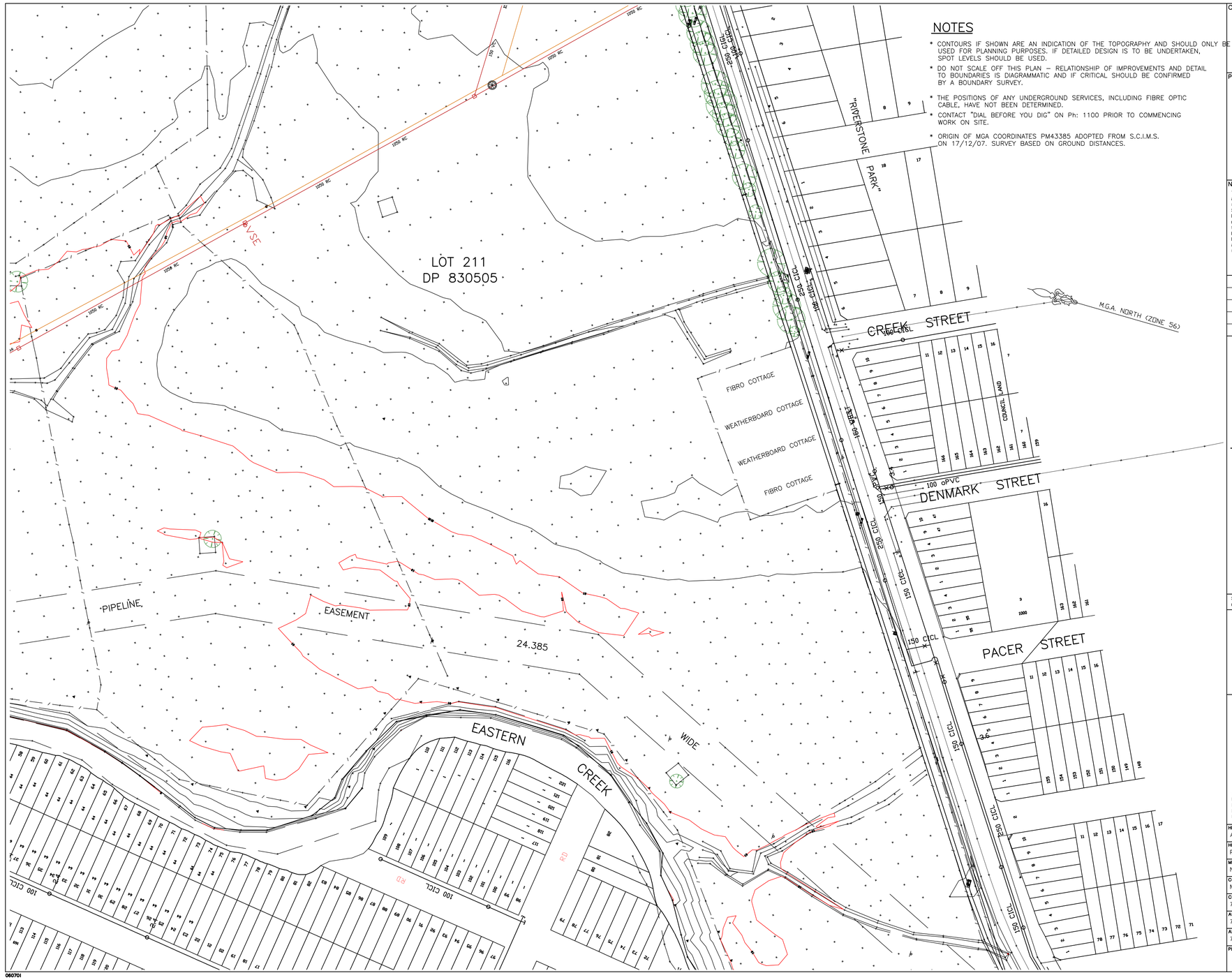

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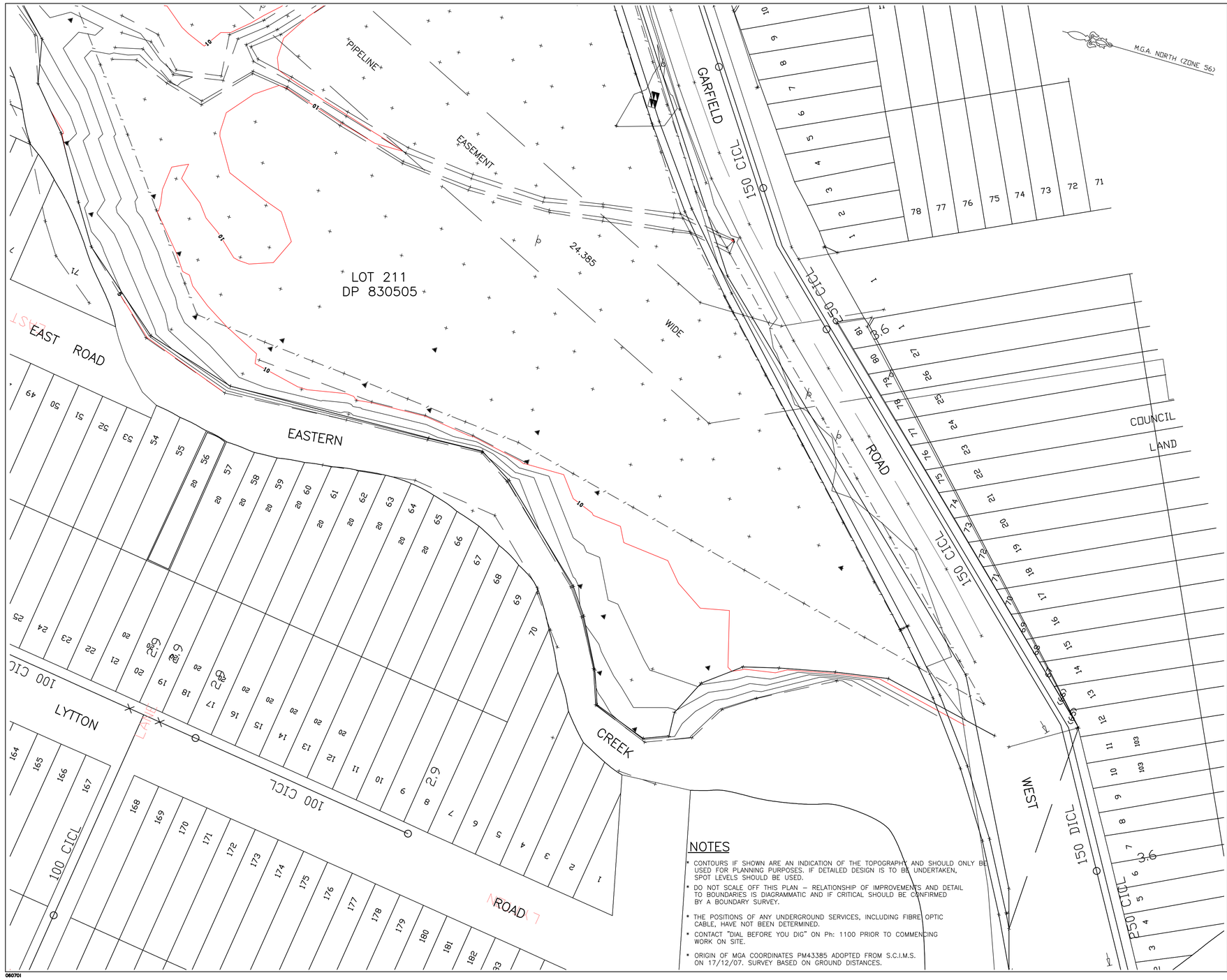

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AUTOCAD FILE: 73341	CHECKED: GKO DATE: ??/??/??
ARCHIVE FILE: 73341	APPROVED: GKO DATE: ??/??/??
PLAN NUMBER: 73341	

SHEET 16 OF 25

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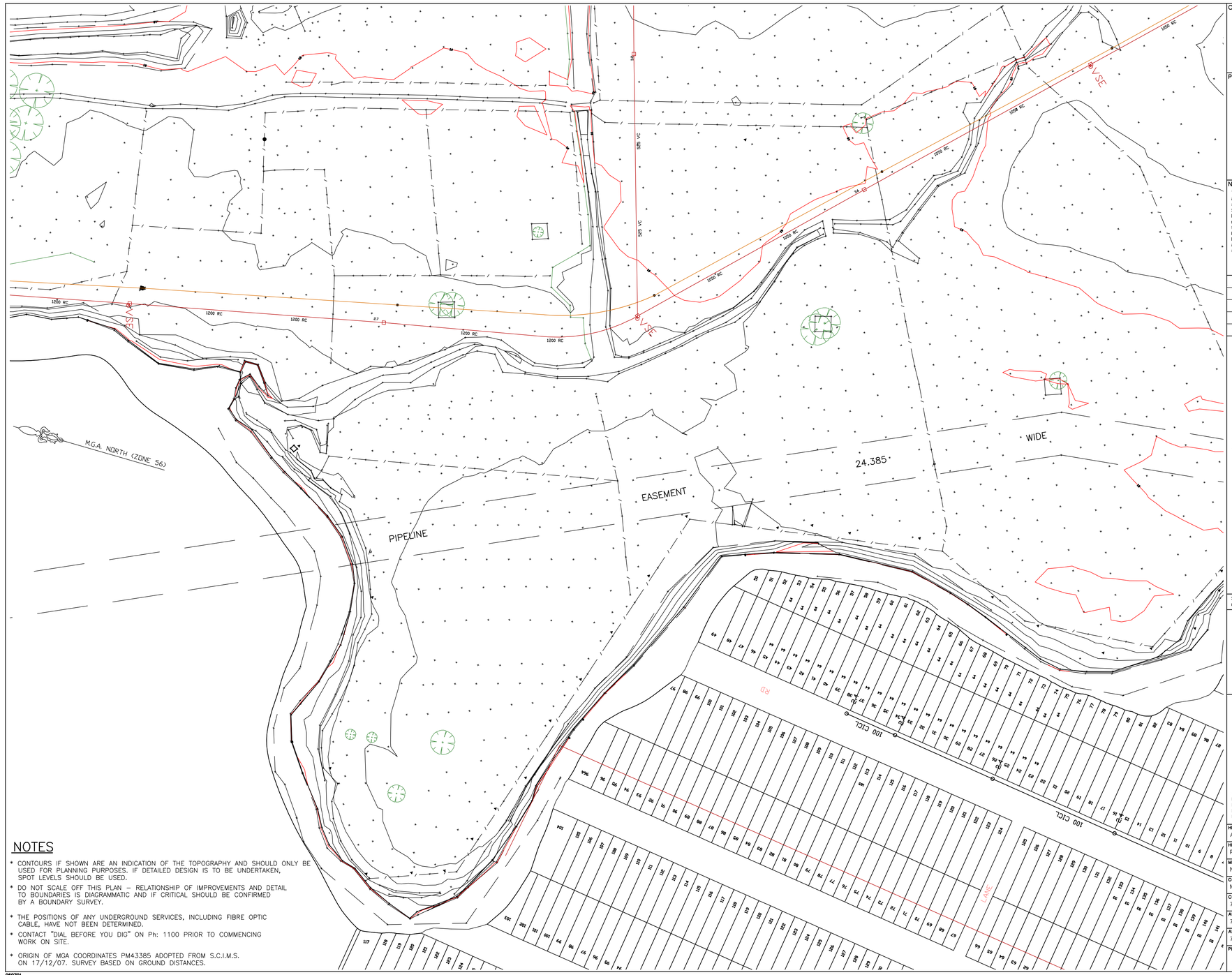

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RIVERSTONE PARADE PTY LTD

PROJECT

PLAN OF DETAILS & CONTOURS OVER RIVERSTONE WEST PRECINCT BEING LOT 211 IN DP 830505

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- WATER HYDRANT
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e sydney@landpartners.com.au
w www.landpartners.com.au

ISO 9001:2008
FS 535063

HEIGHT DATUM: AHD	LOCAL AUTHORITY: BLACKTOWN COUNCIL
HEIGHT ORIGIN: PM 43386 RL 38.296	SCALE: 1:1000 (A1)
MERIDIAN: N/A	CONTOUR INTERVAL: 1.0 Metre
CO-ORD SYSTEM: MGA	SURVEYOR: BS — DATE OF SURVEY: 03/03/08
CCAD FILE: 71372-DE1	DRAWN: JMD — DATE: 24/09/2013
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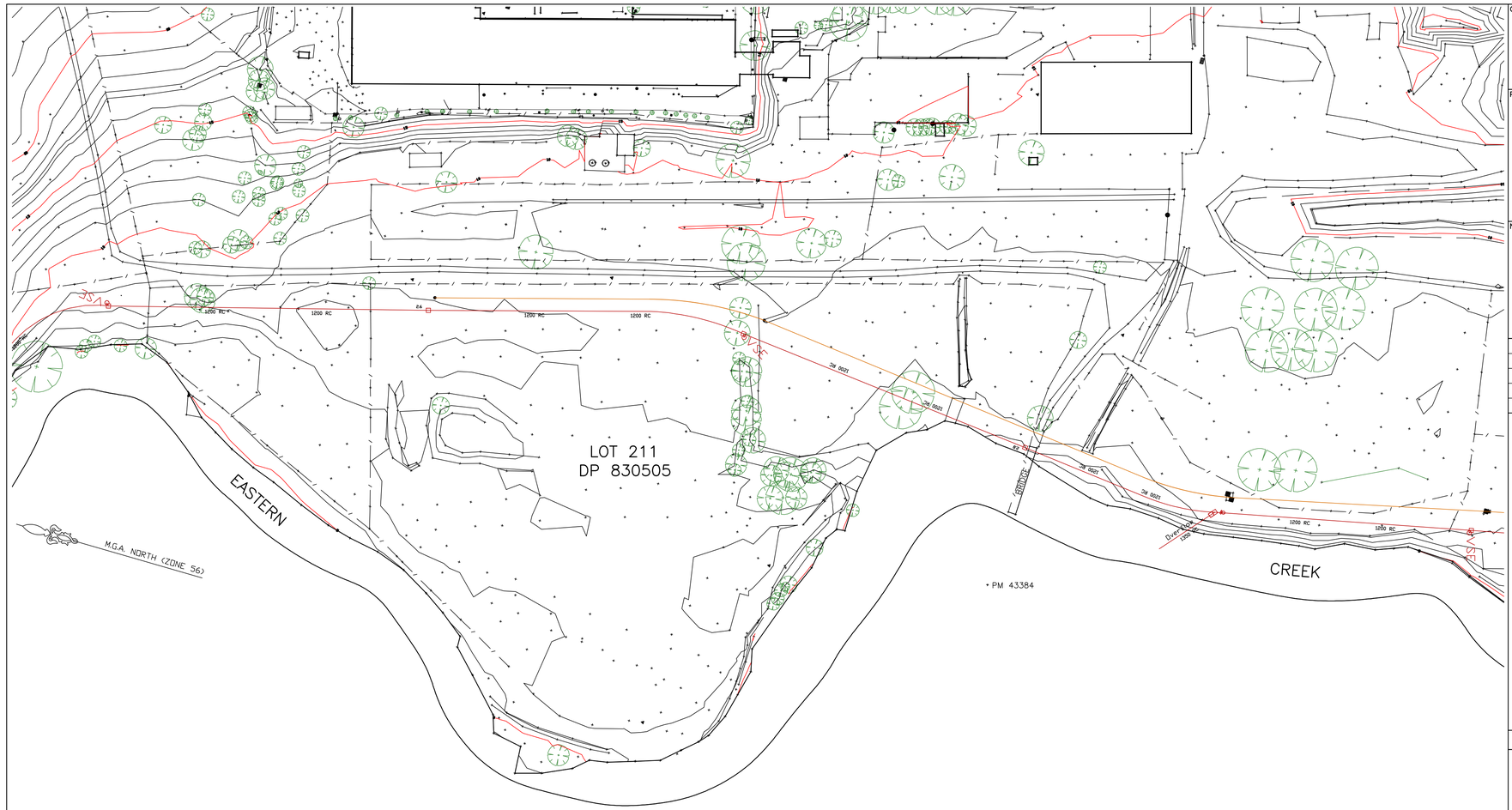

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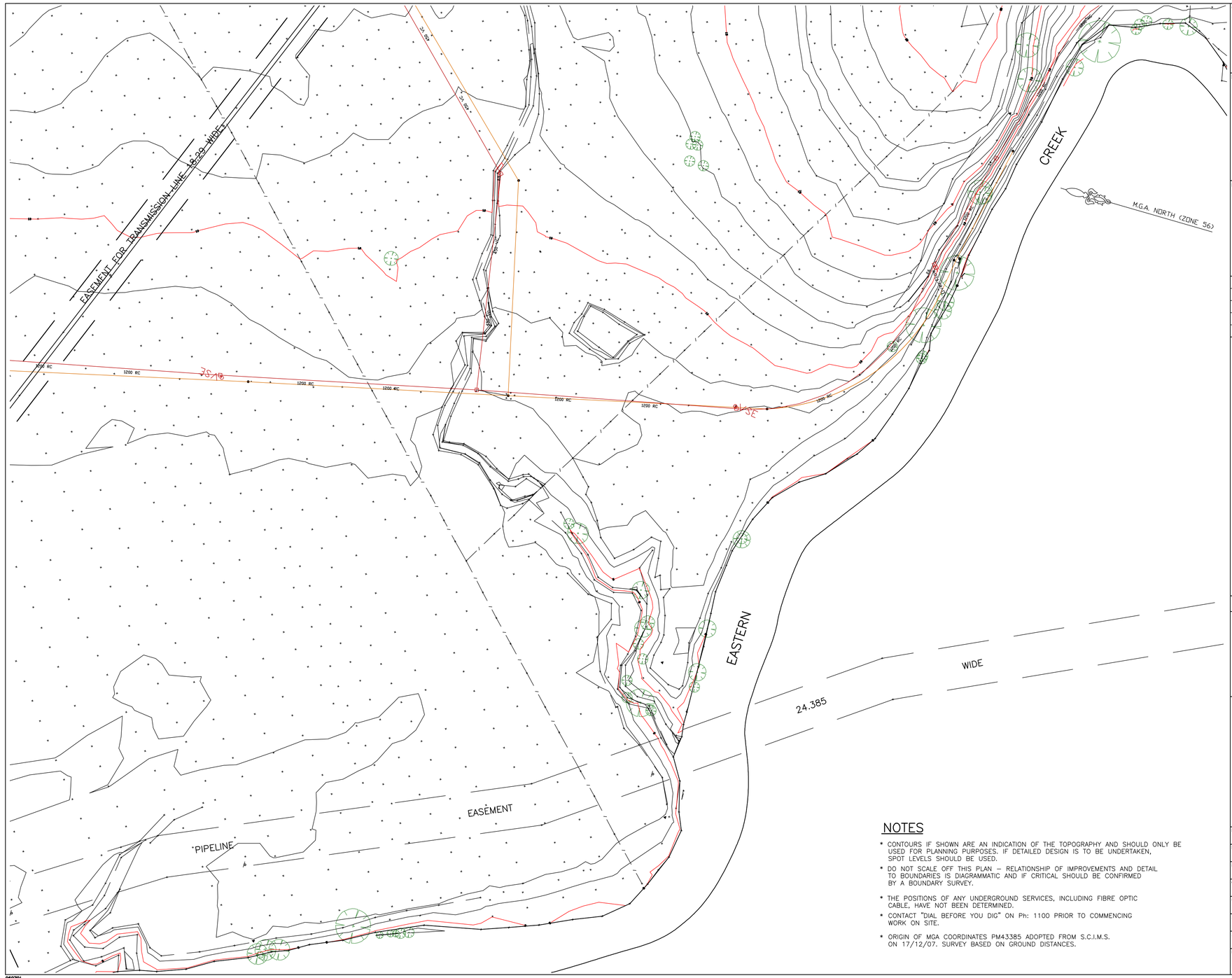
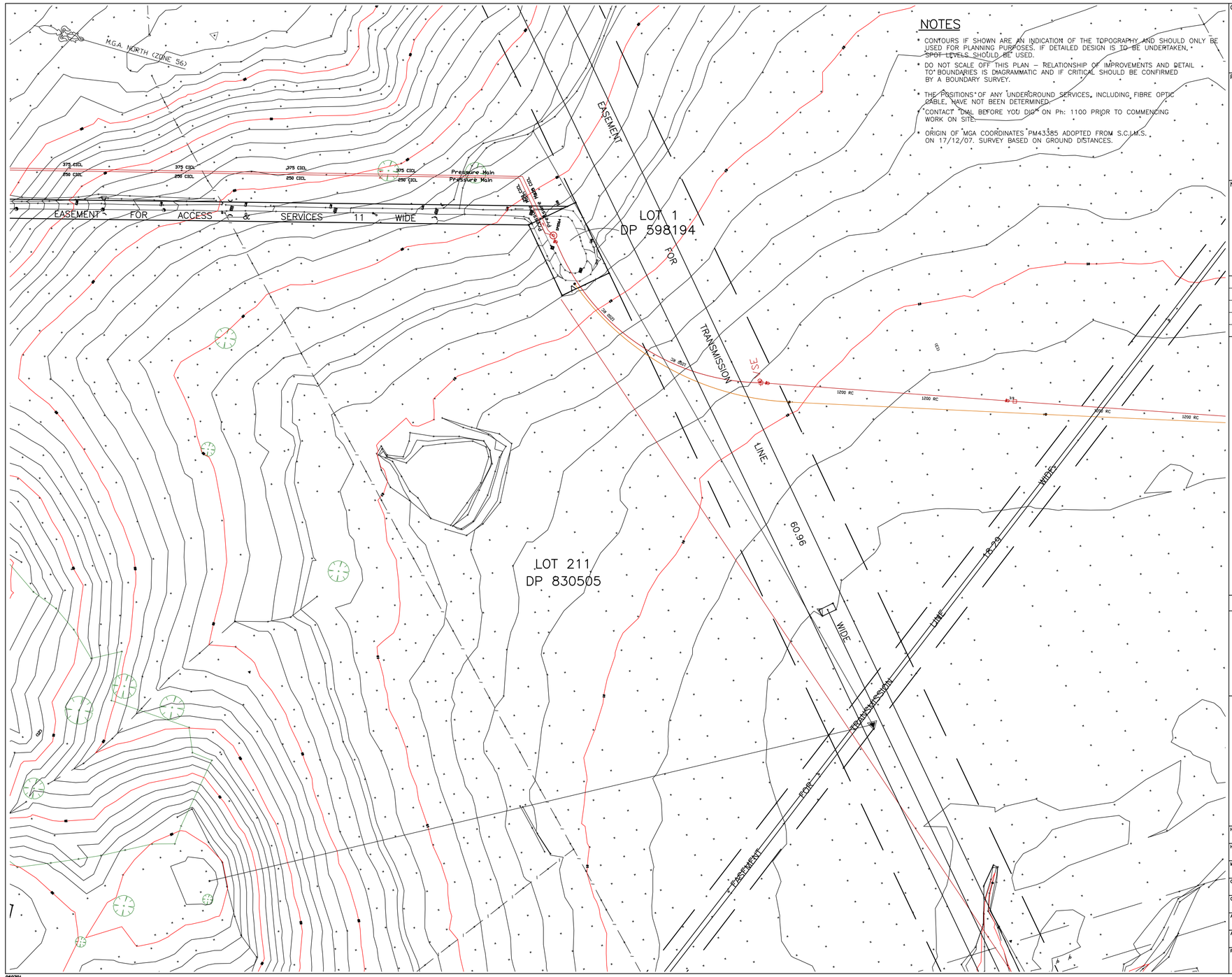

EASEMENT FOR TRANSMISSION LINE 16.29 WIDE
CREEK
M.G.A. NORTH (ZONE 56)
EASTERN
WIDE
24.385
EASEMENT
PIPELINE
1200 RC
1050 RC
1000 RC
1050 SC
1200 SC
1050 RC
1200 RC
1200 RC
1200



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PROJECT

PLAN OF DETAILS & CONTOURS OVER RIVERSTONE WEST PRECINCT BEING LOT 211 IN DP 830505

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SHEET 20 OF 25

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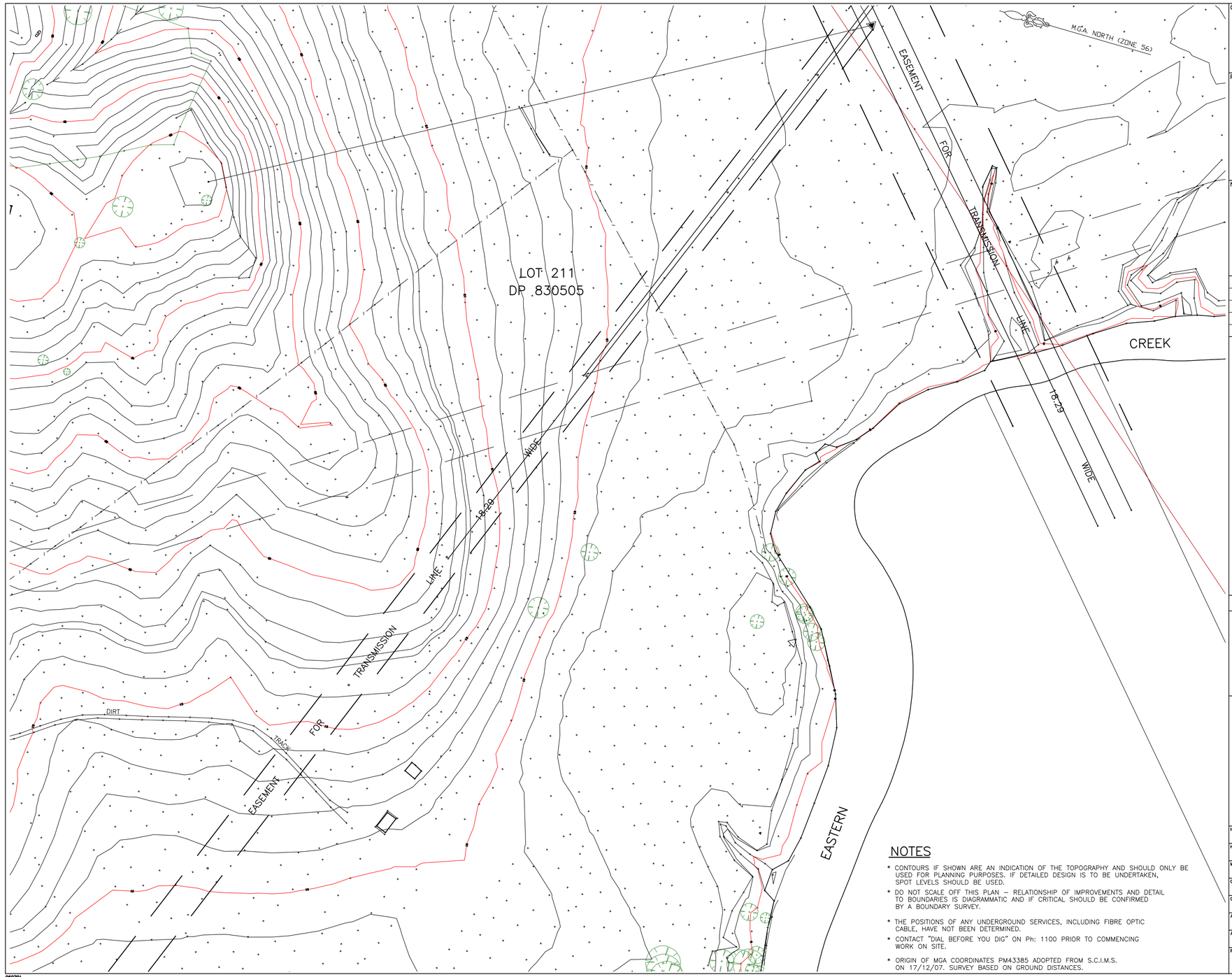

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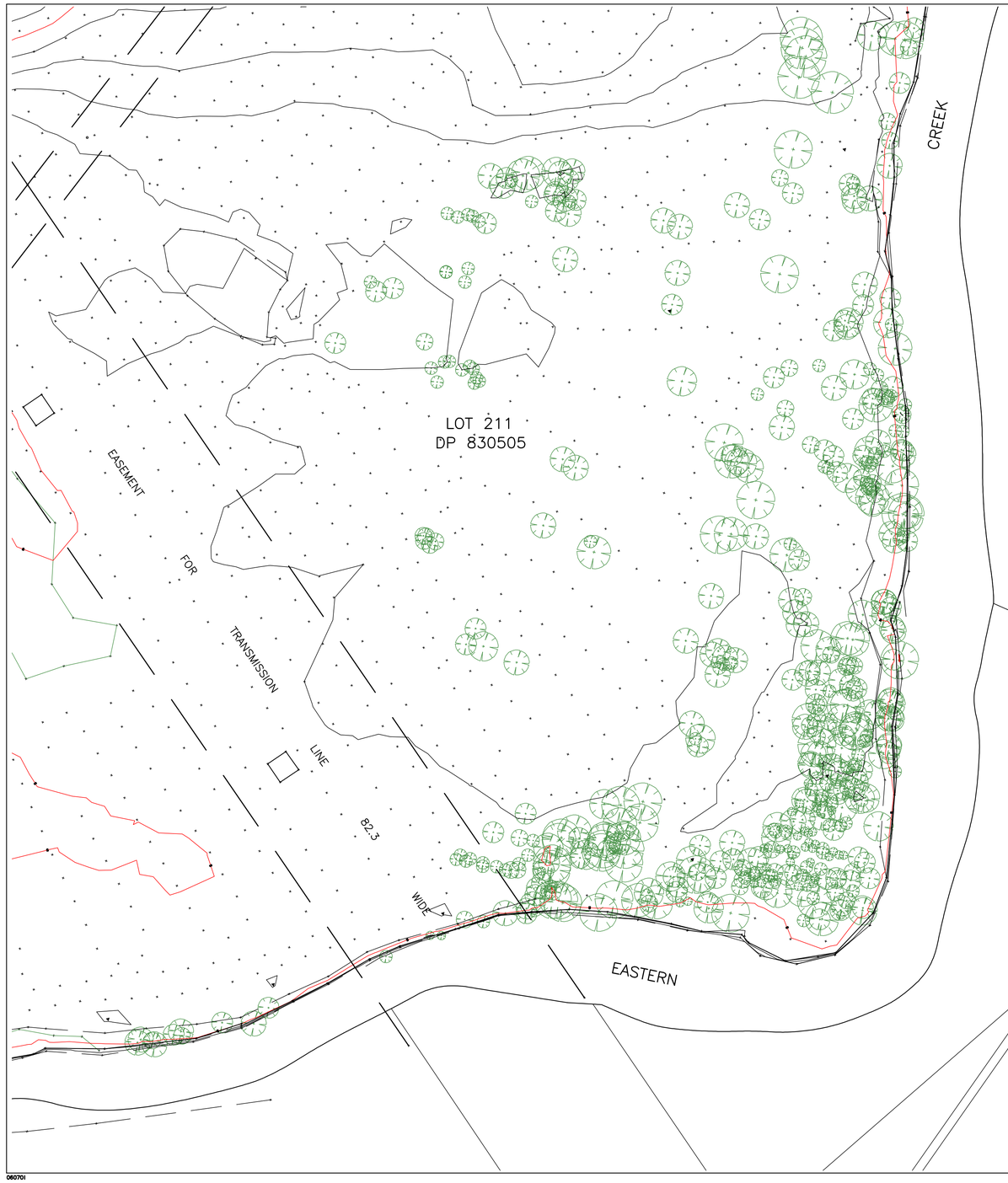

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M.G.A. NORTH (ZONE 56)

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PROJECT

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HEIGHT DATUM AHD	**LOCAL AUTHORITY** BLACKTOWN COUNCIL
HEIGHT ORIGIN PM 43386 RL 38.296	**SCALE** 1:1000 (A1)
MERIDIAN N/A	**CONTOUR INTERVAL** 1.0 Metre
CO-ORD SYSTEM MGA	**SURVEYOR** BS — **DATE OF SURVEY** 03/03/08
CCAD FILE 71372-DE1	**DRAWN** JMD — **DATE** 24/09/2013
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SHEET 22 OF 25

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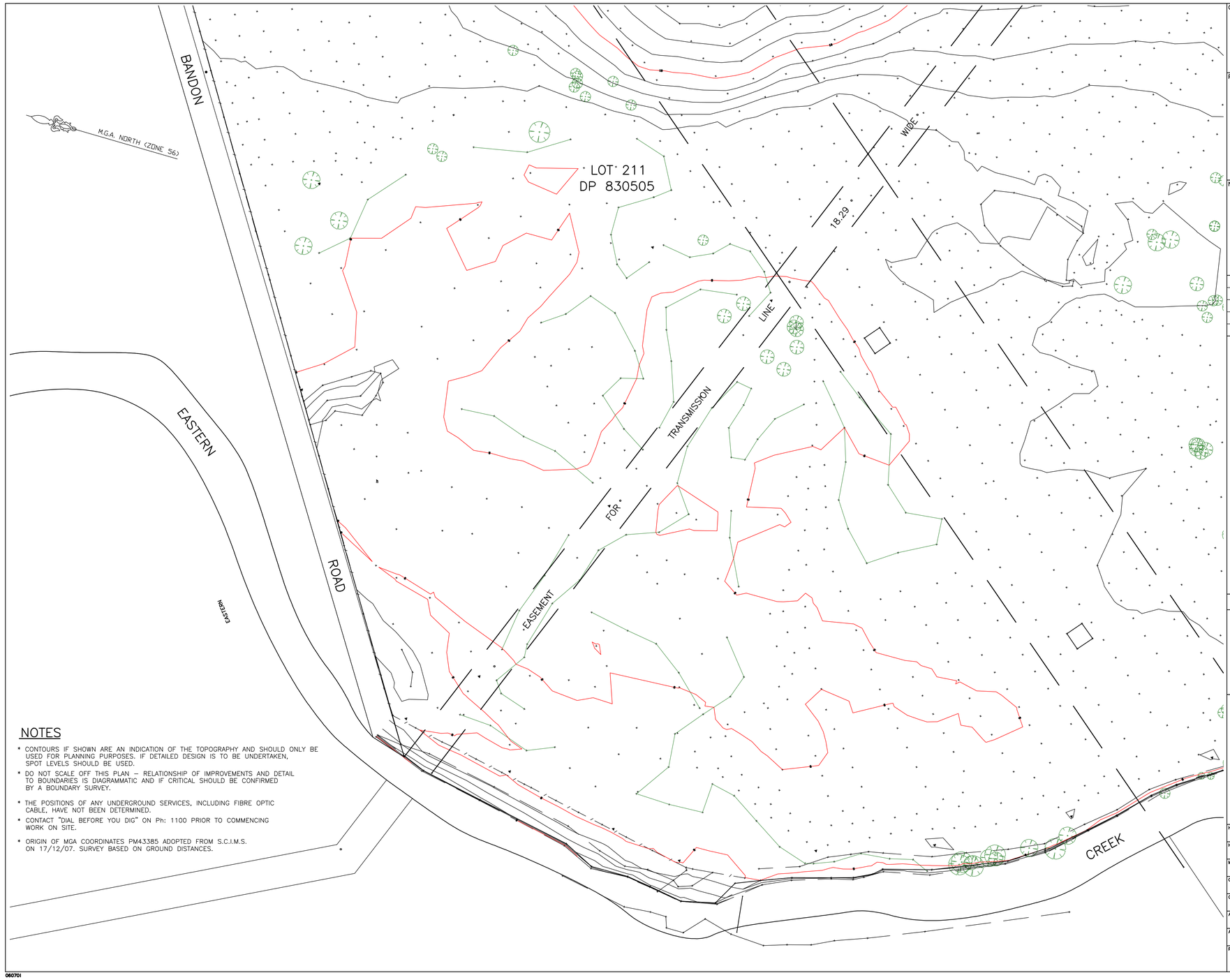

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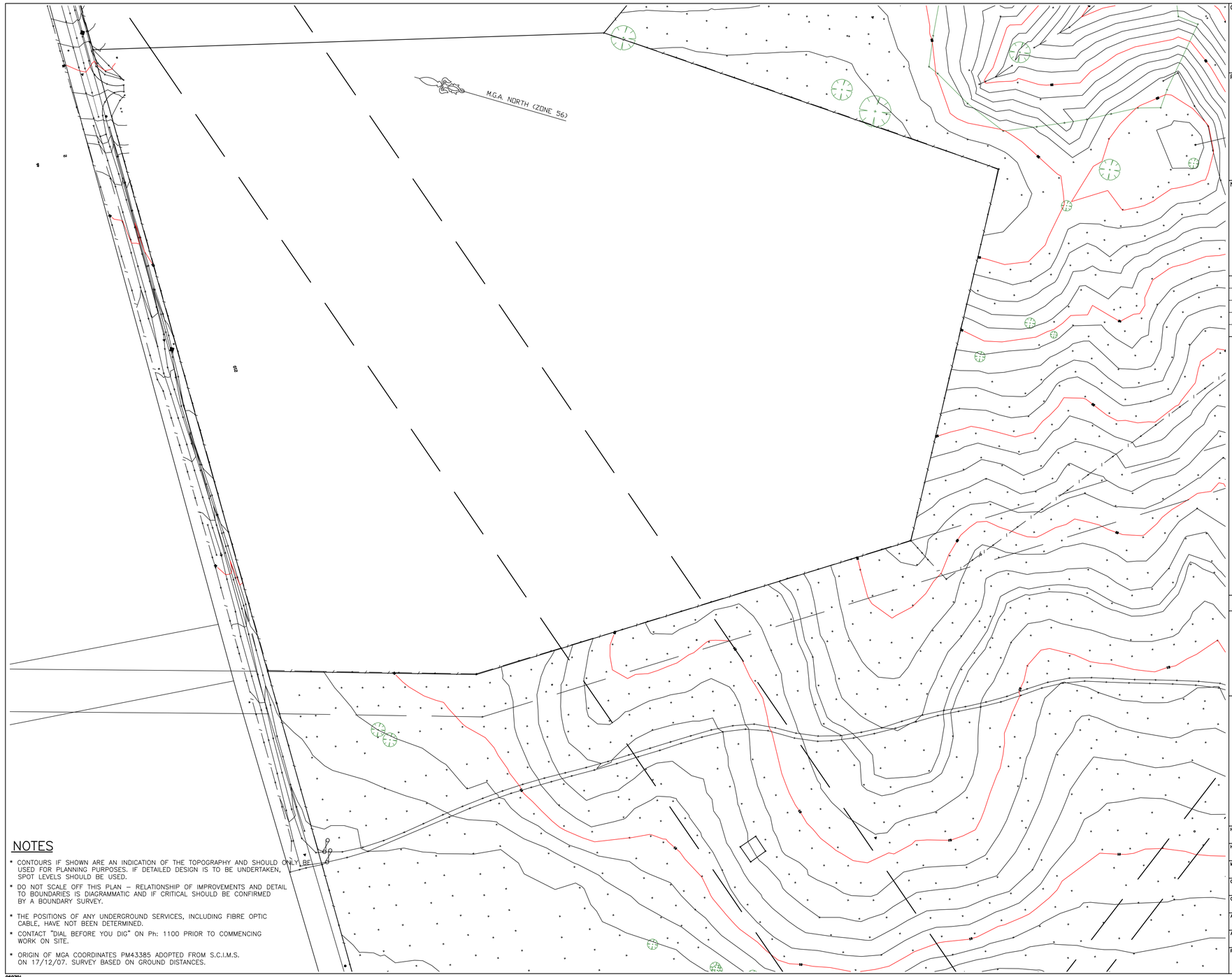

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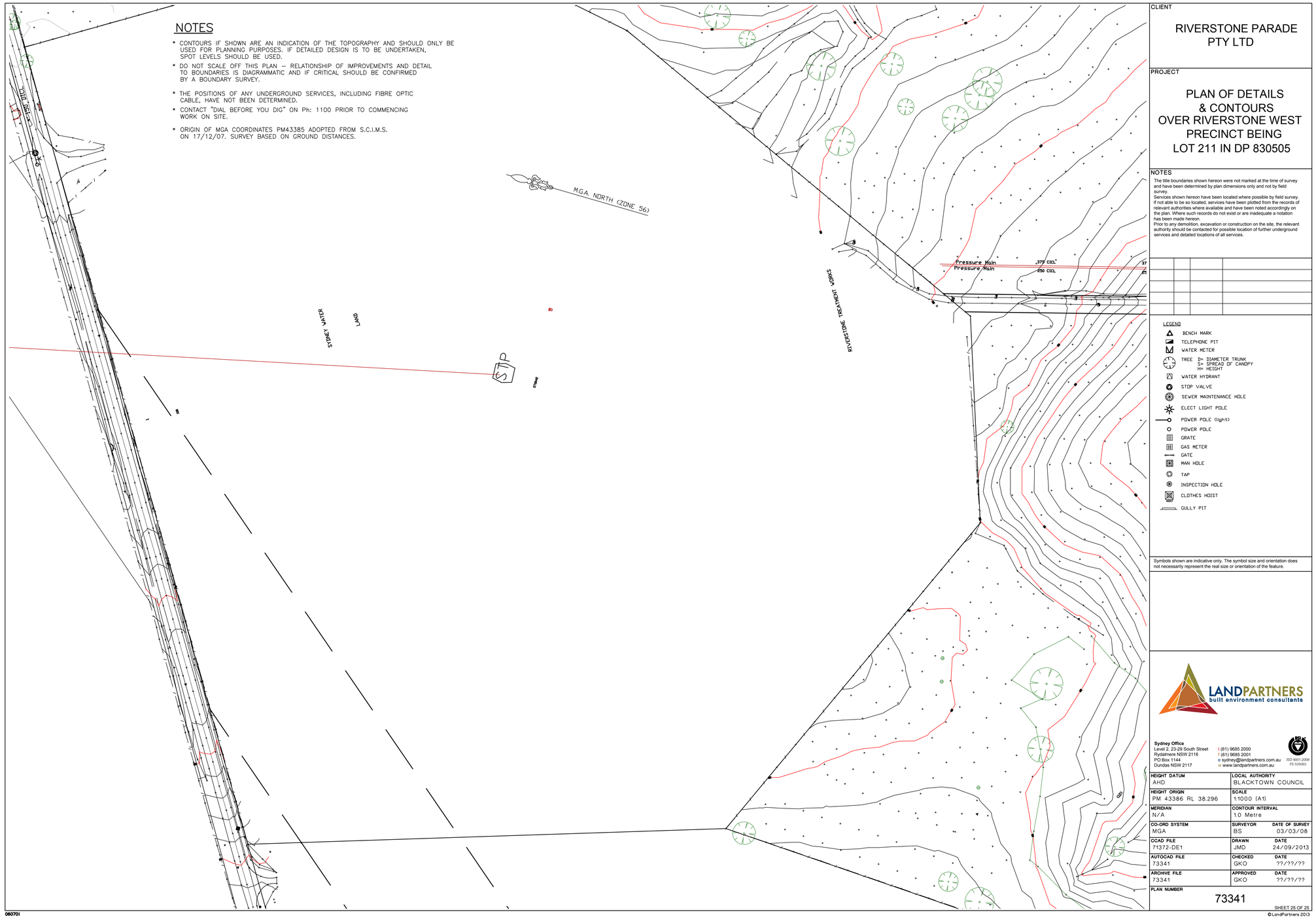

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NOTES

The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey.
Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon.
Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

LEGEND

- BENCH MARK
- TELEPHONE PIT
- WATER METER
- TREE D= DIAMETER TRUNK S= SPREAD OF CANOPY H= HEIGHT
- WATER HYDRANT
- STOP VALVE
- SEWER MAINTENANCE HOLE
- ELECT LIGHT POLE
- POWER POLE (light)
- POWER POLE
- GRATE
- GAS METER
- GATE
- MAN HOLE
- TAP
- INSPECTION HOLE
- CLOTHES HOIST
- GULLY PIT

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the feature.

LANDPARTNERS built environment consultants

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e sydney@landpartners.com.au
w www.landpartners.com.au

ISO 9001:2008 FS 535003

HEIGHT DATUM: AHD	LOCAL AUTHORITY: BLACKTOWN COUNCIL
HEIGHT ORIGIN: PM 43386 RL 38.296	SCALE: 1:1000 (A1)
MERIDIAN: N/A	CONTOUR INTERVAL: 1.0 Metre
CO-ORD SYSTEM: MGA	SURVEYOR: BS — DATE OF SURVEY: 03/03/08
CCAD FILE: 71372-DE1	DRAWN: JMD — DATE: 24/09/2013
AUTOCAD FILE: 73341	CHECKED: GKO — DATE: ??/??/??
ARCHIVE FILE: 73341	APPROVED: GKO — DATE: ??/??/??
PLAN NUMBER: 73341	

SHEET 25 OF 25

060701

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APPENDIX

B

FLOOD MODELLING RESULTS

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Existing (Depth & WL)

E1 Local Flow Simulation - 20% AEP
E2 Hawkesbury Neapean Tailwater Simulation - 20% AEP
E3 Hawkesbury Neapean Inflow Simulation - 20% AEP
E4 Local Flow Simulation - 1% AEP
E5 Hawkesbury Neapean Tailwater Simulation - 1% AEP
E6 Hawkesbury Neapean Inflow Simulation - 1% AEP
E7 Local Flow Simulation - 1% AEP with 20% AEP HN TWL
E8 Local Flow Simulation - 1% AEP with 1% AEP HN TWL

Interim Less Existing

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I2 Hawkesbury Neapean Tailwater Simulation - 20% AEP
I3 Hawkesbury Neapean Inflow Simulation - 20% AEP
I4 Local Flow Simulation - 1% AEP
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I6 Hawkesbury Neapean Inflow Simulation - 1% AEP

Design (Depth & WL)

D1 Local Flow Simulation - 20% AEP
D2 Hawkesbury Neapean Tailwater Simulation - 20% AEP
D3 Hawkesbury Neapean Inflow Simulation - 20% AEP
D4 Local Flow Simulation - 5% AEP
D5 Hawkesbury Neapean Tailwater Simulation - 5% AEP
D6 Hawkesbury Neapean Inflow Simulation - 5% AEP
D7 Local Flow Simulation - 1% AEP
D8 Local Flow Simulation - 1% AEP with 20% AEP HN TWL
D9 Local Flow Simulation - 1% AEP with 1% AEP HN TWL
D10 Hawkesbury Neapean Tailwater Simulation - 1% AEP
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D12 Local Flow Simulation - 0.833% AEP
D13 Hawkesbury Neapean Tailwater Simulation - 0.833% AEP
D14 Local Flow Simulation - 0.5% AEP
D15 Hawkesbury Neapean Tailwater Simulation - 0.5% AEP
D16 Hawkesbury Neapean Inflow Simulation - 0.5% AEP
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D18 Hawkesbury Neapean Tailwater Simulation - 0.2% AEP
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D21 Hawkesbury Neapean Tailwater Simulation - PMF
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Design Less Interim-Wate Level Difference

D23 Local Flow Simulation - 20% AEP
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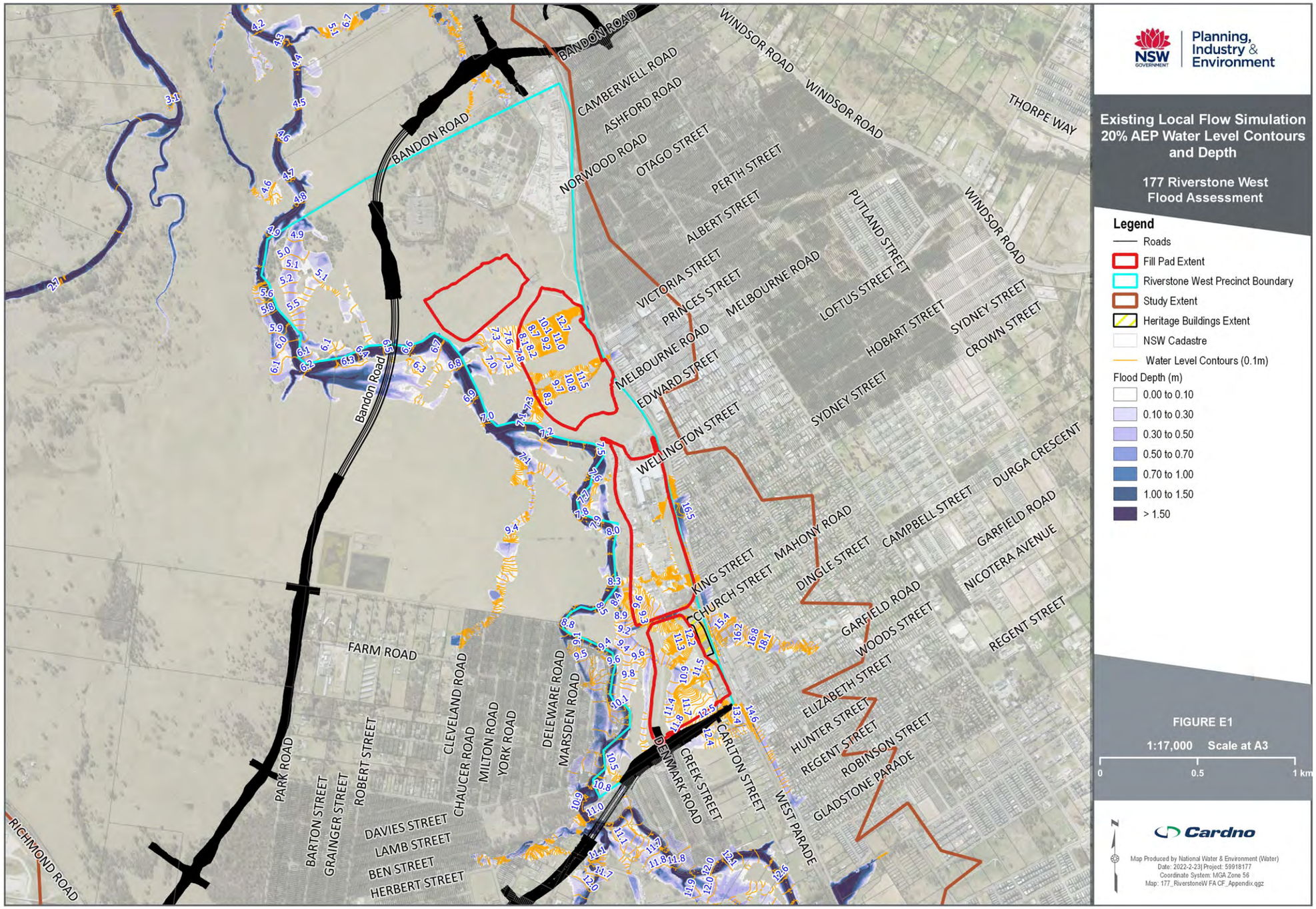
D32.1	Hawkesbury Neapean Tailwater Simulation - 1% AEP-Model Extent with Aerial
D32.2	Hawkesbury Neapean Tailwater Simulation - 1% AEP-Model Extent without Aerial
D33	Hawkesbury Neapean Inflow Simulation - 1% AEP
	Design Less Existing
D34	Local Flow Simulation - 20% AEP
D35	Local Flow Simulation - 1% AEP



Planning, Industry & Environment

Existing Local Flow Simulation 20% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- Water Level Contours (0.1m)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

FIGURE E1

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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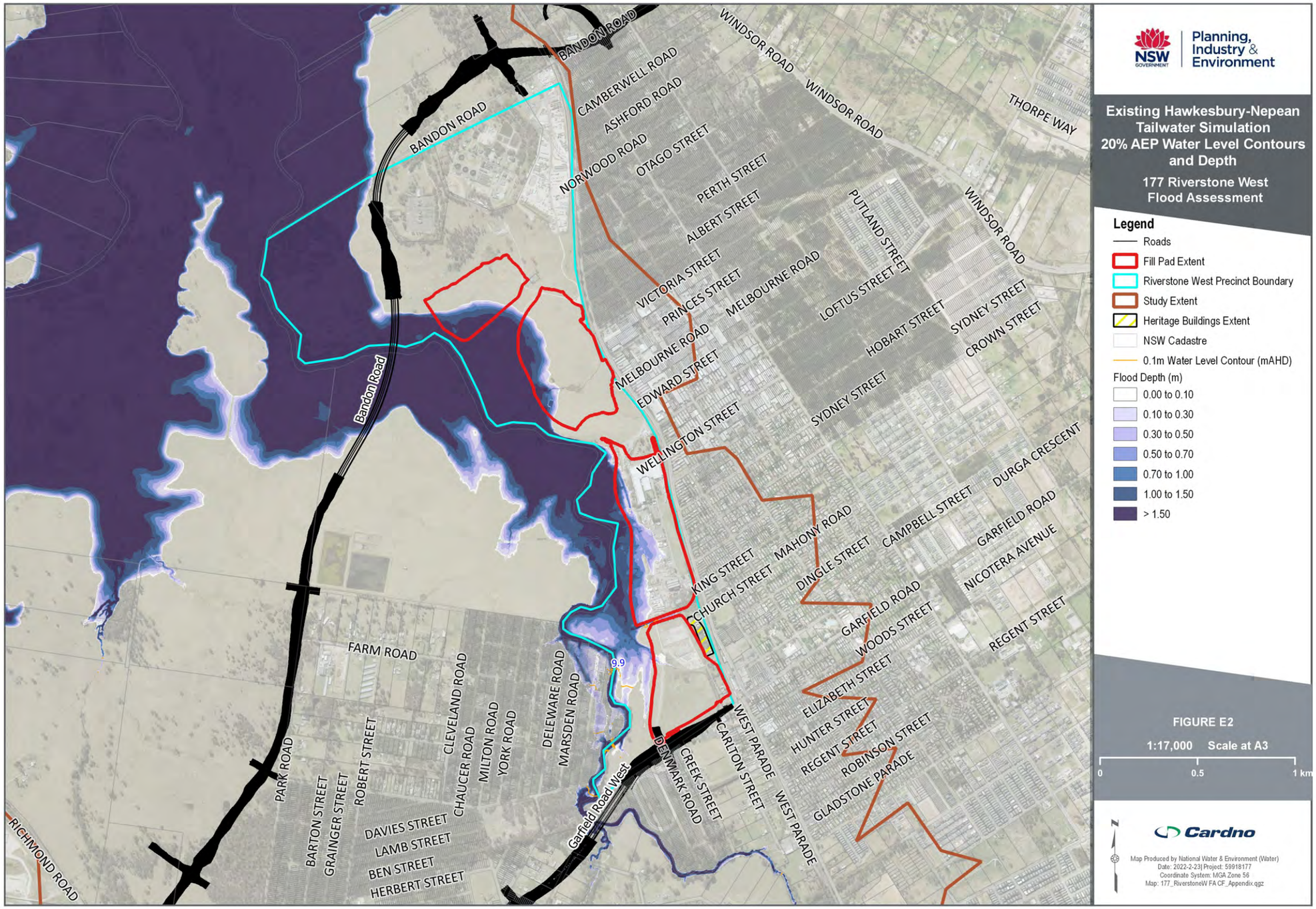
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Existing Hawkesbury-Nepean Tailwater Simulation 20% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

FIGURE E2

1:17,000 Scale at A3

0 0.5 1 km

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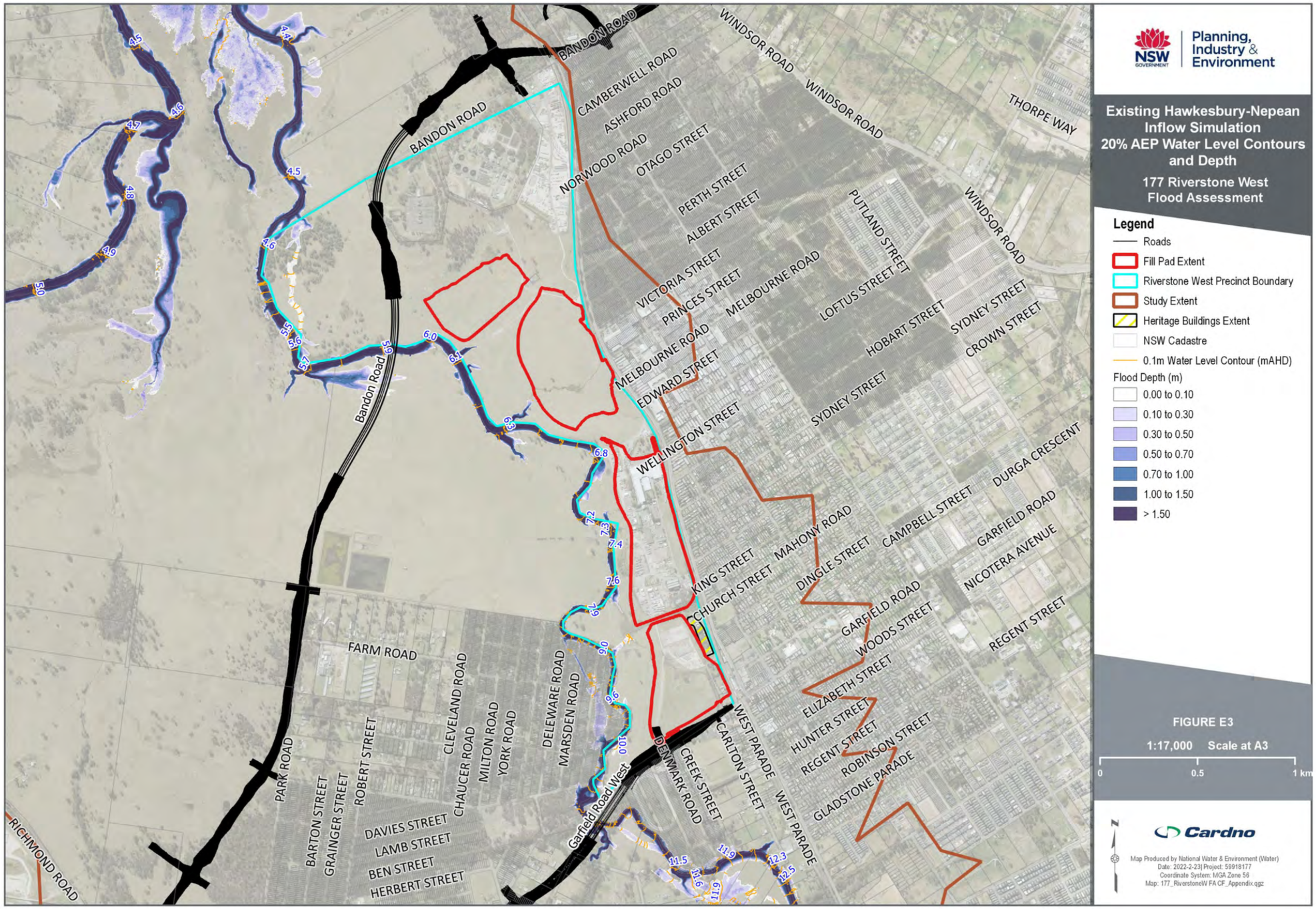
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Existing Hawkesbury-Nepean Inflow Simulation 20% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

FIGURE E3

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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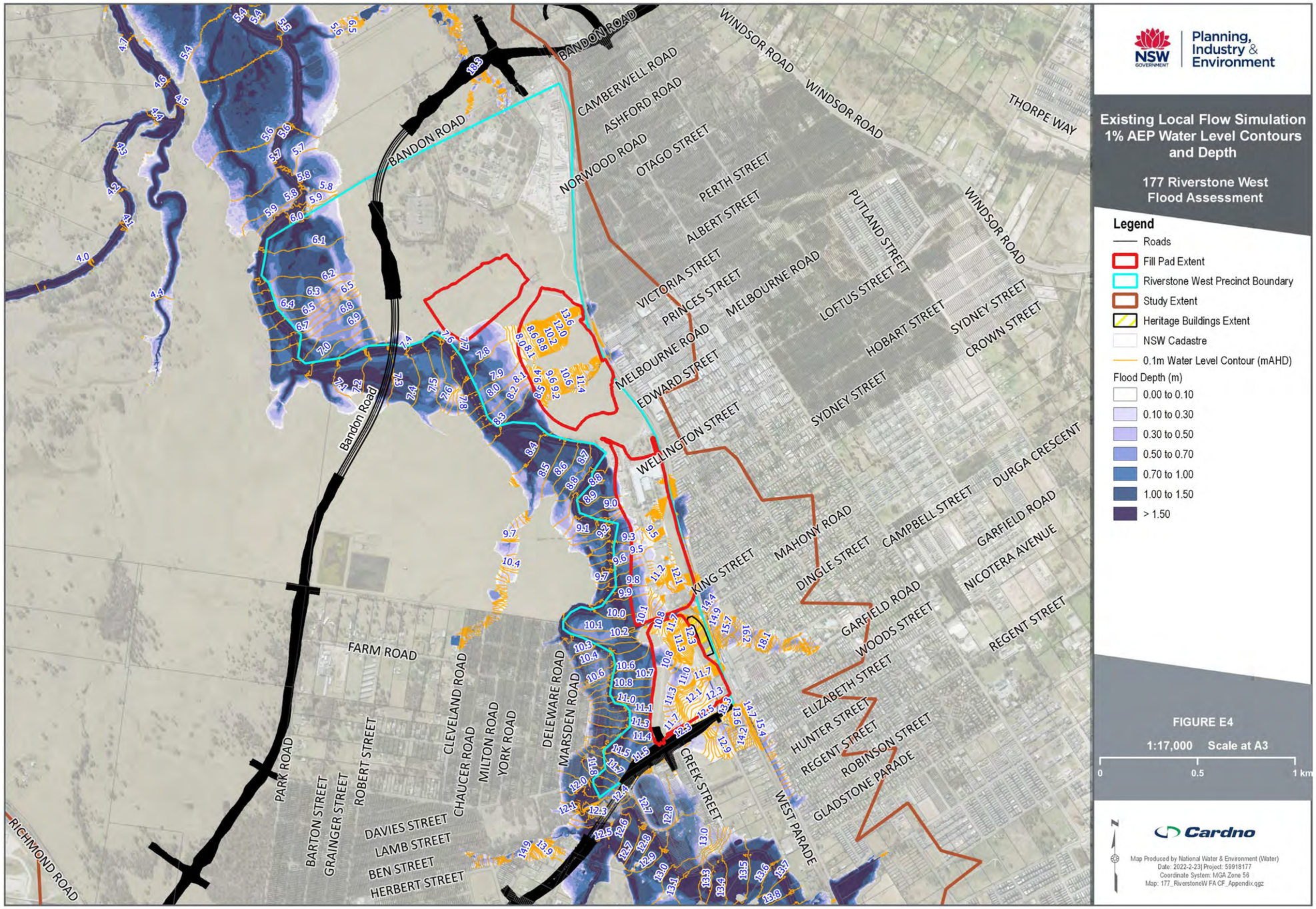
Map: 177_RiverstoneW FA CF_Appendix.qgz


BANDON ROAD
WINDSOR ROAD
THORPE WAY
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
DINGLE STREET
KING STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CREEK STREET
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
NSW GOVERNMENT
Planning, Industry & Environment
Existing Local Flow Simulation 1% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
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Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE E4
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
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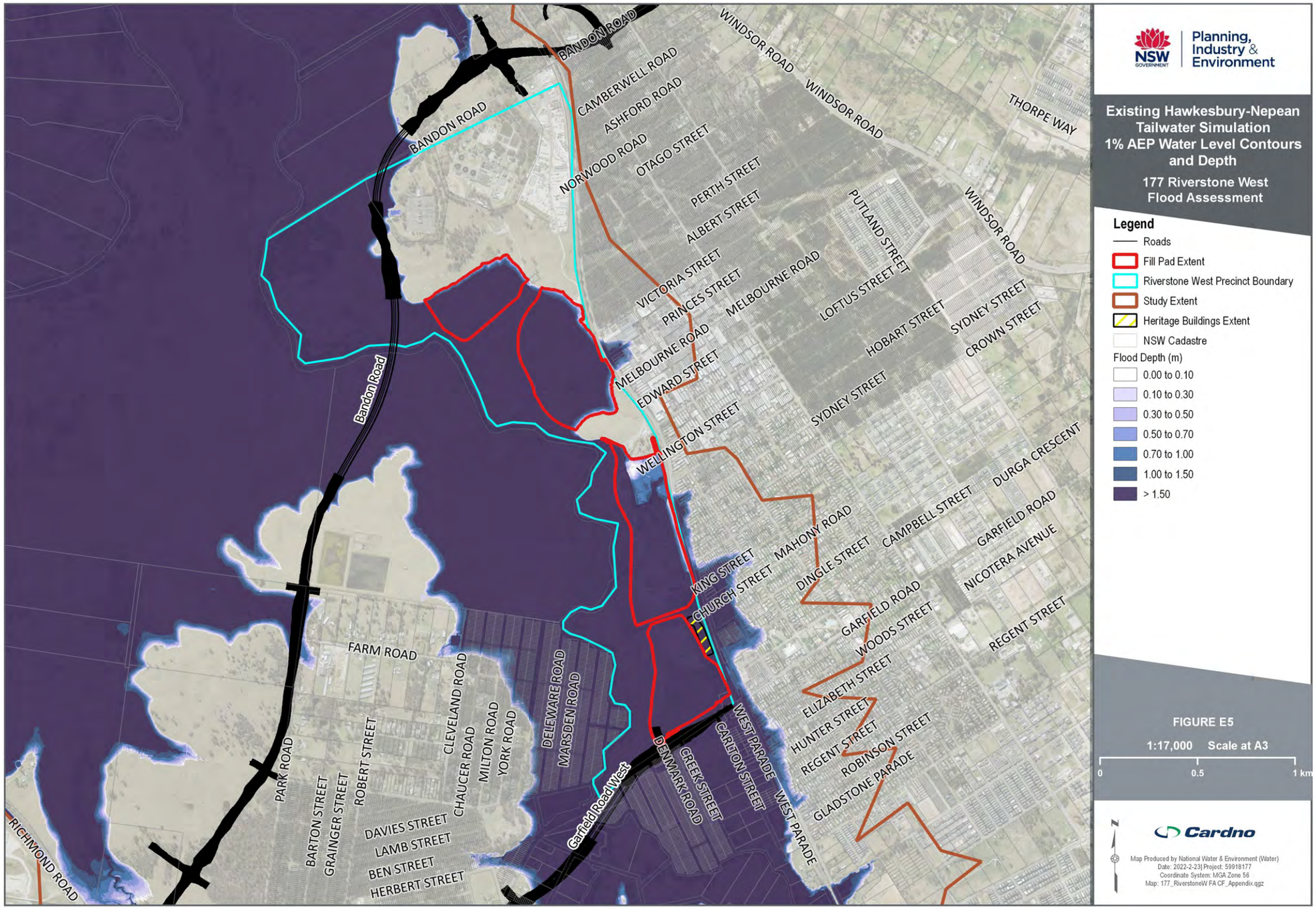
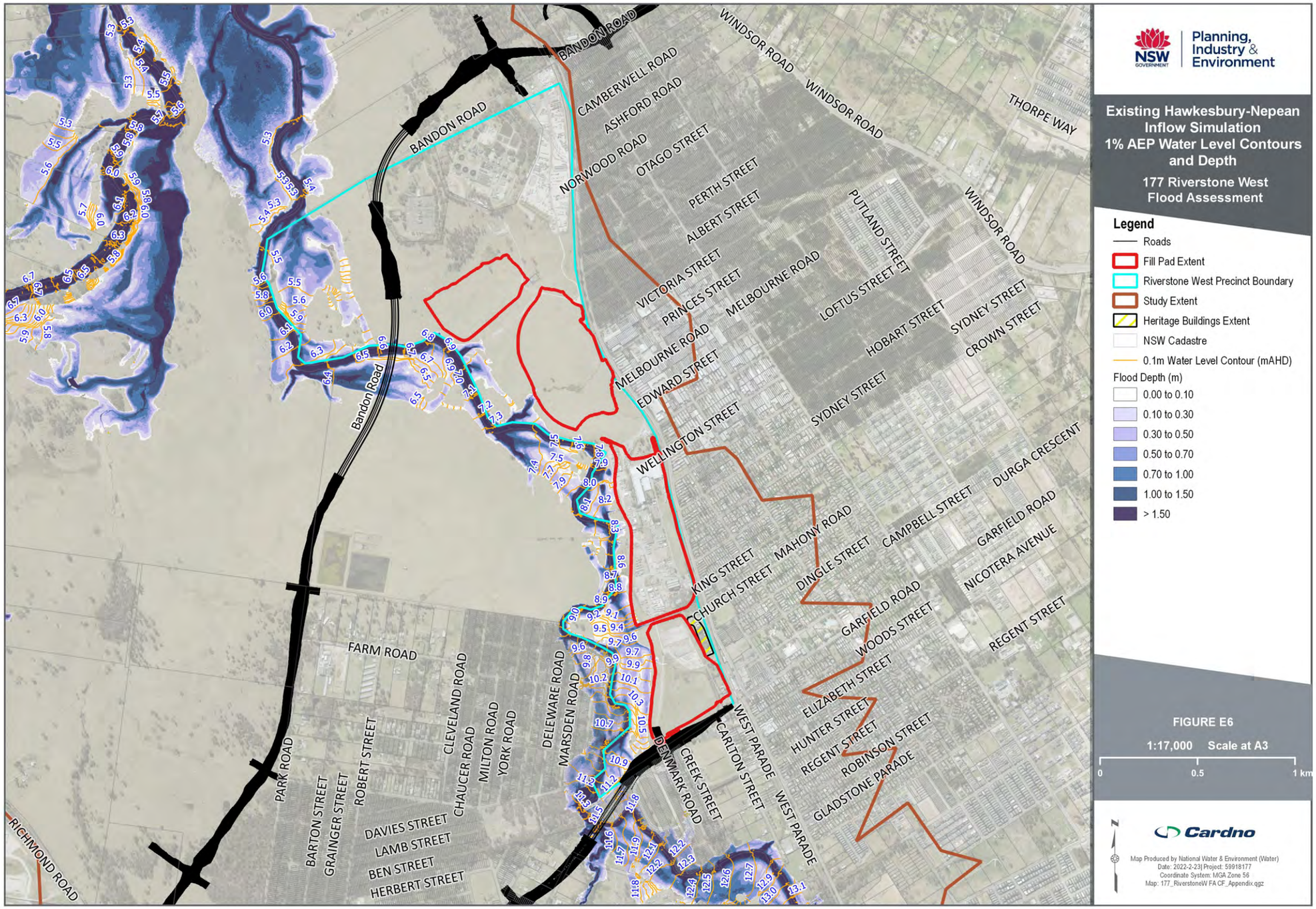
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz


BANDON ROAD
WINDSOR ROAD
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
THORPE WAY
PERTH STREET
ALBERT STREET
PUTLAND STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
CAMPBELL STREET
MAHONY ROAD
DINGLE STREET
GARFIELD ROAD
NICOTERA AVENUE
KING STREET
CHURCH STREET
WOODS STREET
REGENT STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
GREEK STREET
DENMARK ROAD
Garfield Road West
DELEWARE ROAD
MARSDEN ROAD
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
ROBERT STREET
GRAINGER STREET
BARTON STREET
PARK ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
Planning, Industry & Environment
Existing Hawkesbury-Nepean Tailwater Simulation
1% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE E5
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Existing Hawkesbury-Nepean Inflow Simulation 1% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

FIGURE E6

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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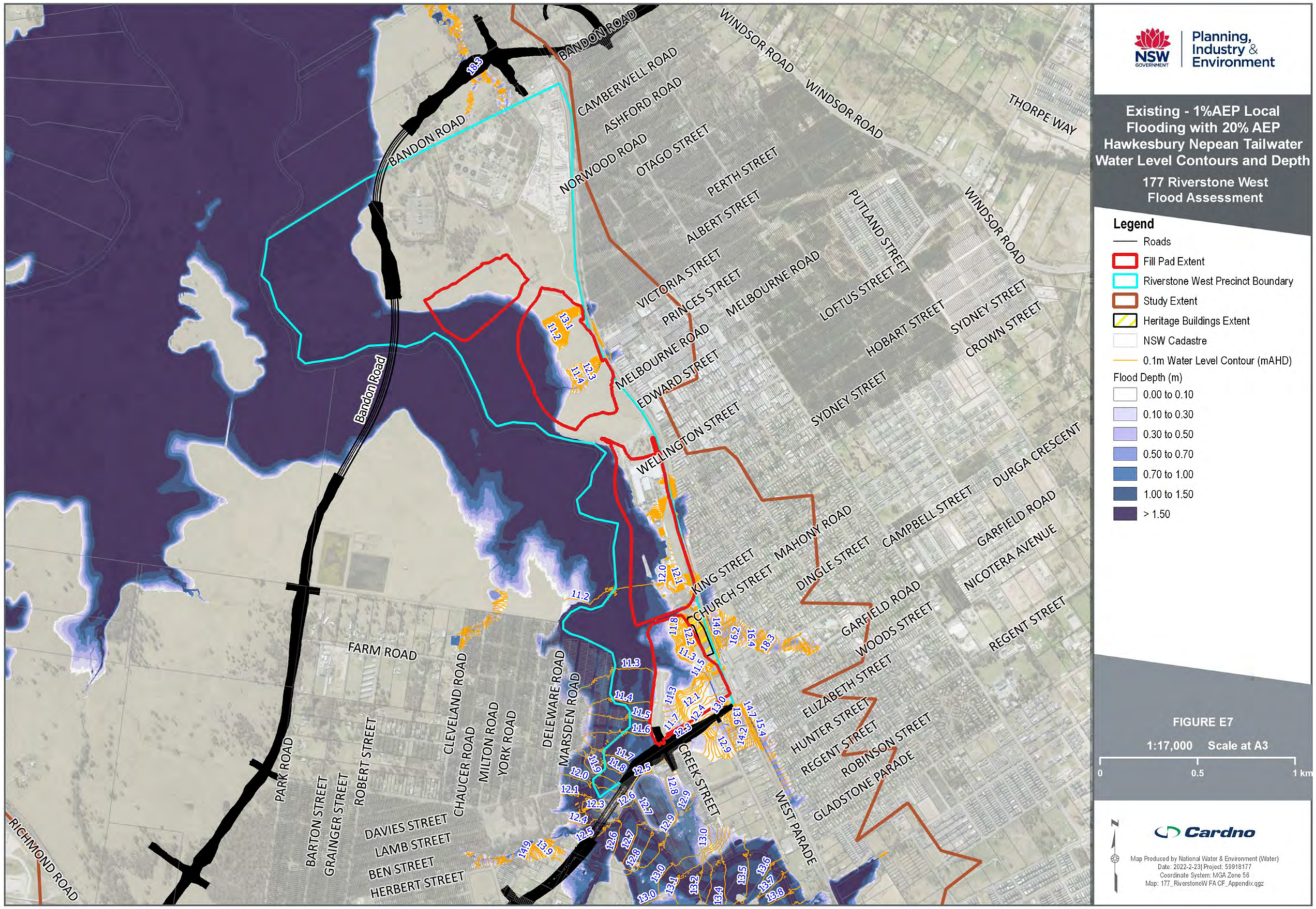
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Existing - 1%AEP Local Flooding with 20% AEP Hawkesbury Nepean Tailwater Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

FIGURE E7

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz

BANDON ROAD
WINDSOR ROAD
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
THORPE WAY
PERTH STREET
ALBERT STREET
PUTLAND STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
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CAMPBELL STREET
GARFIELD ROAD
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CHURCH STREET
MAHONY ROAD
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REGENT STREET
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HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
GREEK STREET
DENMARK ROAD
Garfield Road West
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
PARK ROAD
ROBERT STREET
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DAVIES STREET
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BEN STREET
HERBERT STREET
RICHMOND ROAD
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177 Riverstone West Flood Assessment
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Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE E8
1:17,000 Scale at A3
0
0.5
1 km
Cardno
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Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz

Planning, Industry & Environment

Interim Less Existing- Local Flow Simulation
20% AEP Water Level Difference Plot

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

FIGURE I1

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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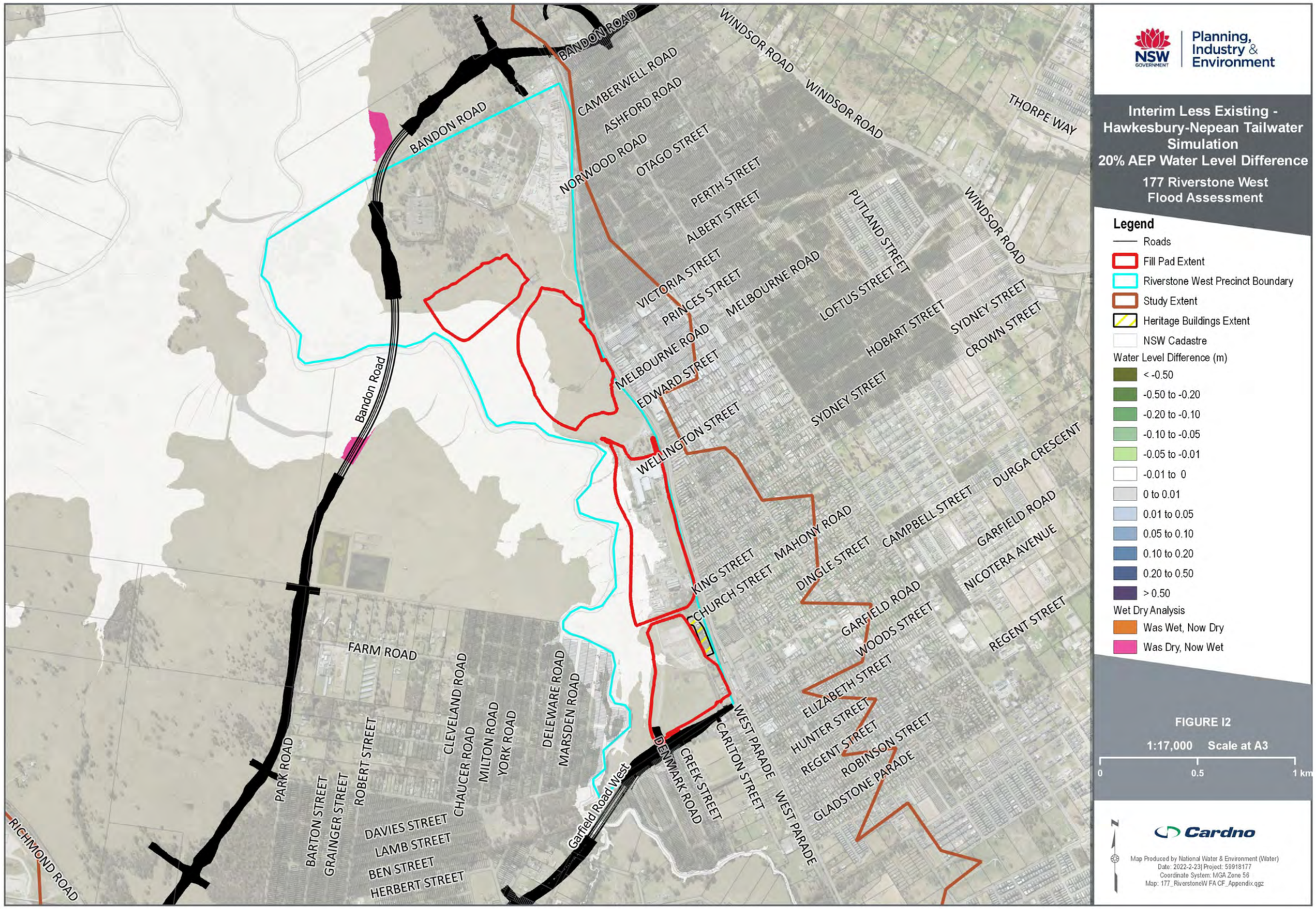
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Interim Less Existing - Hawkesbury-Nepean Tailwater Simulation
20% AEP Water Level Difference

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

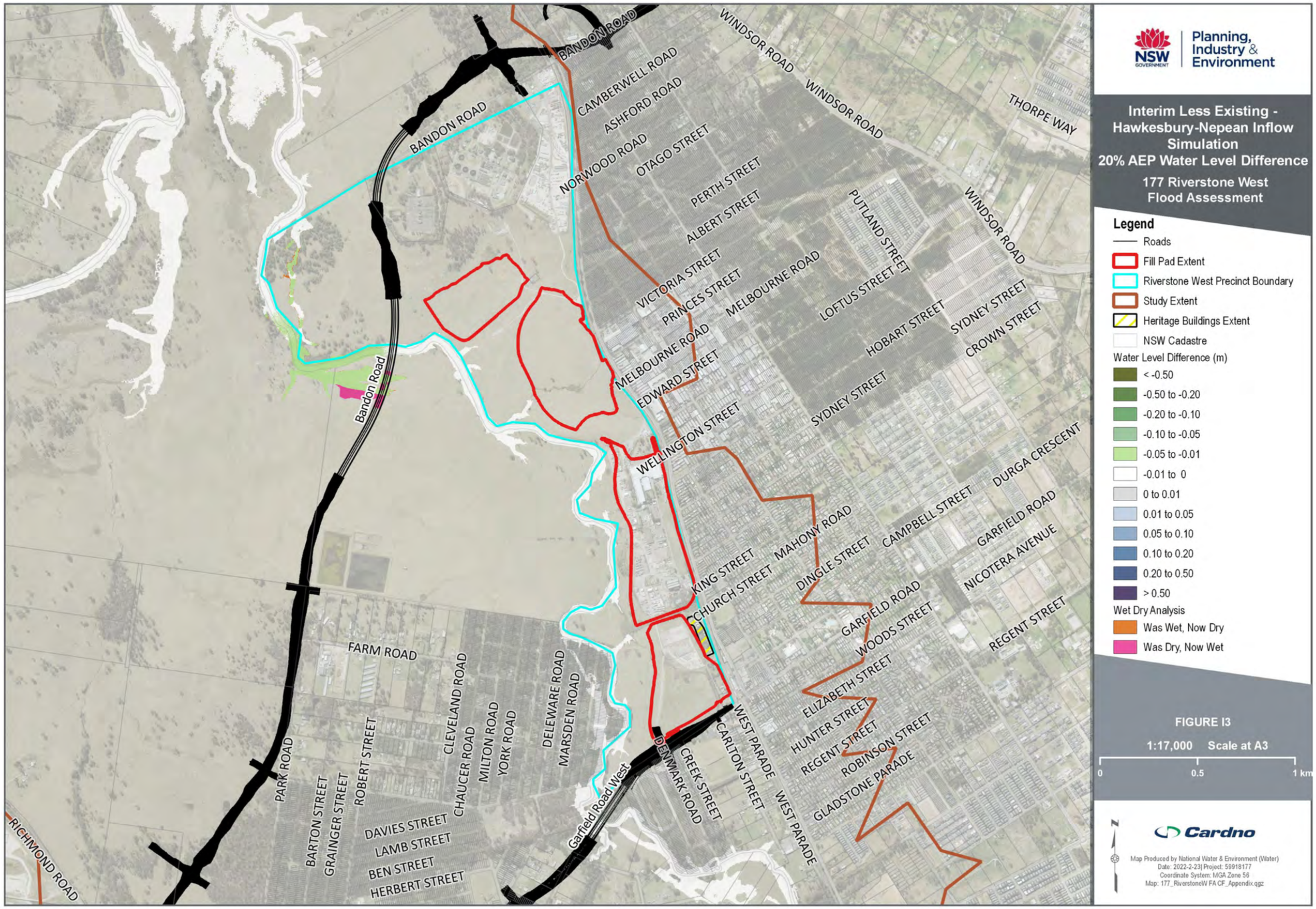
FIGURE I2

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz


BANDON ROAD
WINDSOR ROAD
THORPE WAY
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
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SYDNEY STREET
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CHURCH STREET
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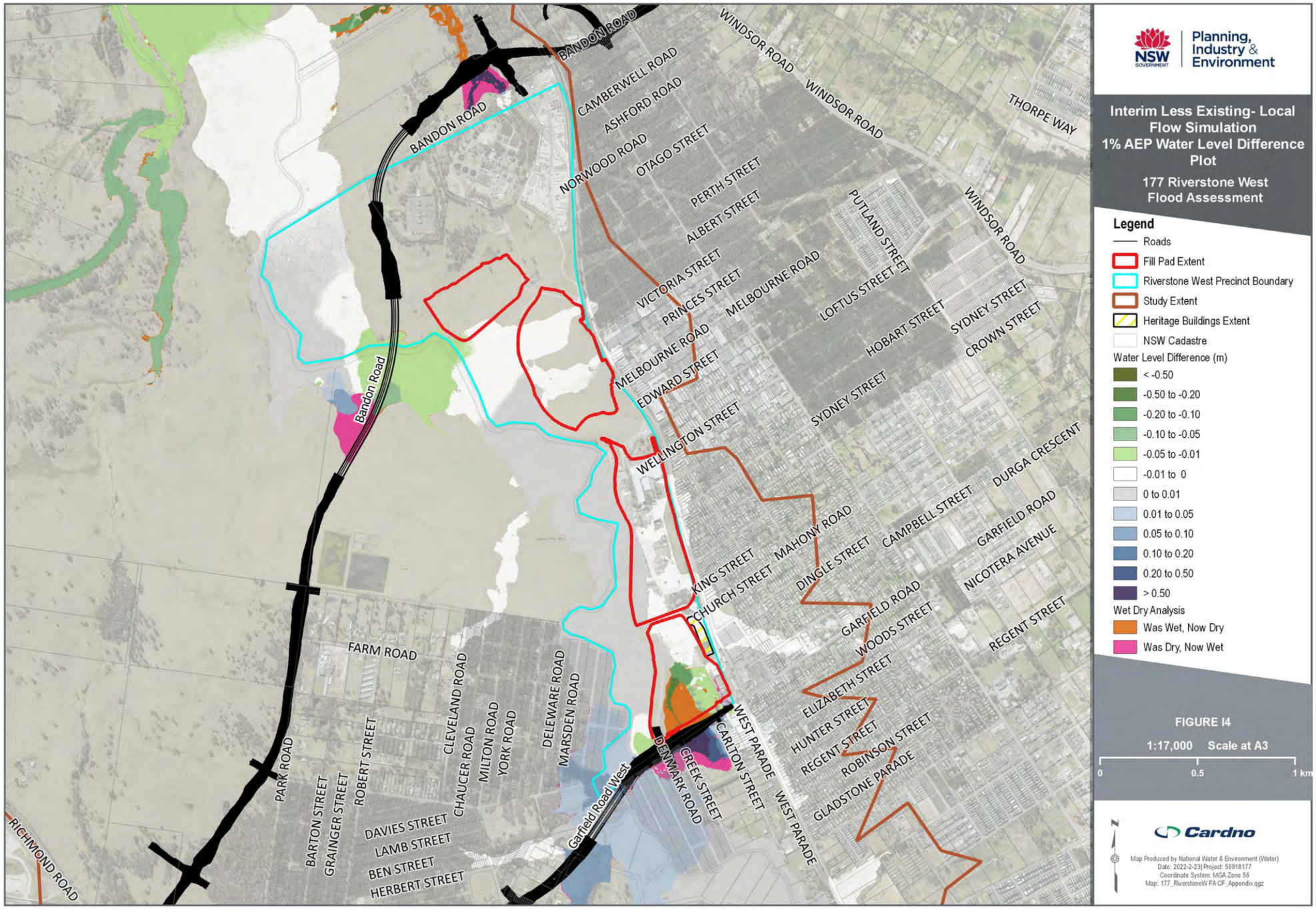
CARLTON STREET
CREEK STREET
DENMARK ROAD
Garfield Road West
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
Planning, Industry & Environment
Interim Less Existing - Hawkesbury-Nepean Inflow Simulation
20% AEP Water Level Difference
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE I3
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Interim Less Existing- Local Flow Simulation
1% AEP Water Level Difference Plot

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

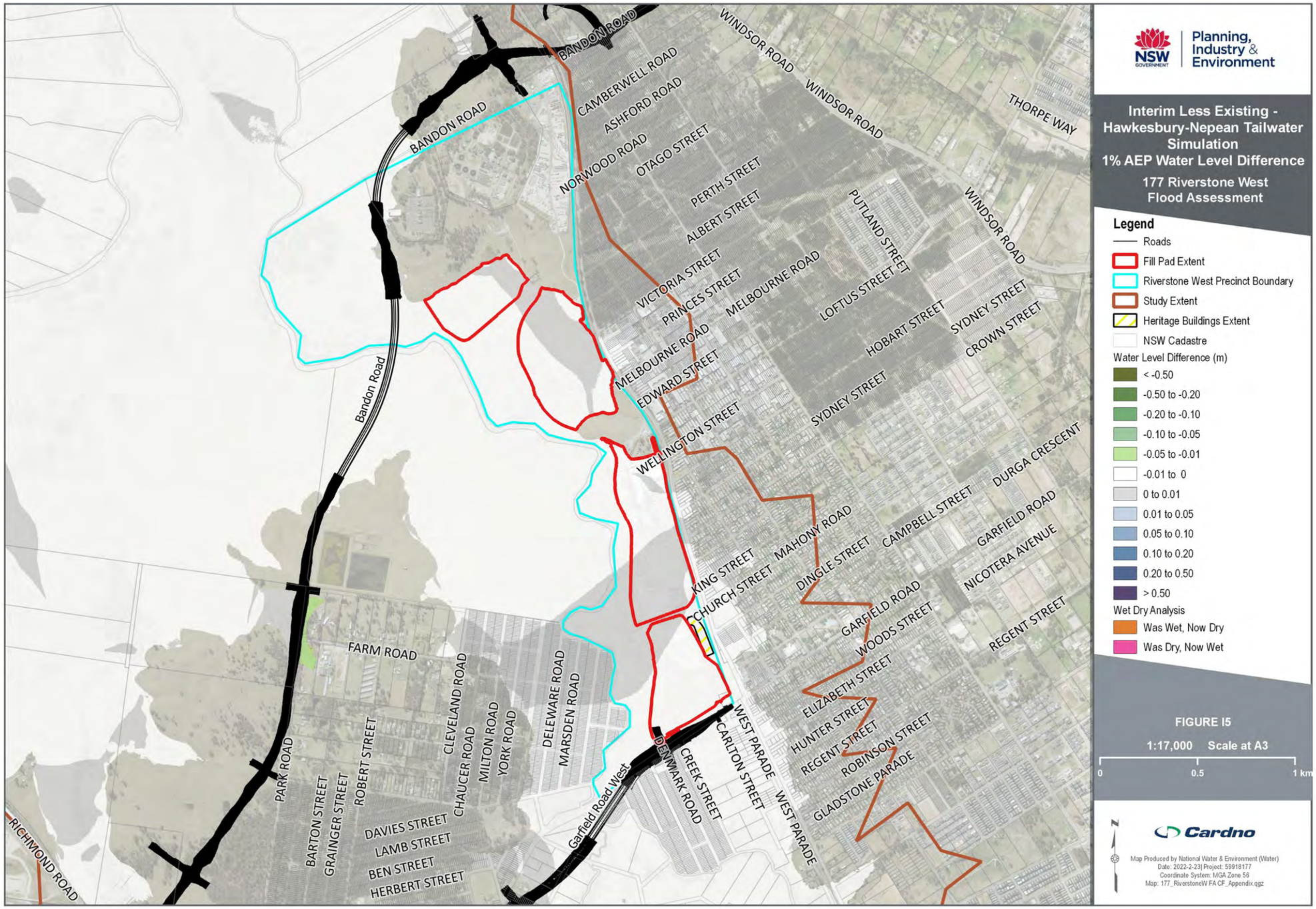
FIGURE I4

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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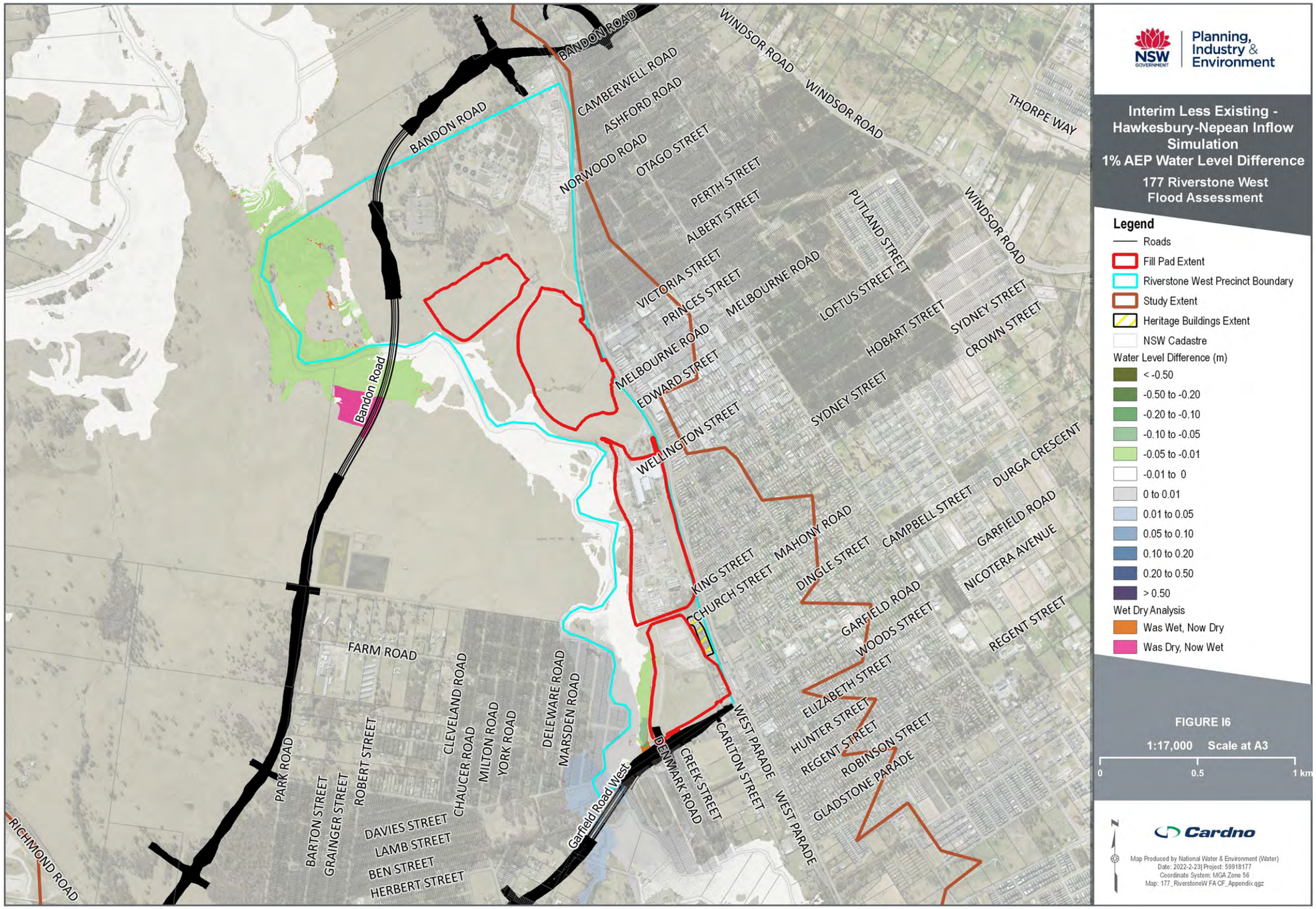
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
PUTLAND STREET
LOFTUS STREET
THORPE WAY
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
MAHONY ROAD
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
KING STREET
CHURCH STREET
DINGLE STREET
WOODS STREET
REGENT STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Garfield Road West
DENMARK ROAD
CREEK STREET
CARLTON STREET
WEST PARADE
Planning, Industry & Environment
Interim Less Existing - Hawkesbury-Nepean Tailwater Simulation
1% AEP Water Level Difference
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE I5
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz


BANDON ROAD
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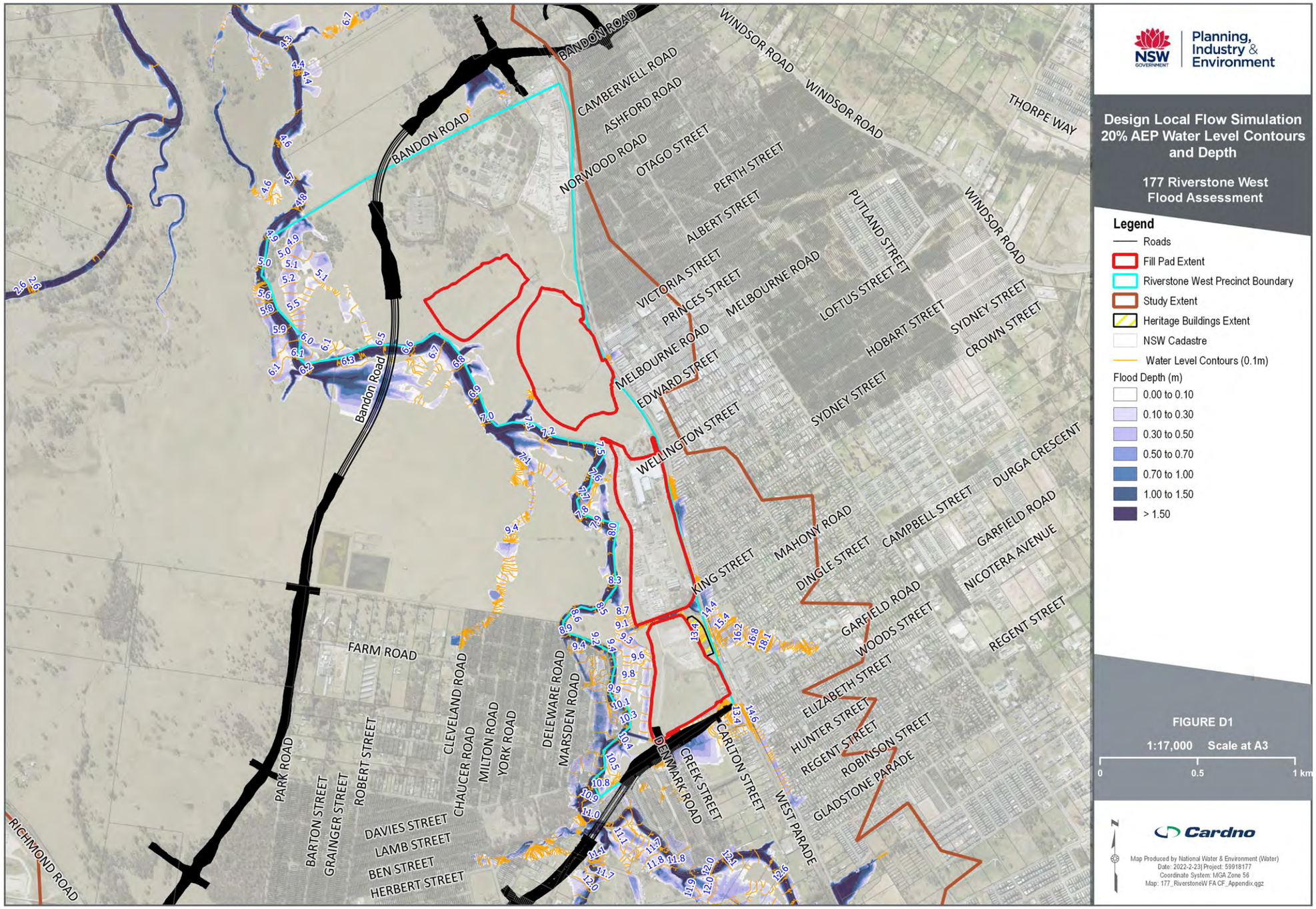
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
EDWARD STREET
WELLINGTON STREET
WINDSOR ROAD
THORPE WAY
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
DURGA CRESCENT
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
DINGLE STREET
KING STREET
CHURCH STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
CREEK STREET
DENMARK ROAD
Garfield Road West
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
NSW GOVERNMENT
Planning, Industry & Environment
Interim Less Existing - Hawkesbury-Nepean Inflow Simulation
1% AEP Water Level Difference
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE I6
1:17,000 Scale at A3
0
0.5
1 km
N
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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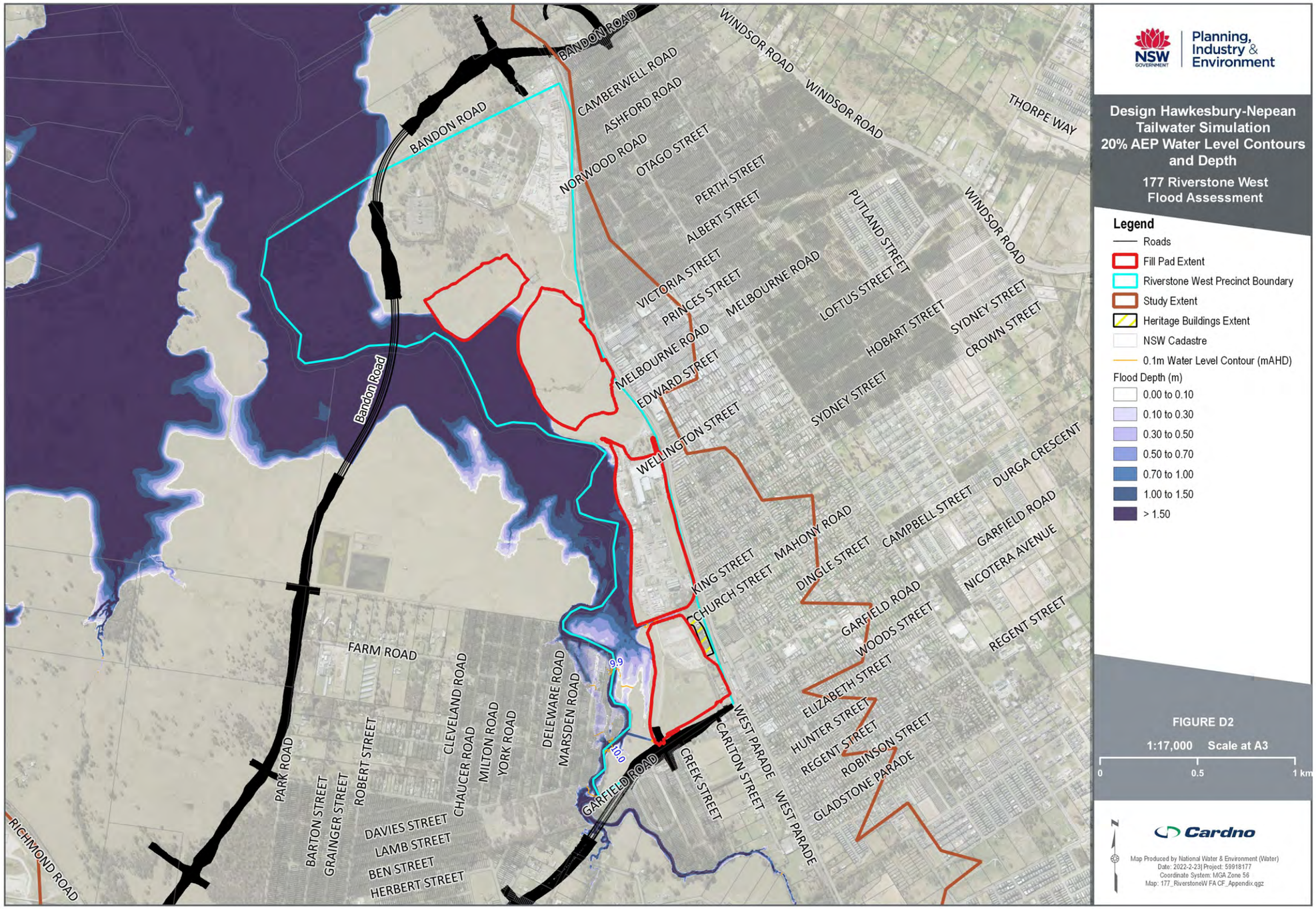
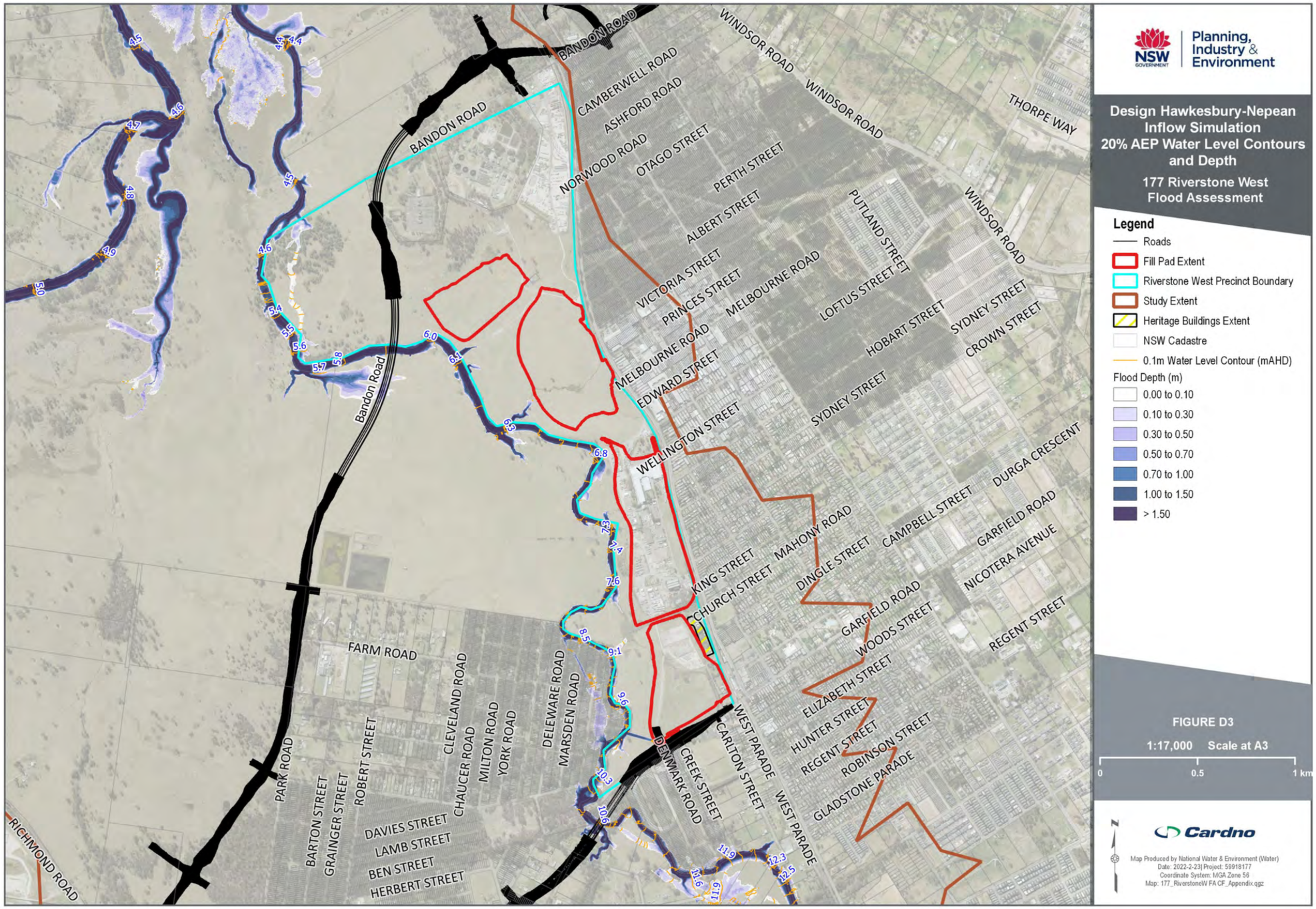
WINDSOR ROAD
THORPE WAY
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
PUTLAND STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
KING STREET
WOODS STREET
REGENT STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
CARLTON STREET
WEST PARADE
CREEK STREET
DENMARK ROAD
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
PARK ROAD
ROBERT STREET
BARTON STREET
GRAINGER STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
Planning, Industry & Environment
Design Local Flow Simulation 20% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Contours (0.1m)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D1
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz


BANDON ROAD
WINDSOR ROAD
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
EDWARD STREET
WELLINGTON STREET
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
THORPE WAY
KING STREET
CHURCH STREET
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
DURGA CRESCENT
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
9.9
10.0
GARFIELD ROAD
CREEK STREET
CARLTON STREET
WEST PARADE
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
NSW GOVERNMENT
Planning, Industry & Environment
Design Hawkesbury-Nepean Tailwater Simulation
20% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D2
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Design Hawkesbury-Nepean Inflow Simulation
20% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

FIGURE D3

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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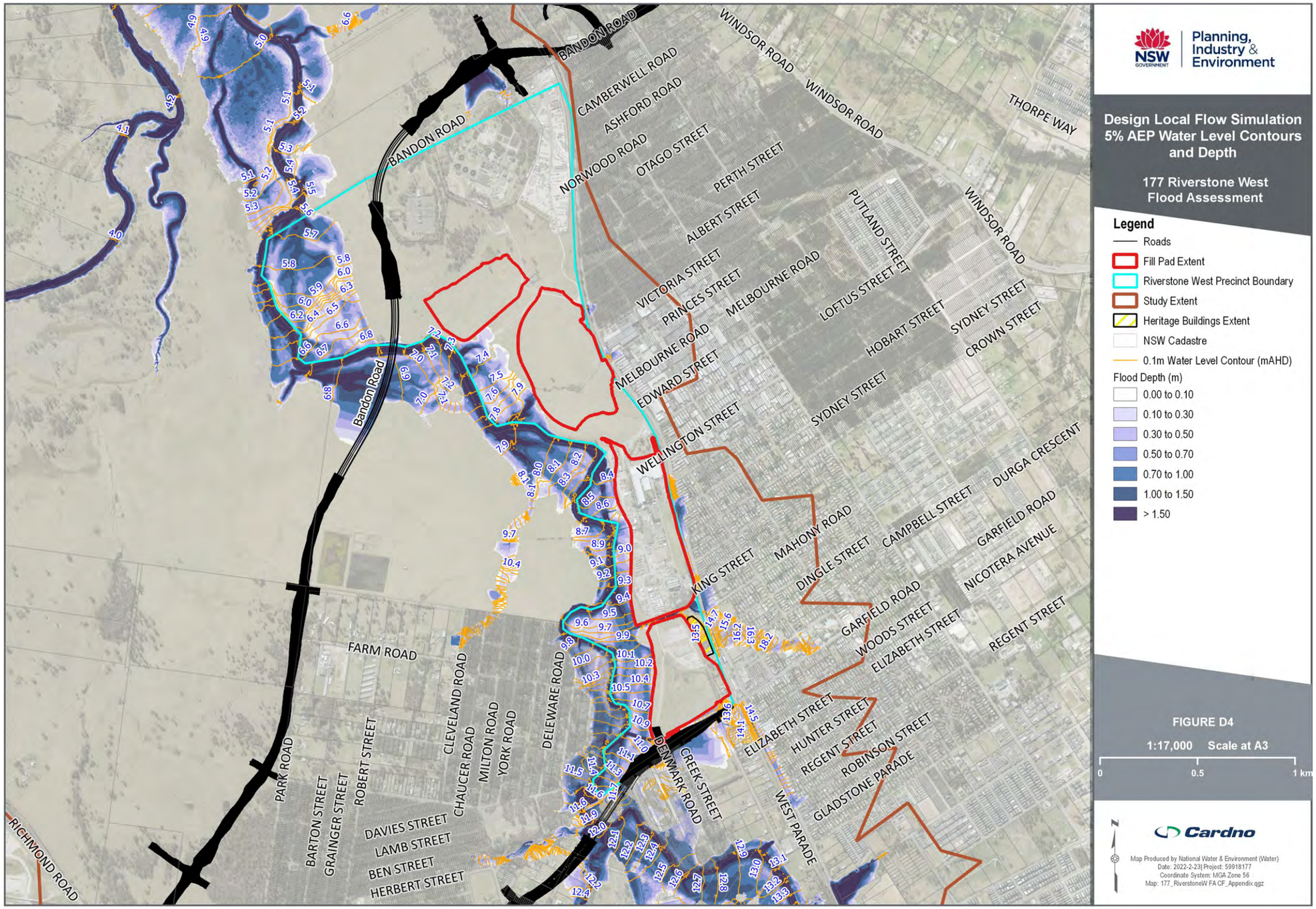
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Design Local Flow Simulation 5% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

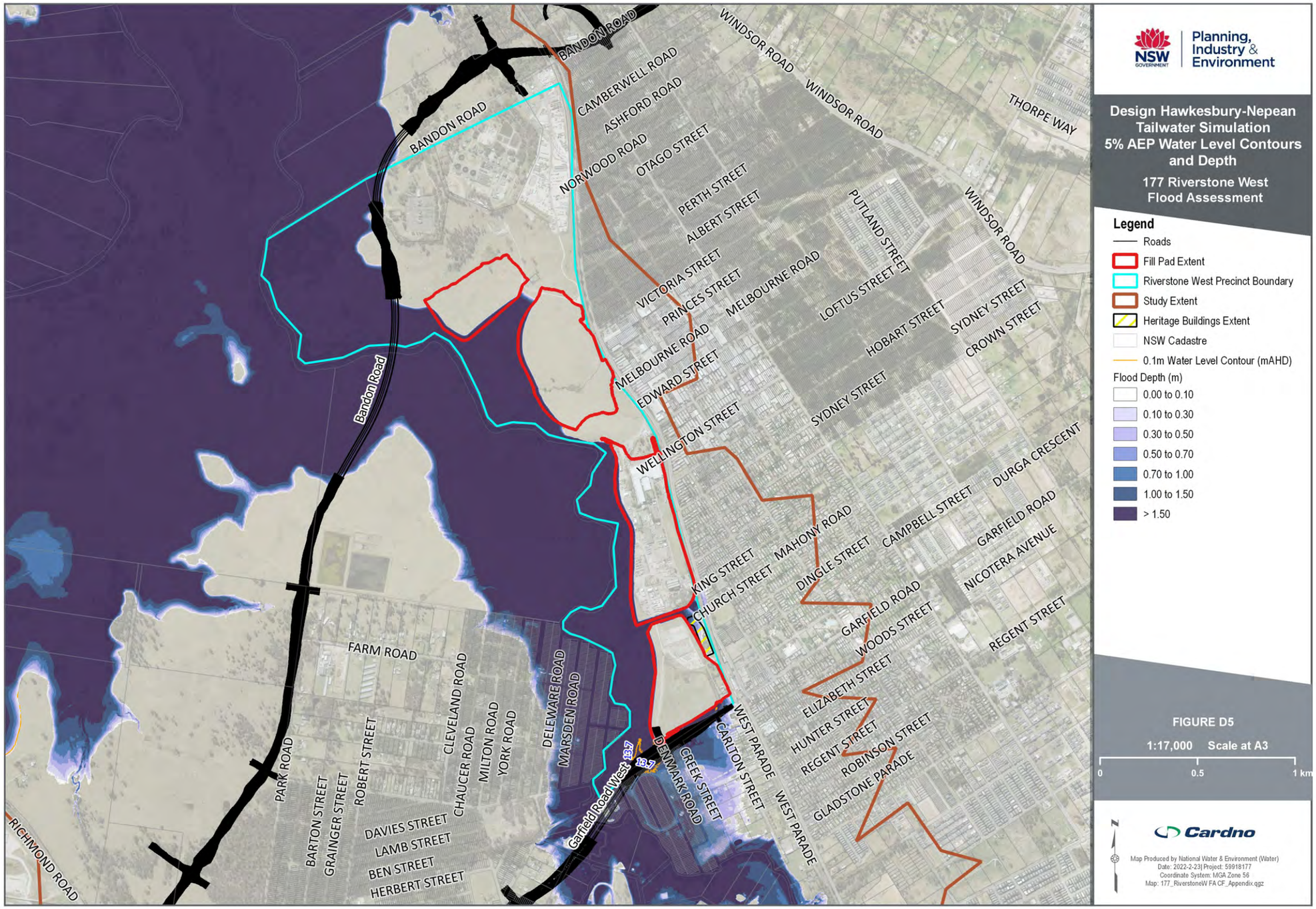
FIGURE D4

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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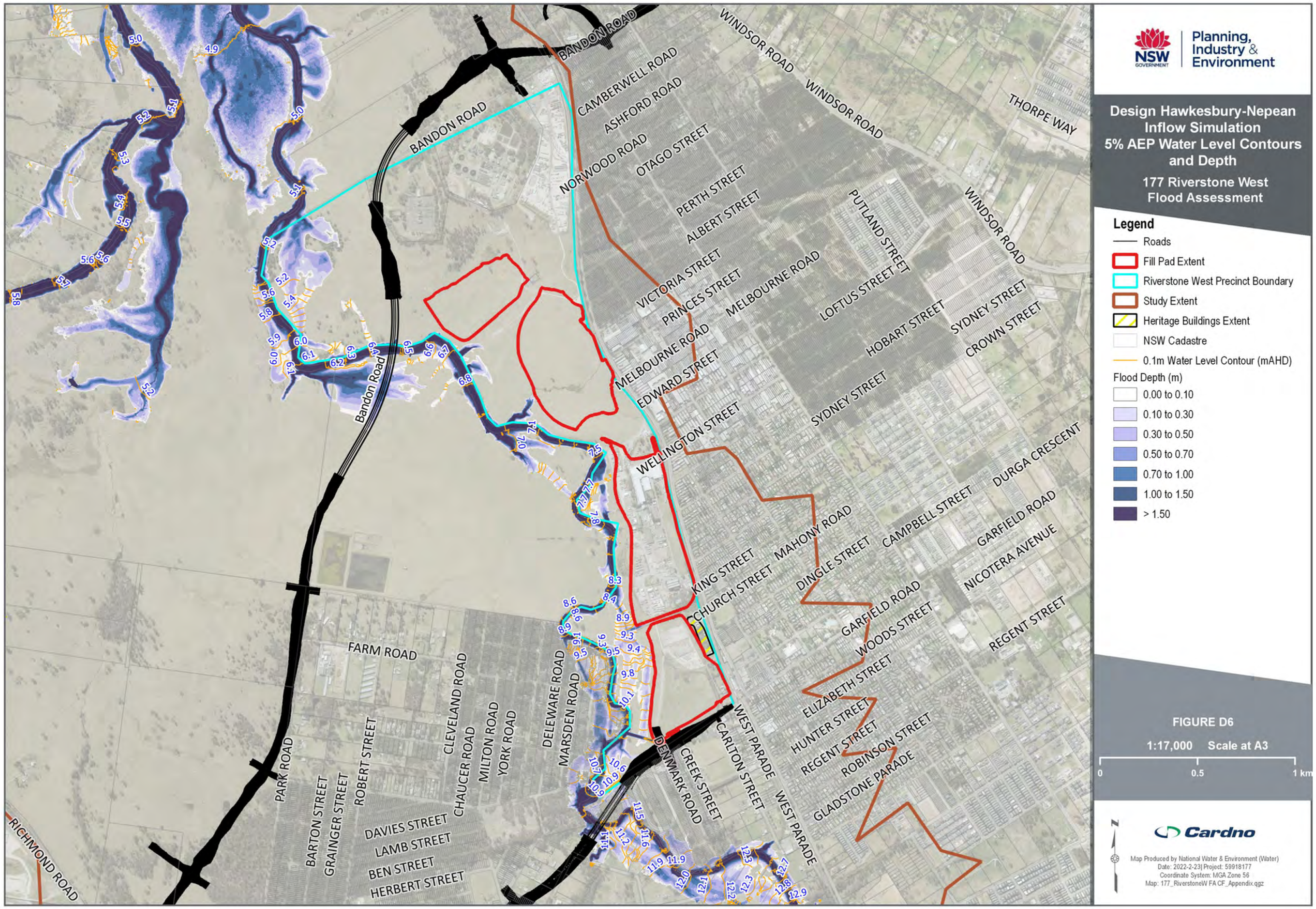
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
THORPE WAY
PERTH STREET
ALBERT STREET
PUTLAND STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
MAHONY ROAD
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
KING STREET
CHURCH STREET
DINGLE STREET
WOODS STREET
REGENT STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
GREEK STREET
DENMARK ROAD
Garfield Road West
19.7
13.7
FARM ROAD
DELEWARE ROAD
MARSDEN ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
Planning, Industry & Environment
Design Hawkesbury-Nepean Tailwater Simulation
5% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D5
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Design Hawkesbury-Nepean Inflow Simulation
5% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

FIGURE D6

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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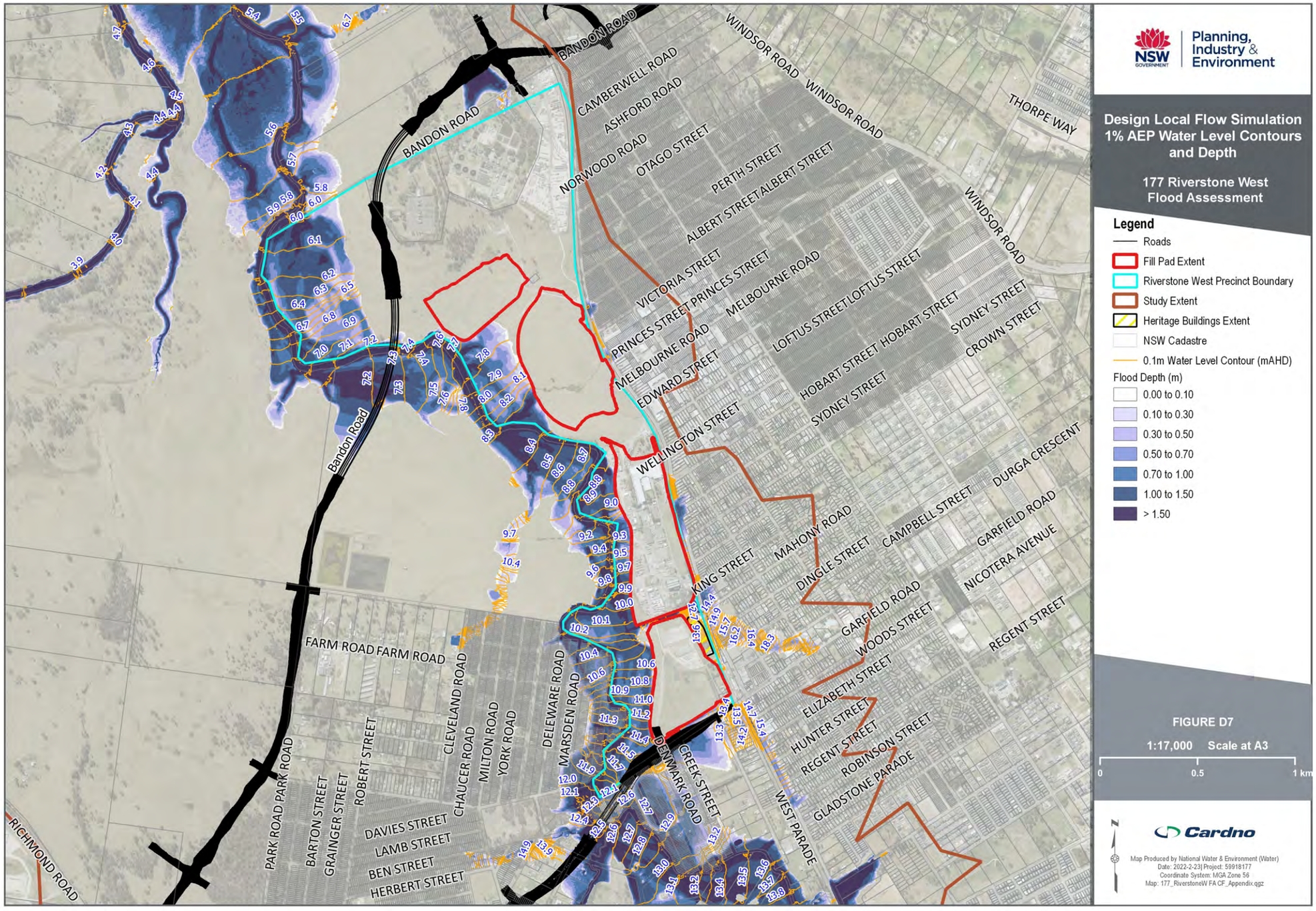
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



NSW GOVERNMENT | Planning, Industry & Environment

Design Local Flow Simulation 1% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

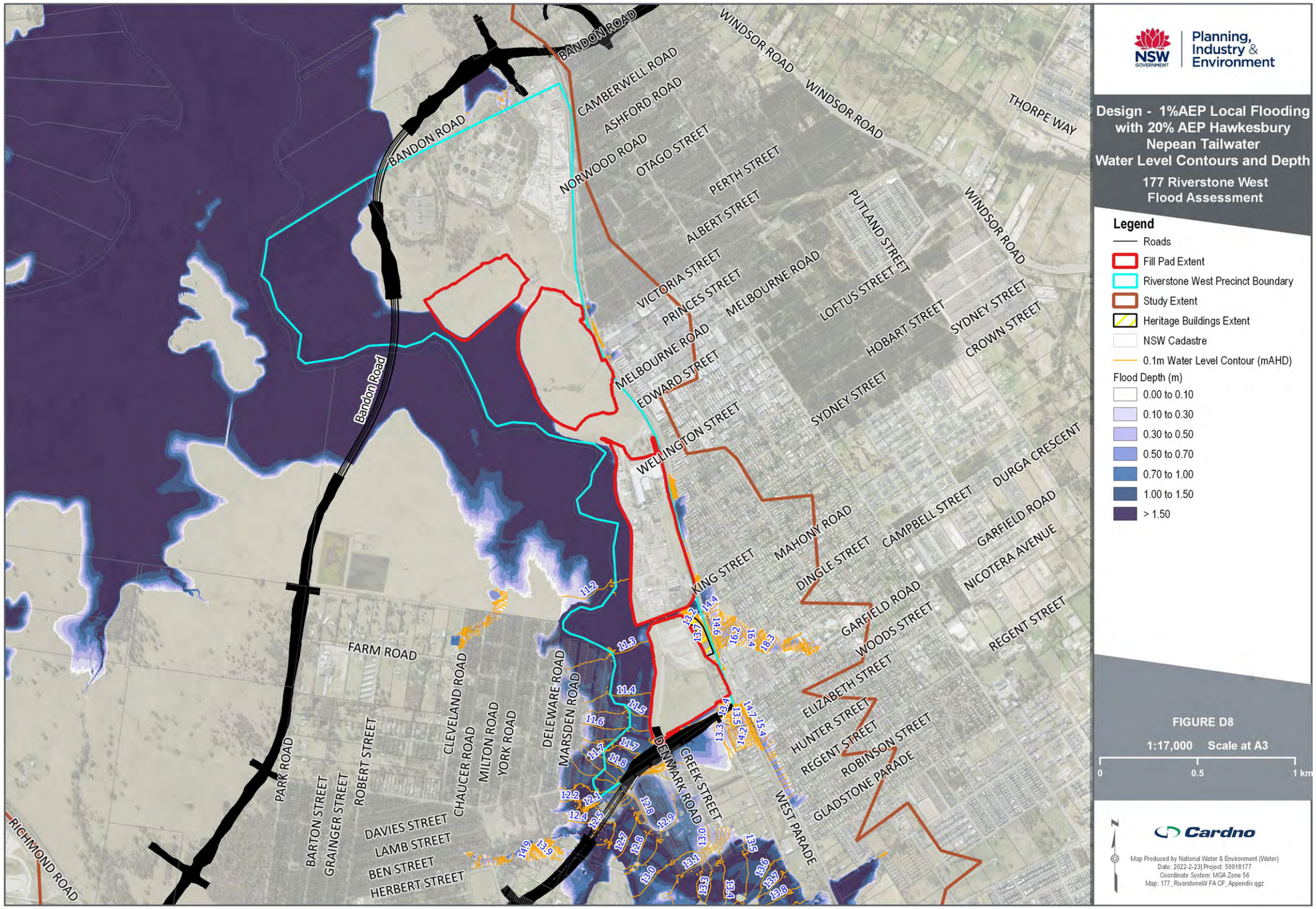
FIGURE D7

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Design - 1%AEP Local Flooding with 20% AEP Hawkesbury Nepean Tailwater Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

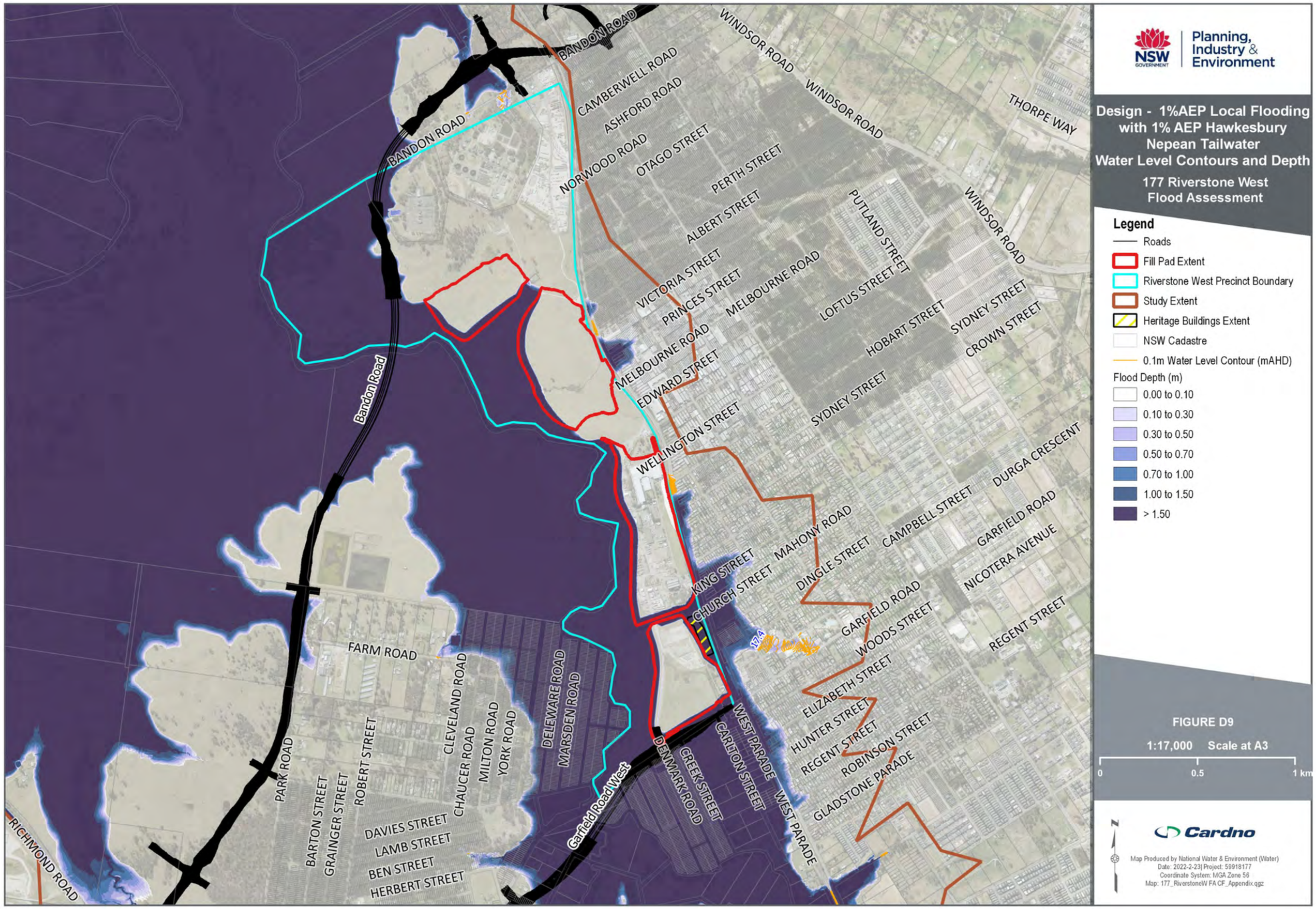
FIGURE D8

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



NSW GOVERNMENT | Planning, Industry & Environment

Design - 1%AEP Local Flooding with 1% AEP Hawkesbury Nepean Tailwater Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

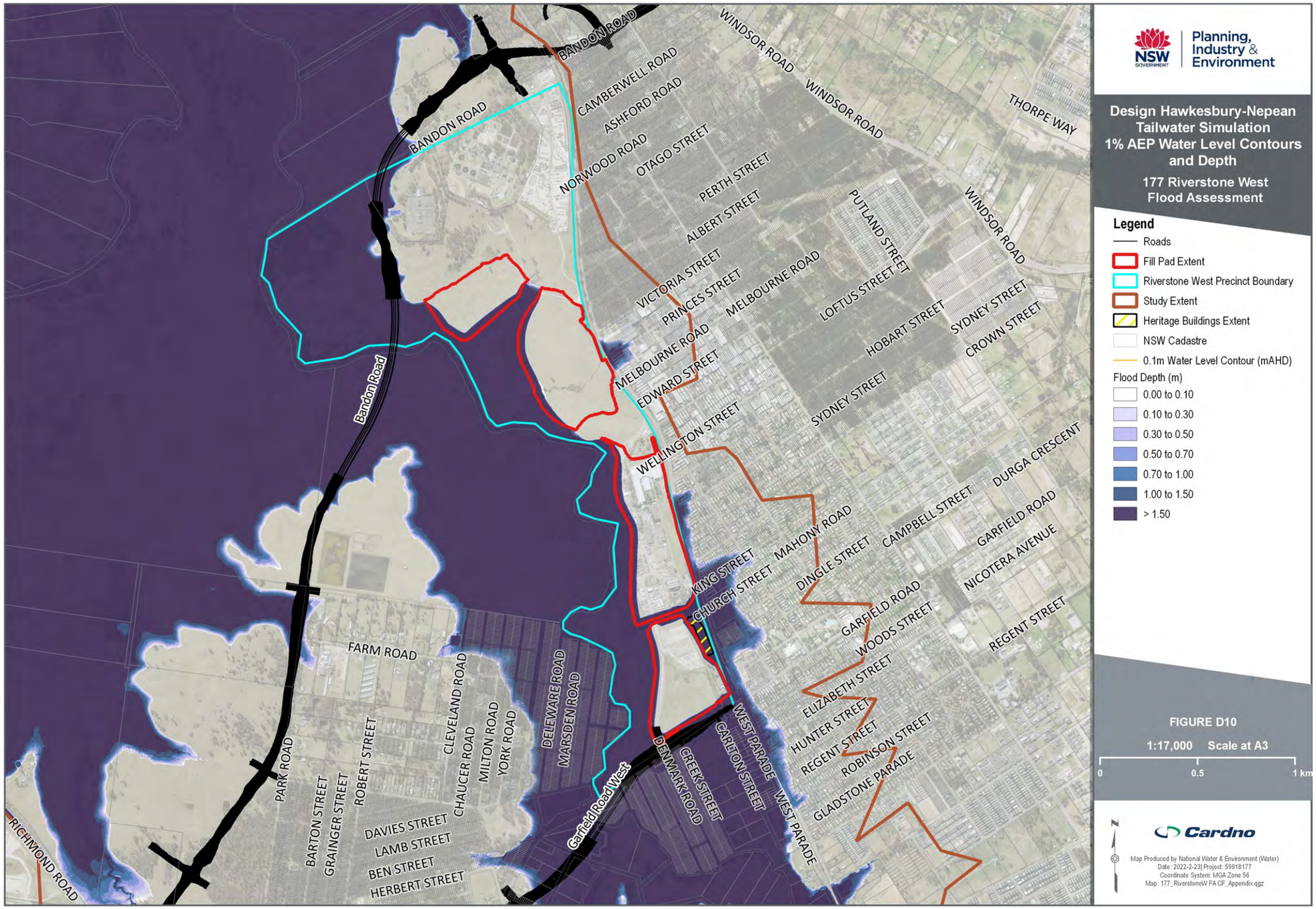
FIGURE D9

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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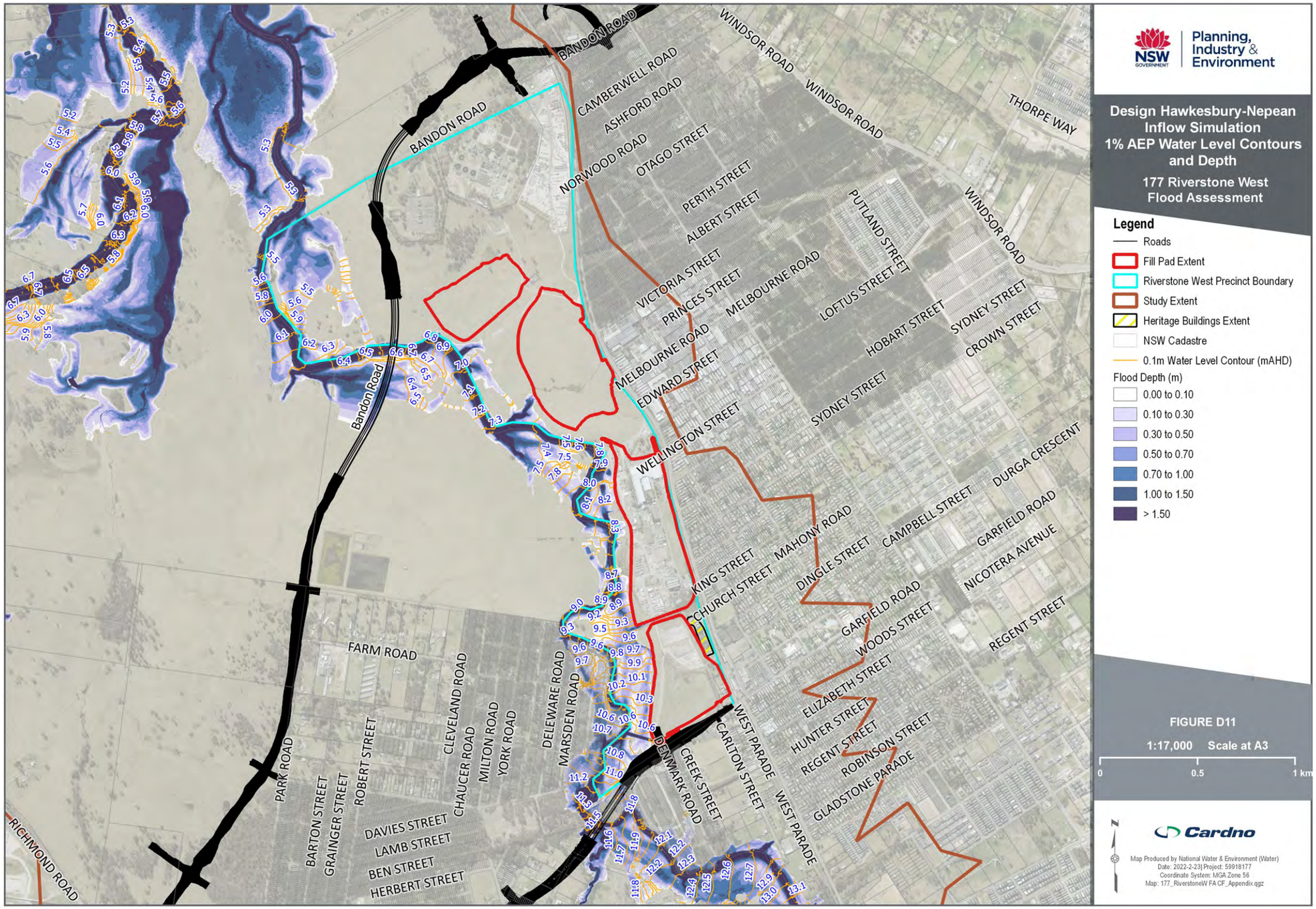
WINDSOR ROAD
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
EDWARD STREET
WELLINGTON STREET
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
THORPE WAY
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Garfield Road West
DENMARK ROAD
GREEK STREET
CARLTON STREET
WEST PARADE
KING STREET
CHURCH STREET
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
NSW GOVERNMENT
Planning, Industry & Environment
Design Hawkesbury-Nepean Tailwater Simulation
1% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D10
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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THORPE WAY
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
MAHONY ROAD
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
KING STREET
CHURCH STREET
DINGLE STREET
WOODS STREET
REGENT STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
CREEK STREET
DENMARK ROAD
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
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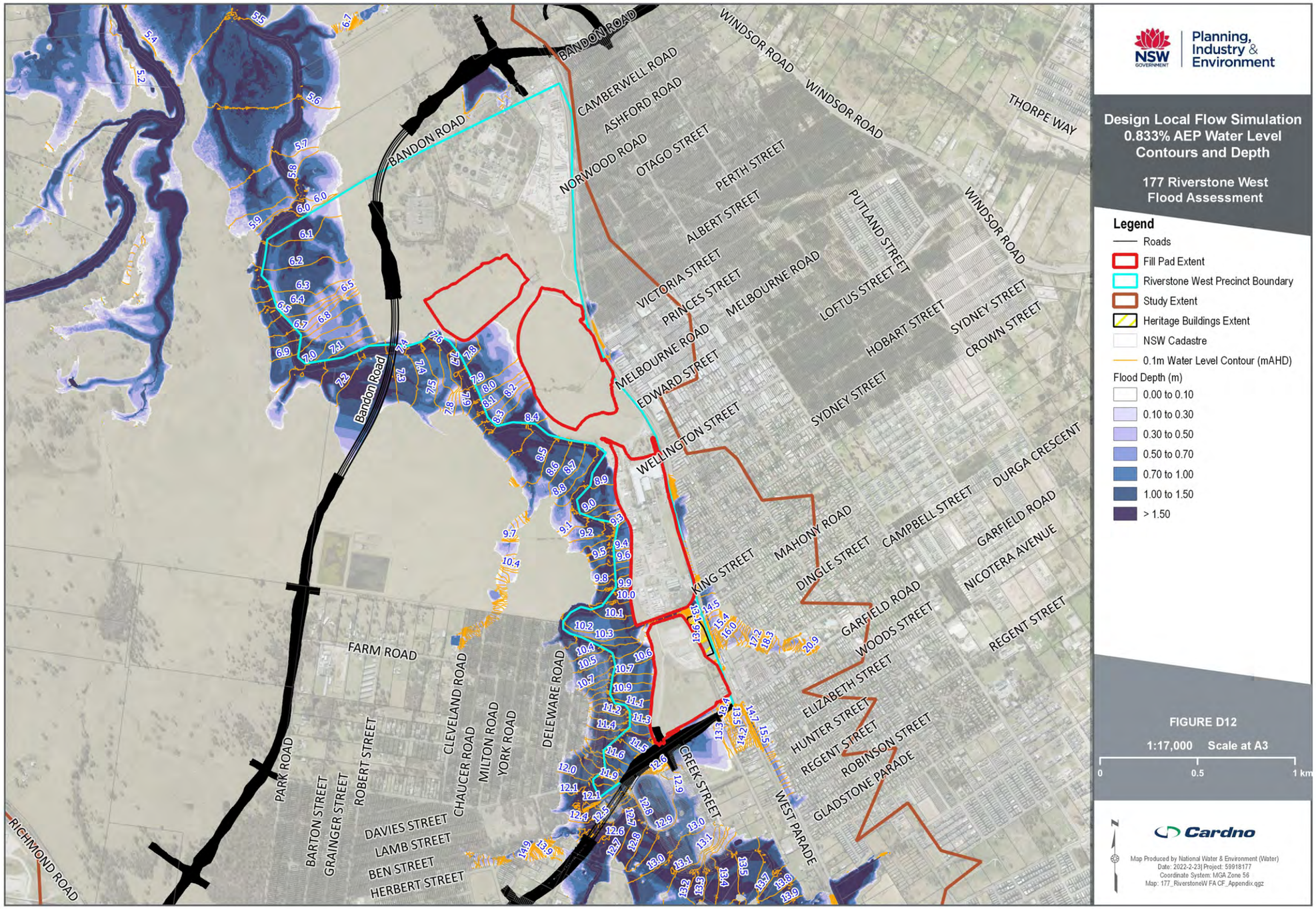
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D11
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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THORPE WAY
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
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PERTH STREET
ALBERT STREET
PUTLAND STREET
VICTORIA STREET
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LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
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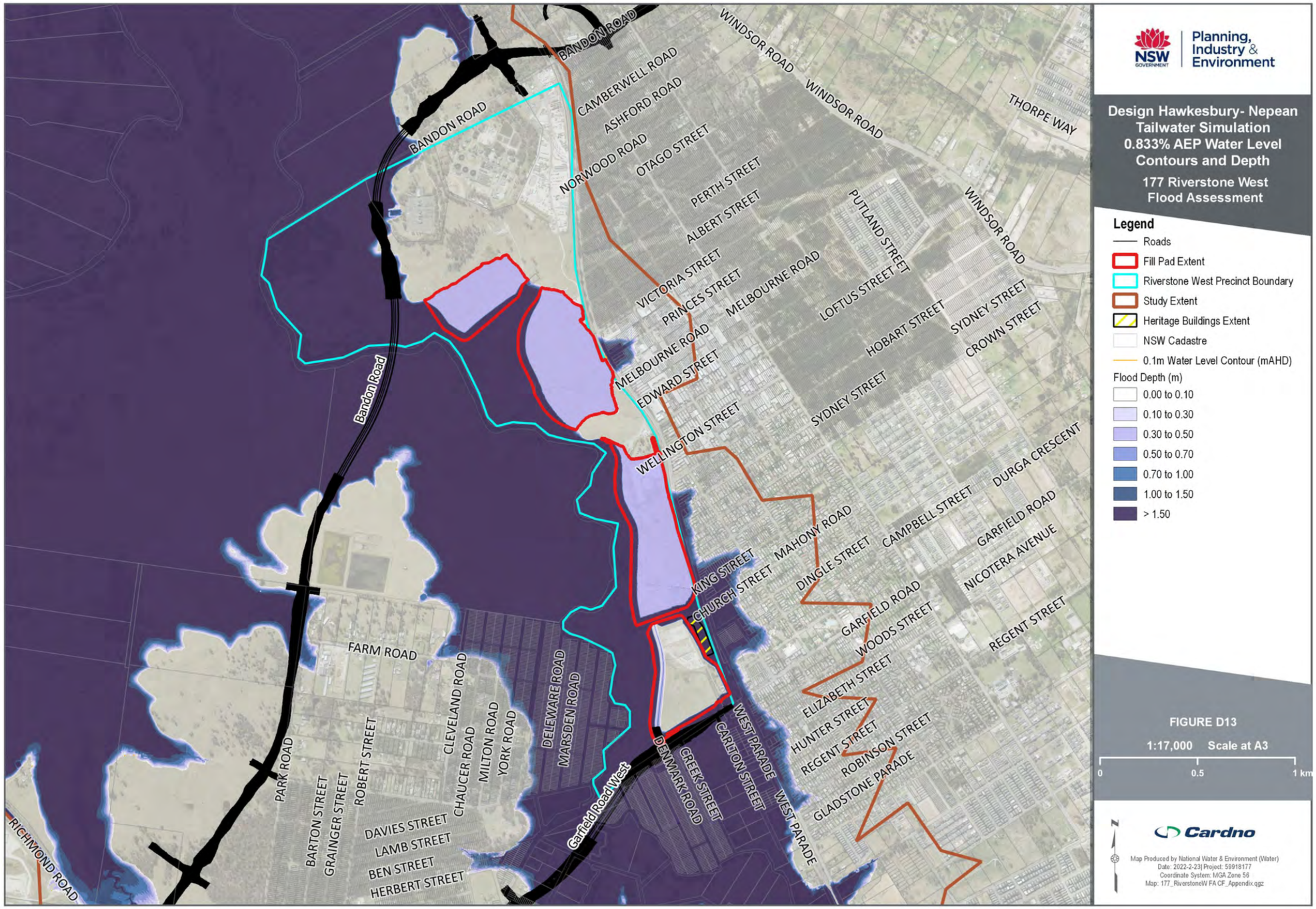
GARFIELD ROAD
NICOTERA AVENUE
DINGLE STREET
KING STREET
WOODS STREET
REGENT STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
GREEK STREET
WEST PARADE
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
Planning, Industry & Environment
Design Local Flow Simulation 0.833% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D12
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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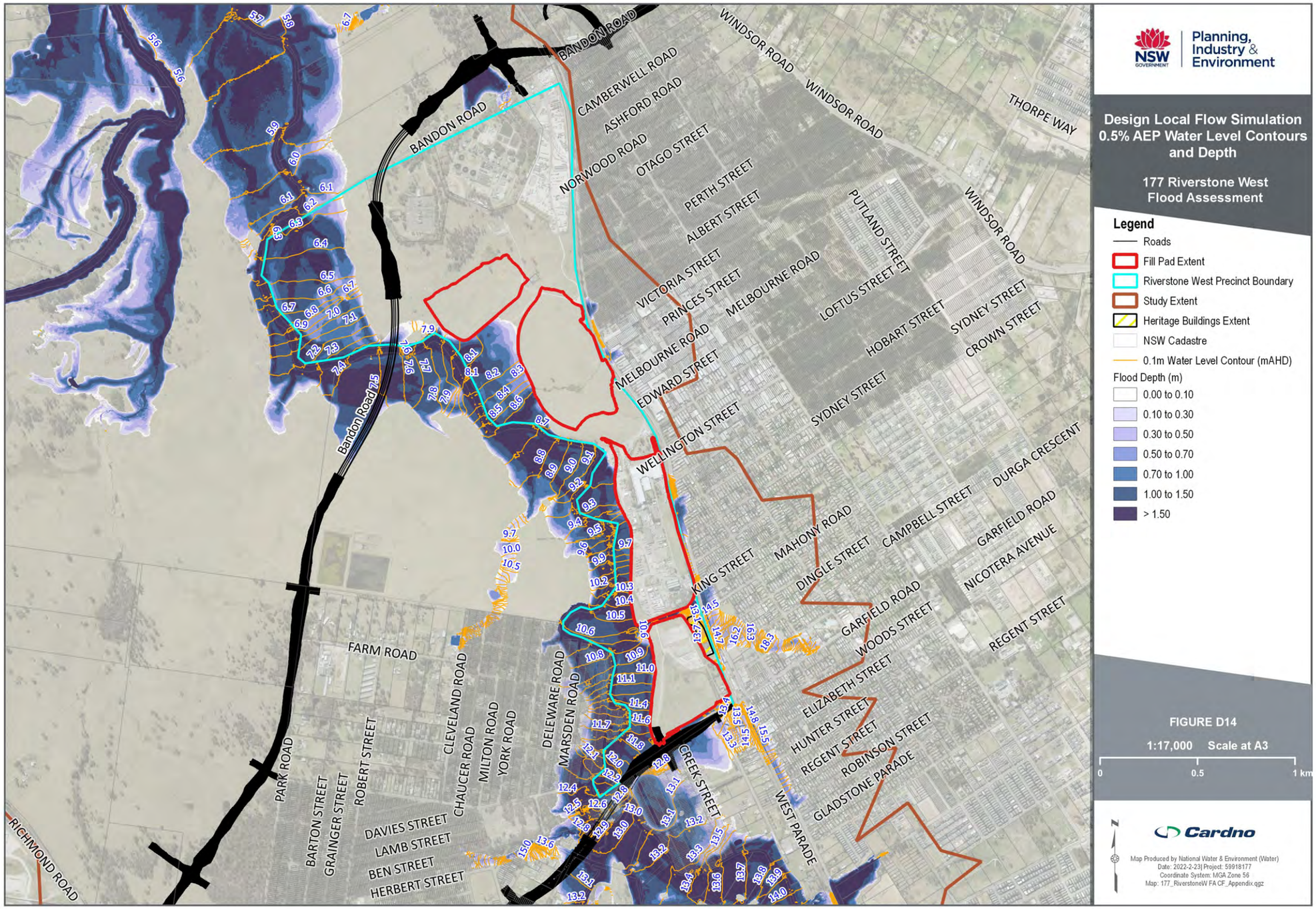
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Garfield Road West
DENMARK ROAD
GREEK STREET
CARLTON STREET
WEST PARADE
KING STREET
CHURCH STREET
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
Planning, Industry & Environment
Design Hawkesbury- Nepean Tailwater Simulation 0.833% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D13
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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ASHFORD ROAD
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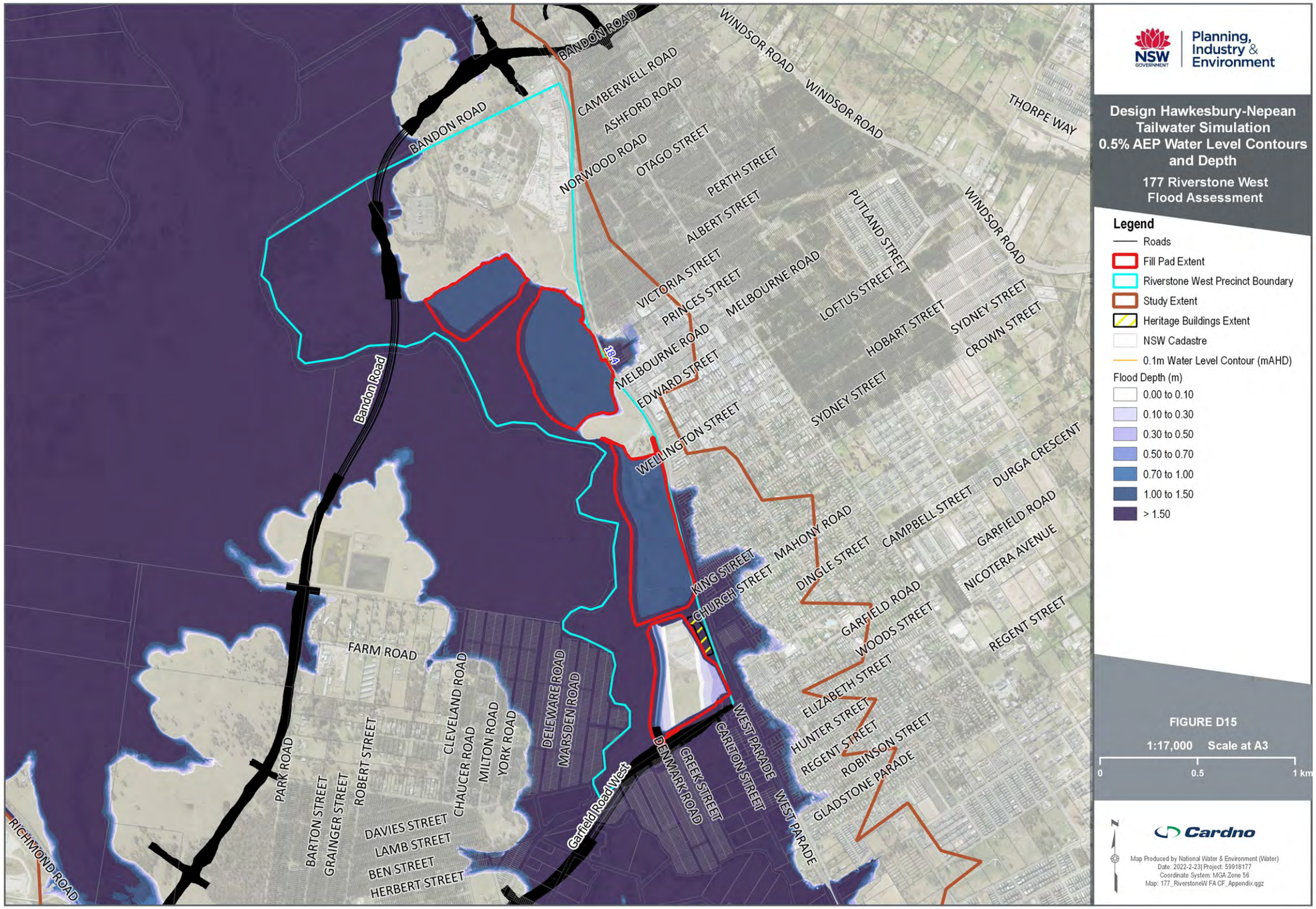
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
EDWARD STREET
WELLINGTON STREET
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
KING STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CREEK STREET
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
PARK ROAD
ROBERT STREET
BARTON STREET
GRAINGER STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
Planning, Industry & Environment
Design Local Flow Simulation 0.5% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D14
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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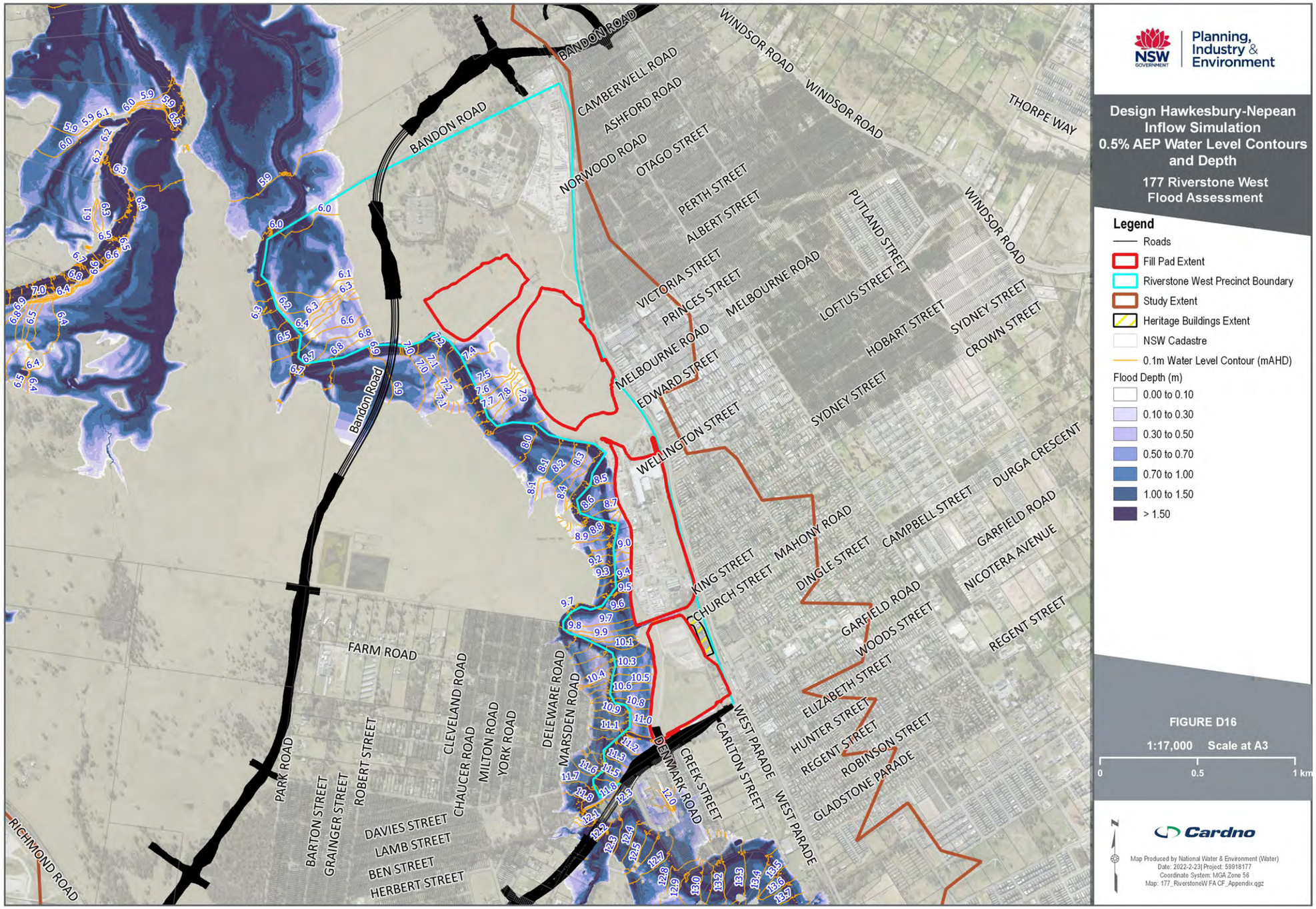
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
PUTLAND STREET
LOFTUS STREET
THORPE WAY
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
Bandon Road
B84
DURGA CRESCENT
CAMPBELL STREET
MAHONY ROAD
DINGLE STREET
GARFIELD ROAD
NICOTERA AVENUE
KING STREET
CHURCH STREET
WOODS STREET
REGENT STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
PARK ROAD
ROBERT STREET
BARTON STREET
GRAINGER STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Garfield Road West
DENMARK ROAD
GREEK STREET
CARLTON STREET
WEST PARADE
Planning, Industry & Environment
Design Hawkesbury-Nepean Tailwater Simulation
0.5% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D15
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
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PERTH STREET
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VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
EDWARD STREET
WELLINGTON STREET
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
CAMPBELL STREET
DINGLE STREET
KING STREET
CHURCH STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
CREEK STREET
DENMARK ROAD
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Planning, Industry & Environment
Design Hawkesbury-Nepean Inflow Simulation
0.5% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D16
1:17,000 Scale at A3
0
0.5
1 km
Cardno
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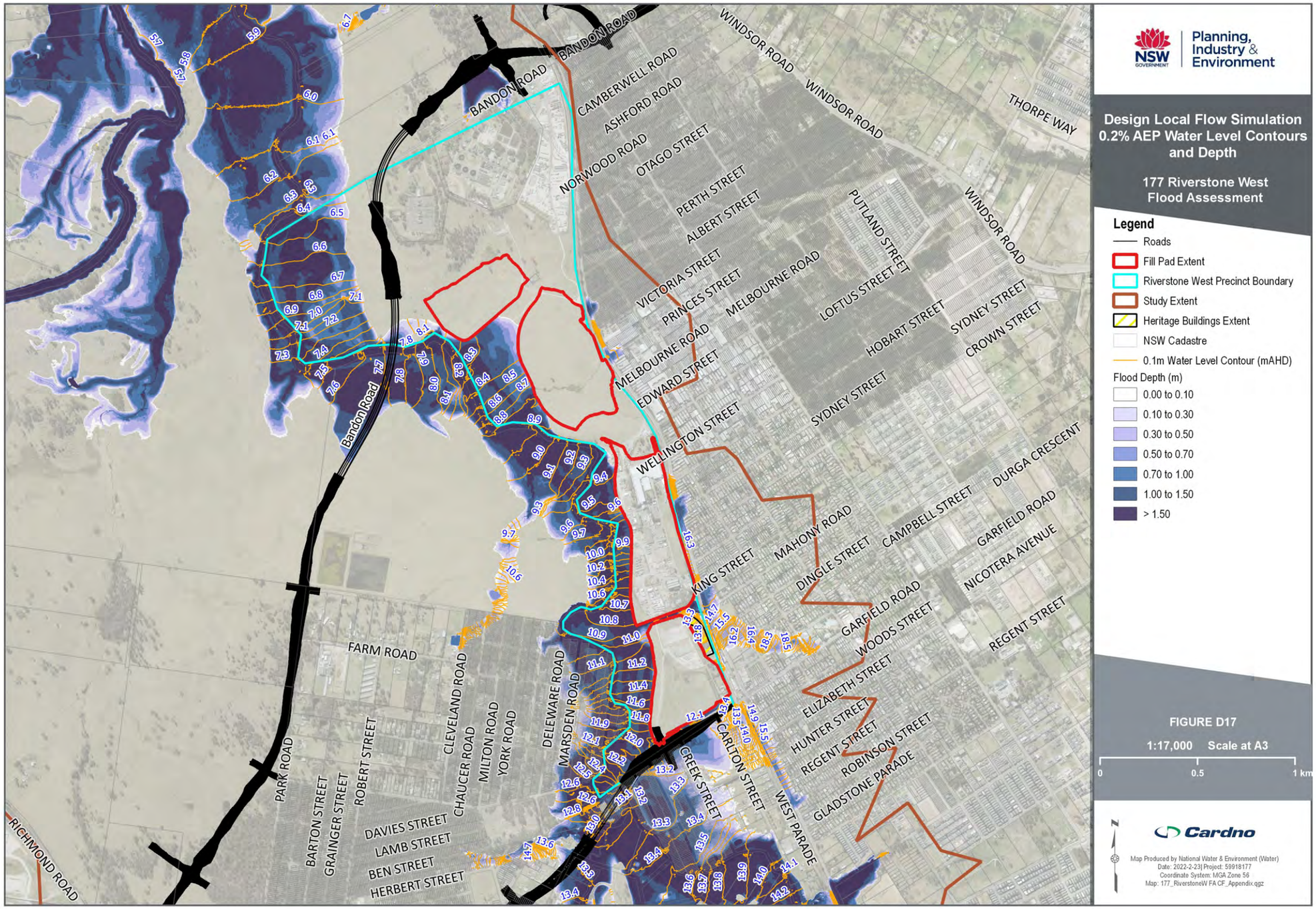
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz


Planning, Industry & Environment
Design Local Flow Simulation 0.2% AEP Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D17
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz
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THORPE WAY
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
MAHONY ROAD
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
KING STREET
DINGLE STREET
WOODS STREET
REGENT STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
CARLTON STREET
CREEK STREET
WEST PARADE
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
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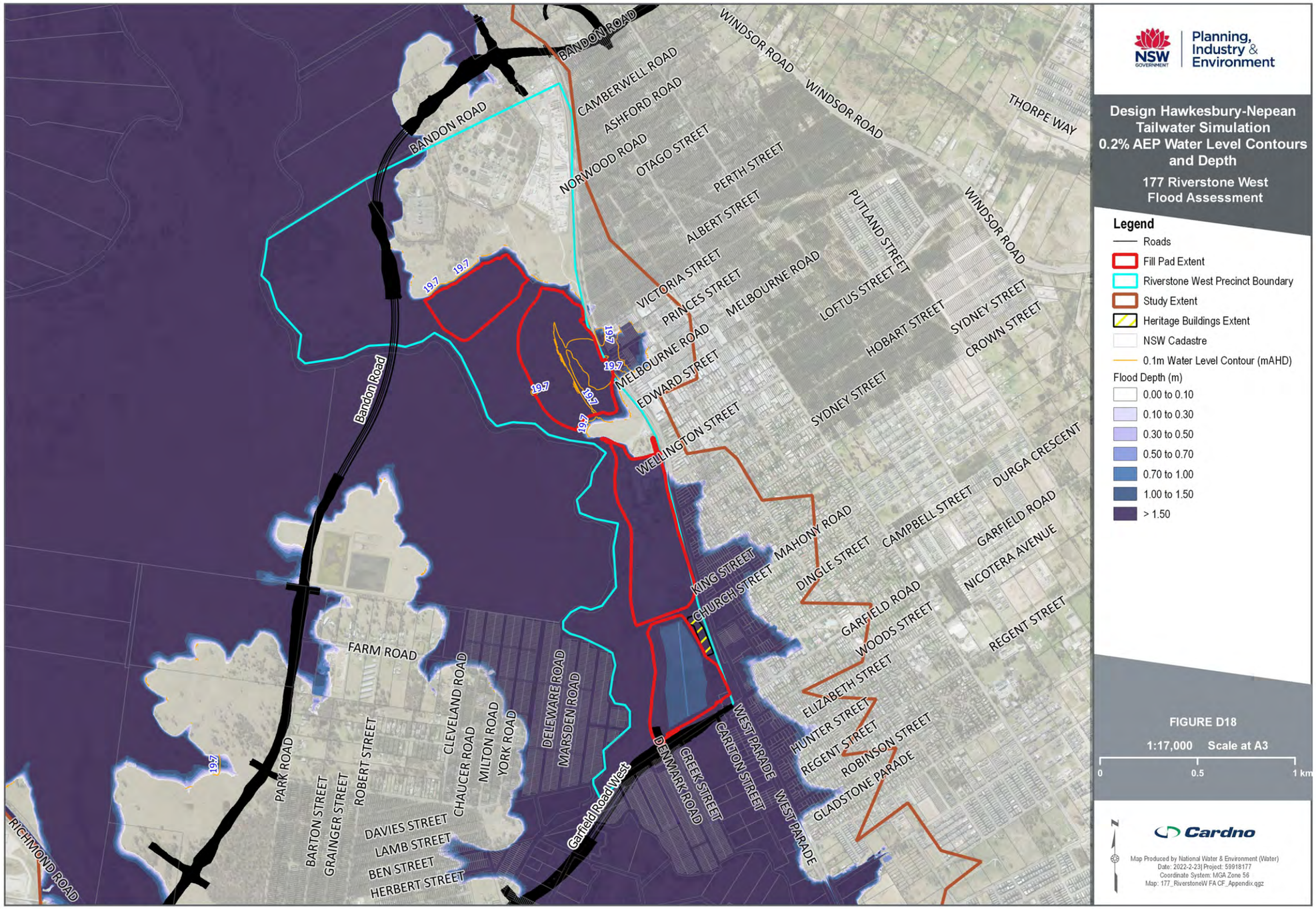
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD



Planning, Industry & Environment

Design Hawkesbury-Nepean Tailwater Simulation
0.2% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

FIGURE D18

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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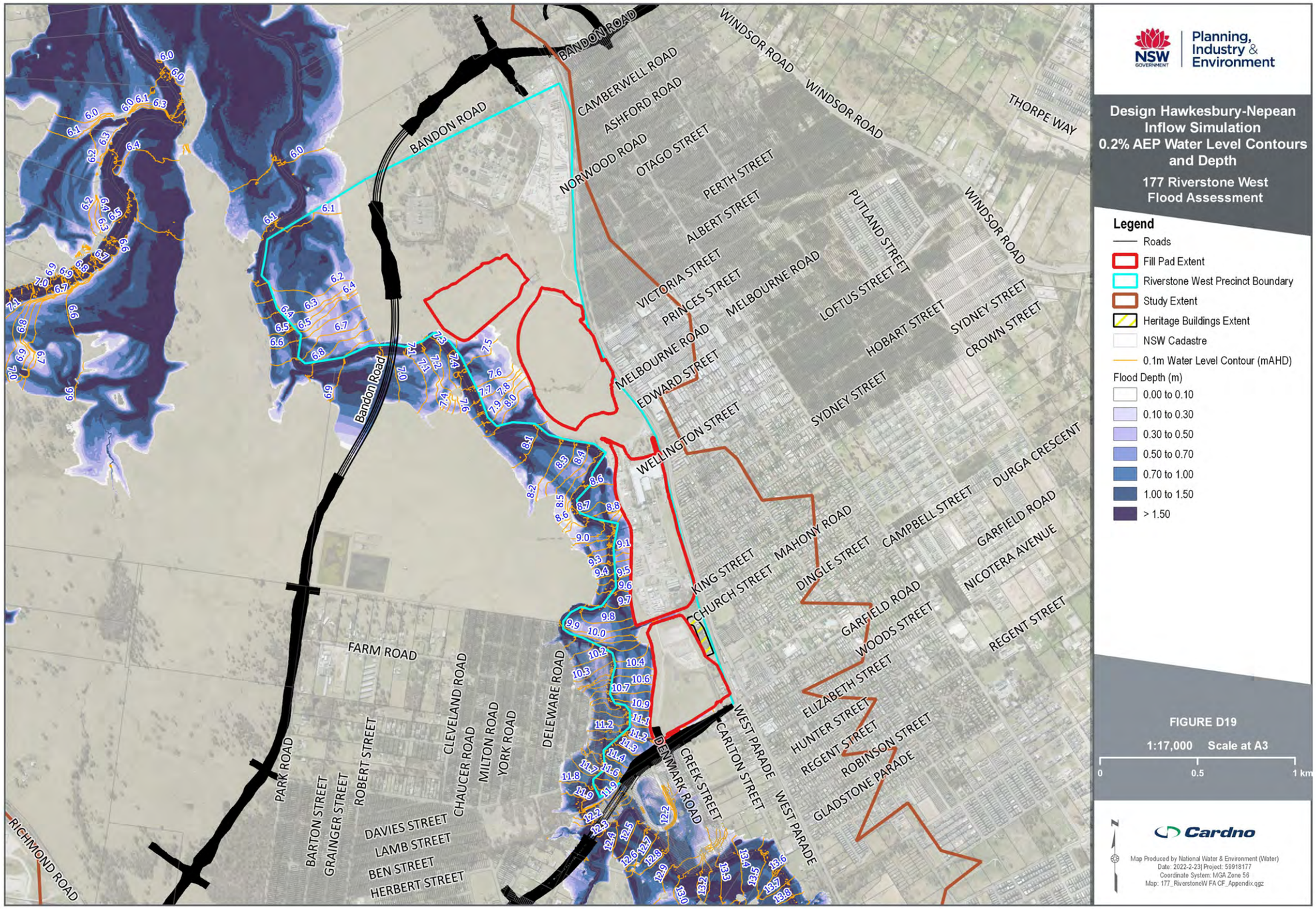
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Design Hawkesbury-Nepean Inflow Simulation
0.2% AEP Water Level Contours and Depth

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre
- 0.1m Water Level Contour (mAHD)

Flood Depth (m)

- 0.00 to 0.10
- 0.10 to 0.30
- 0.30 to 0.50
- 0.50 to 0.70
- 0.70 to 1.00
- 1.00 to 1.50
- > 1.50

FIGURE D19

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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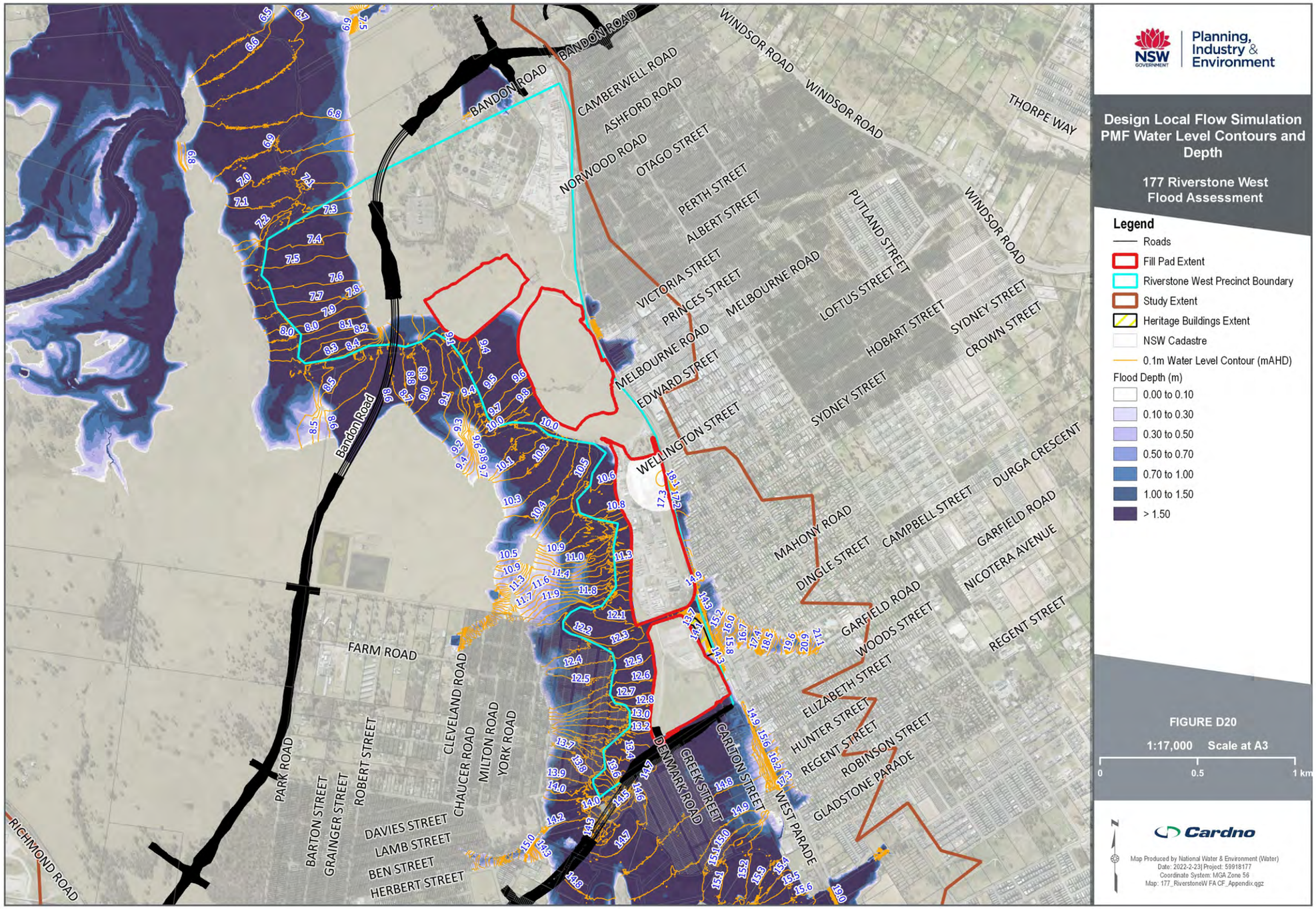
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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ASHFORD ROAD
NORWOOD ROAD
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PERTH STREET
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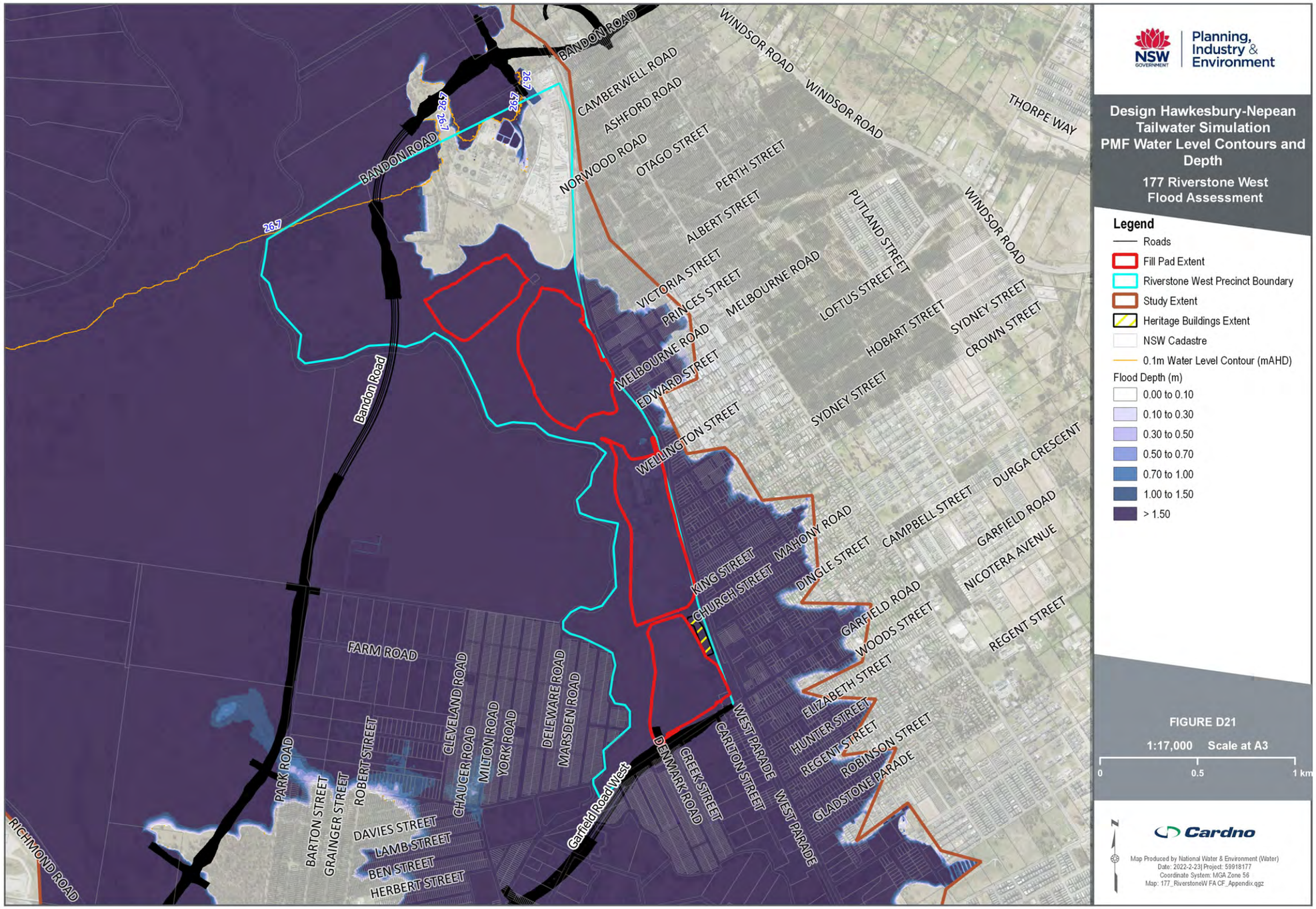
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
Bandon Road
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
FARM ROAD
PARK ROAD
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
BARTON STREET
GRAINGER STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
DENMARK ROAD
GREEK STREET
CARLTON STREET
WEST PARADE
RICHMOND ROAD
Planning, Industry & Environment
NSW GOVERNMENT
Design Local Flow Simulation PMF Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D20
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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WINDSOR ROAD
THORPE WAY
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
PUTLAND STREET
WINDSOR ROAD
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
MELBOURNE ROAD
EDWARD STREET
WELLINGTON STREET
SYDNEY STREET
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
CAMPBELL STREET
DINGLE STREET
KING STREET
CHURCH STREET
GARFIELD ROAD
WOODS STREET
ELIZABETH STREET
HUNTER STREET
REGENT STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
GREEK STREET
DENMARK ROAD
WEST PARADE
Garfield Road West
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
PARK ROAD
ROBERT STREET
BARTON STREET
GRAINGER STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
BANDON ROAD
BANDON ROAD
Bandon Road
26.7
26.7
26.7
26.7
26.7
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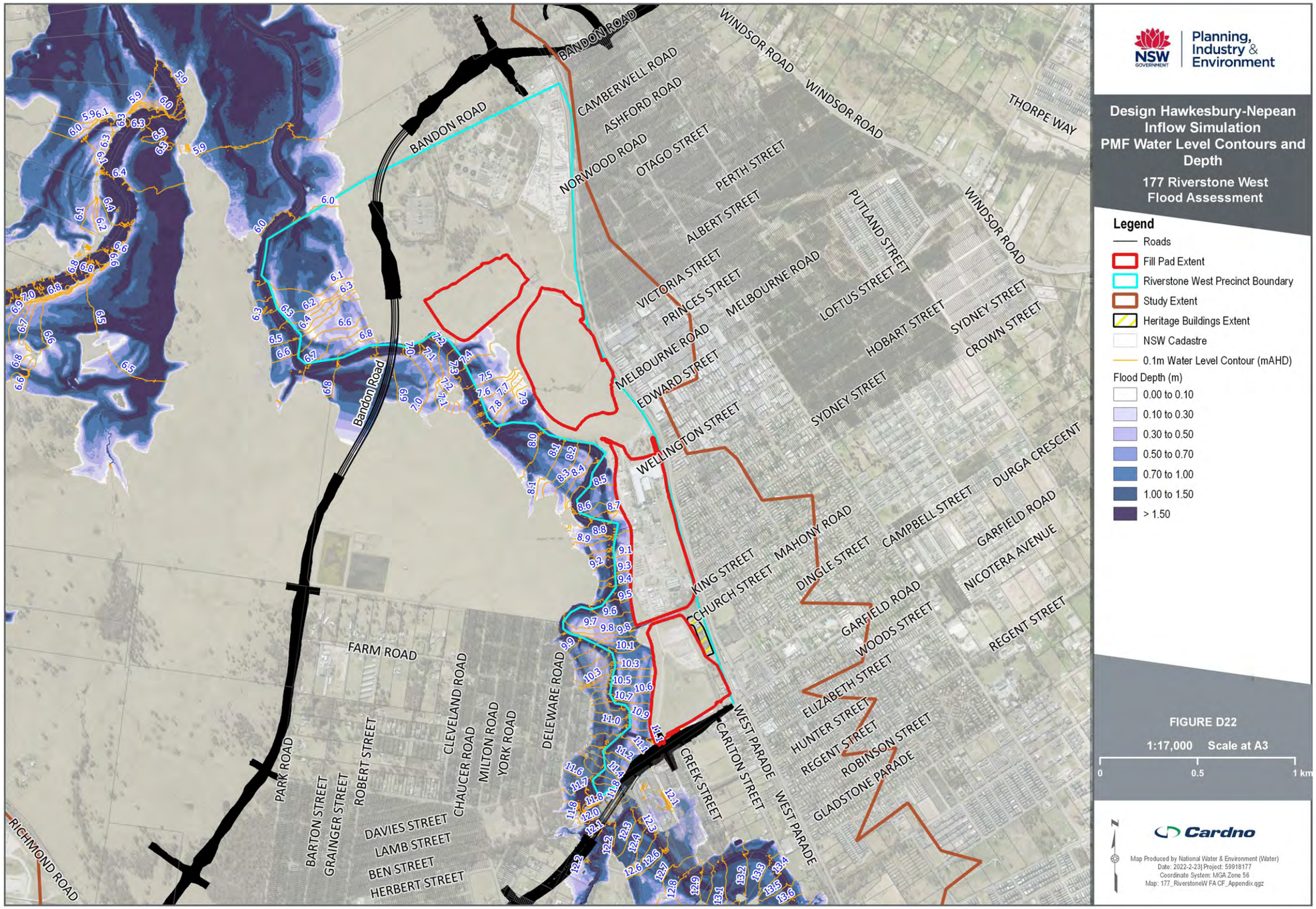
Design Hawkesbury-Nepean Tailwater Simulation
PMF Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D21
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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ASHFORD ROAD
NORWOOD ROAD
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PERTH STREET
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PUTLAND STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
MAHONY ROAD
DINGLE STREET
KING STREET
CHURCH STREET
WOODS STREET
REGENT STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
CREEK STREET
Bandon Road
FARM ROAD
DELEWARE ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
PARK ROAD
ROBERT STREET
GRAINGER STREET
BARTON STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Planning, Industry & Environment
Design Hawkesbury-Nepean Inflow Simulation
PMF Water Level Contours and Depth
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
0.1m Water Level Contour (mAHD)
Flood Depth (m)
0.00 to 0.10
0.10 to 0.30
0.30 to 0.50
0.50 to 0.70
0.70 to 1.00
1.00 to 1.50
> 1.50
FIGURE D22
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
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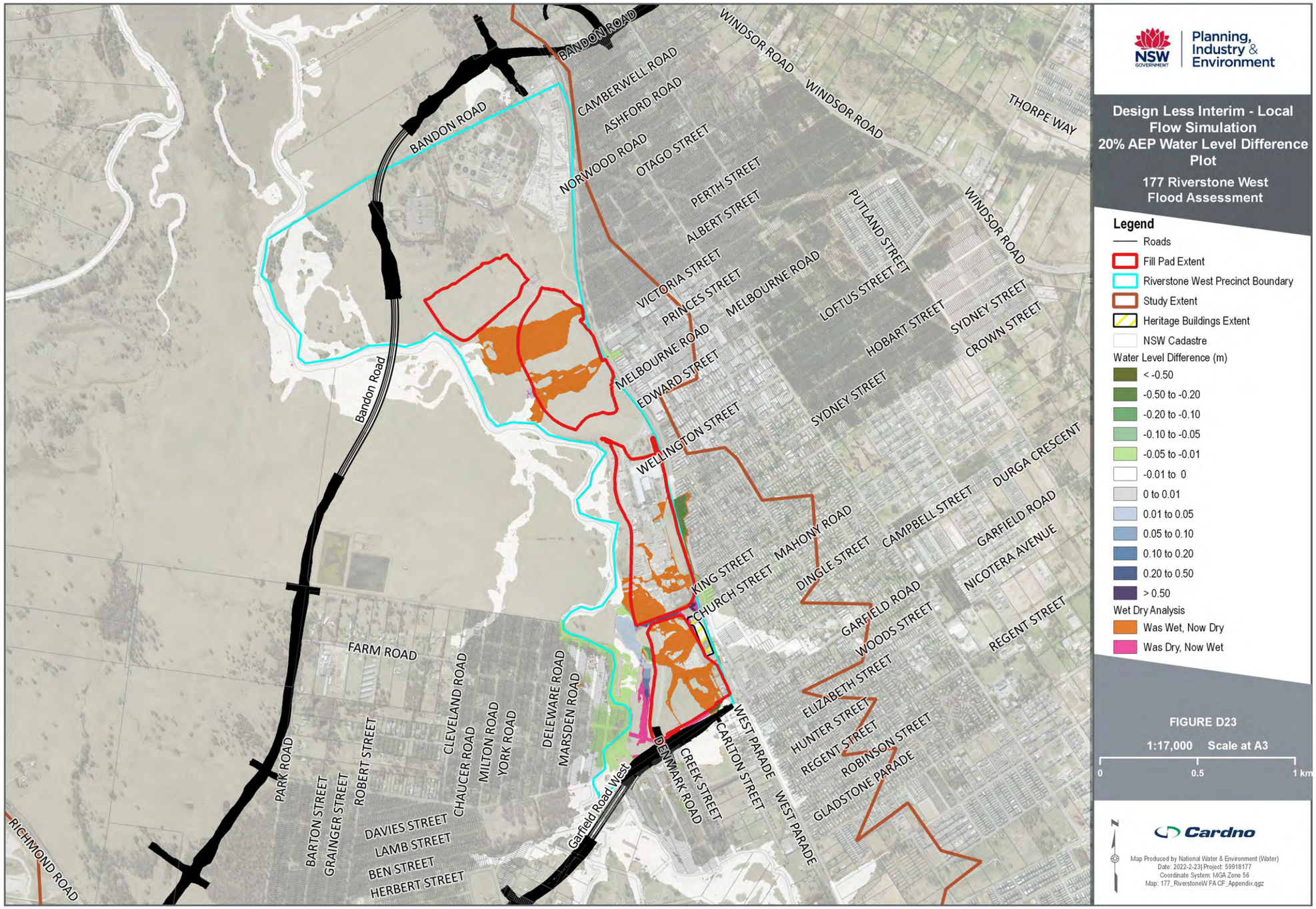
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
EDWARD STREET
WELLINGTON STREET
PUTLAND STREET
LOFTUS STREET
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SYDNEY STREET
CROWN STREET
THORPE WAY
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
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DINGLE STREET
CAMPBELL STREET
KING STREET
CHURCH STREET
WOODS STREET
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HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
CREEK STREET
DENMARK ROAD
Garfield Road West
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
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BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
Planning, Industry & Environment
Design Less Interim - Local Flow Simulation
20% AEP Water Level Difference Plot
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D23
1:17,000 Scale at A3
0
0.5
1 km
Cardno
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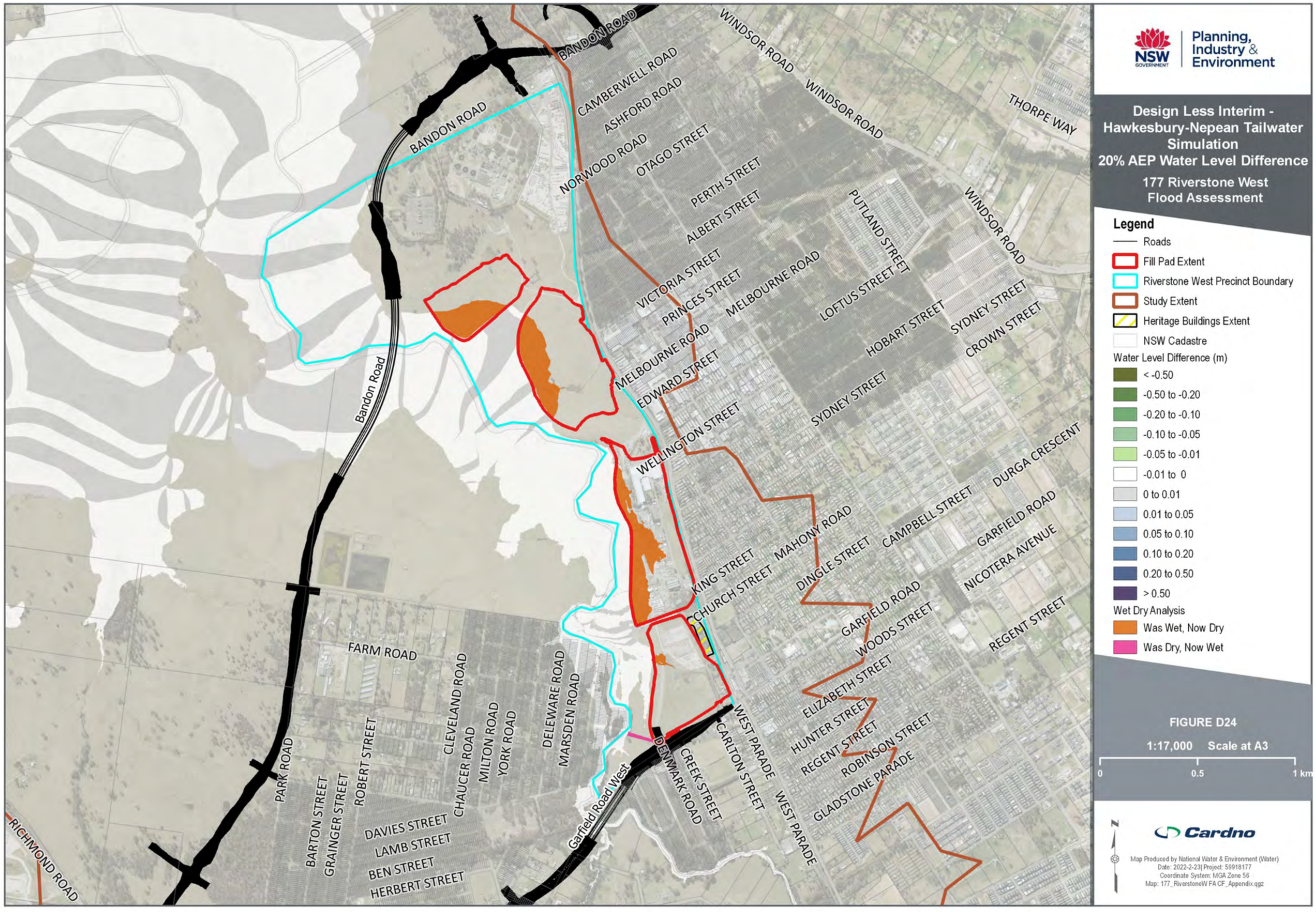
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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WINDSOR ROAD
THORPE WAY
PERTH STREET
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PUTLAND STREET
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CROWN STREET
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WELLINGTON STREET
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GARFIELD ROAD
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DINGLE STREET
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GLADSTONE PARADE
Bandon Road
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BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
Garfield Road West
DENMARK ROAD
CREEK STREET
CARLTON STREET
WEST PARADE
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
NSW GOVERNMENT
Planning, Industry & Environment
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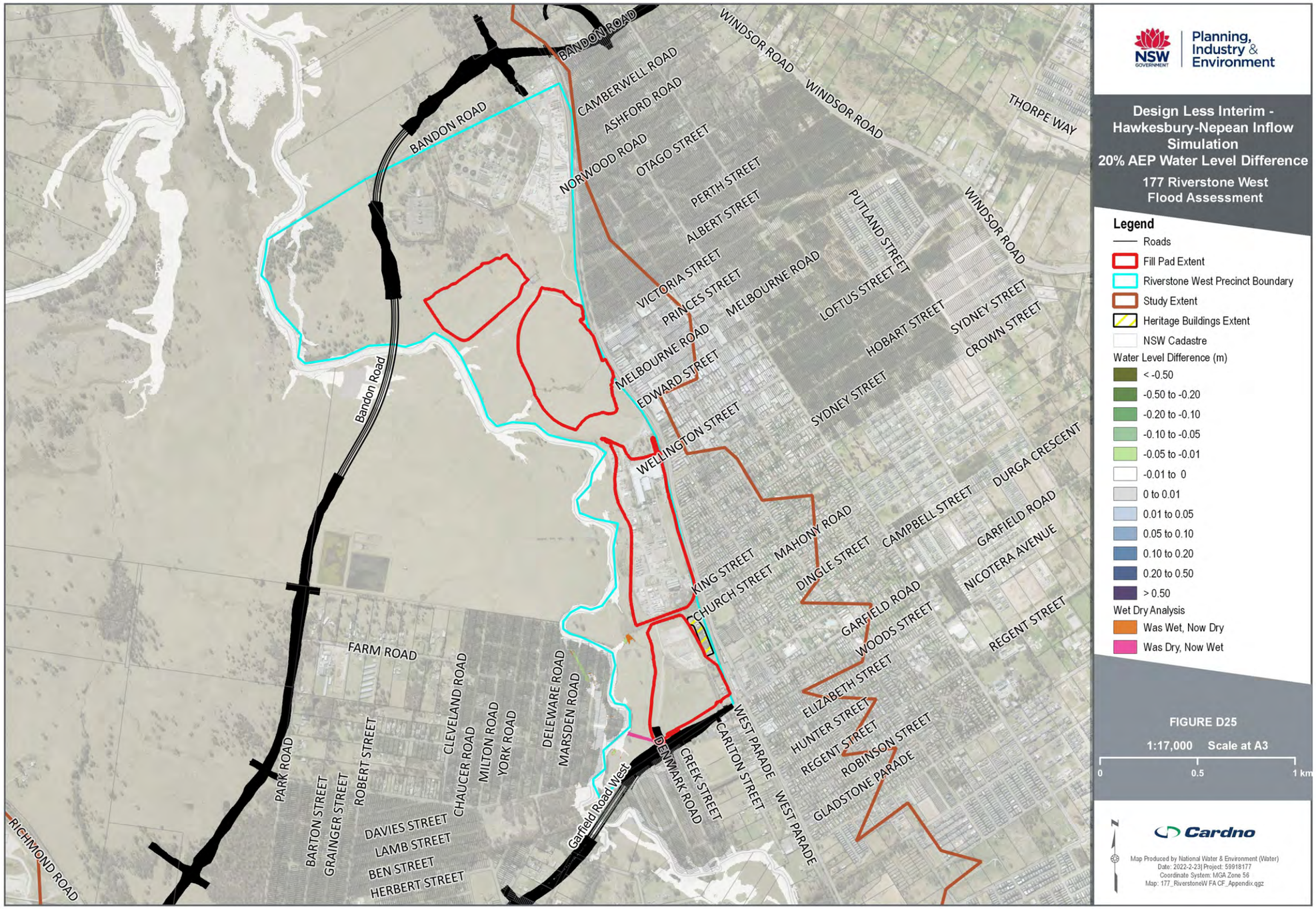
20% AEP Water Level Difference
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D24
1:17,000 Scale at A3
0
0.5
1 km
N
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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VICTORIA STREET
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EDWARD STREET
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LOFTUS STREET
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SYDNEY STREET
CROWN STREET
THORPE WAY
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
KING STREET
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HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
CREEK STREET
DENMARK ROAD
Garfield Road West
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Planning, Industry & Environment
Design Less Interim - Hawkesbury-Nepean Inflow Simulation
20% AEP Water Level Difference
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D25
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
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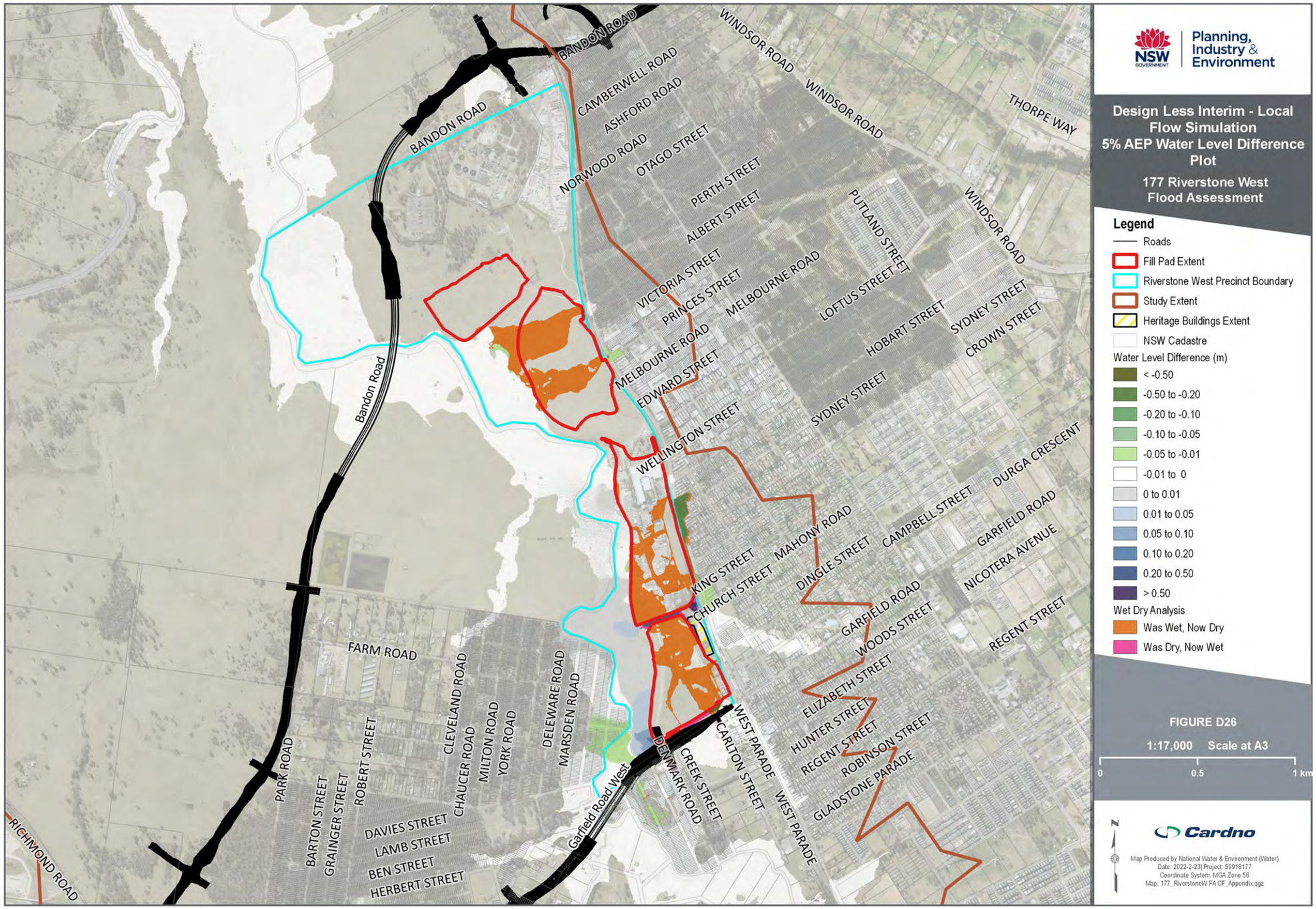
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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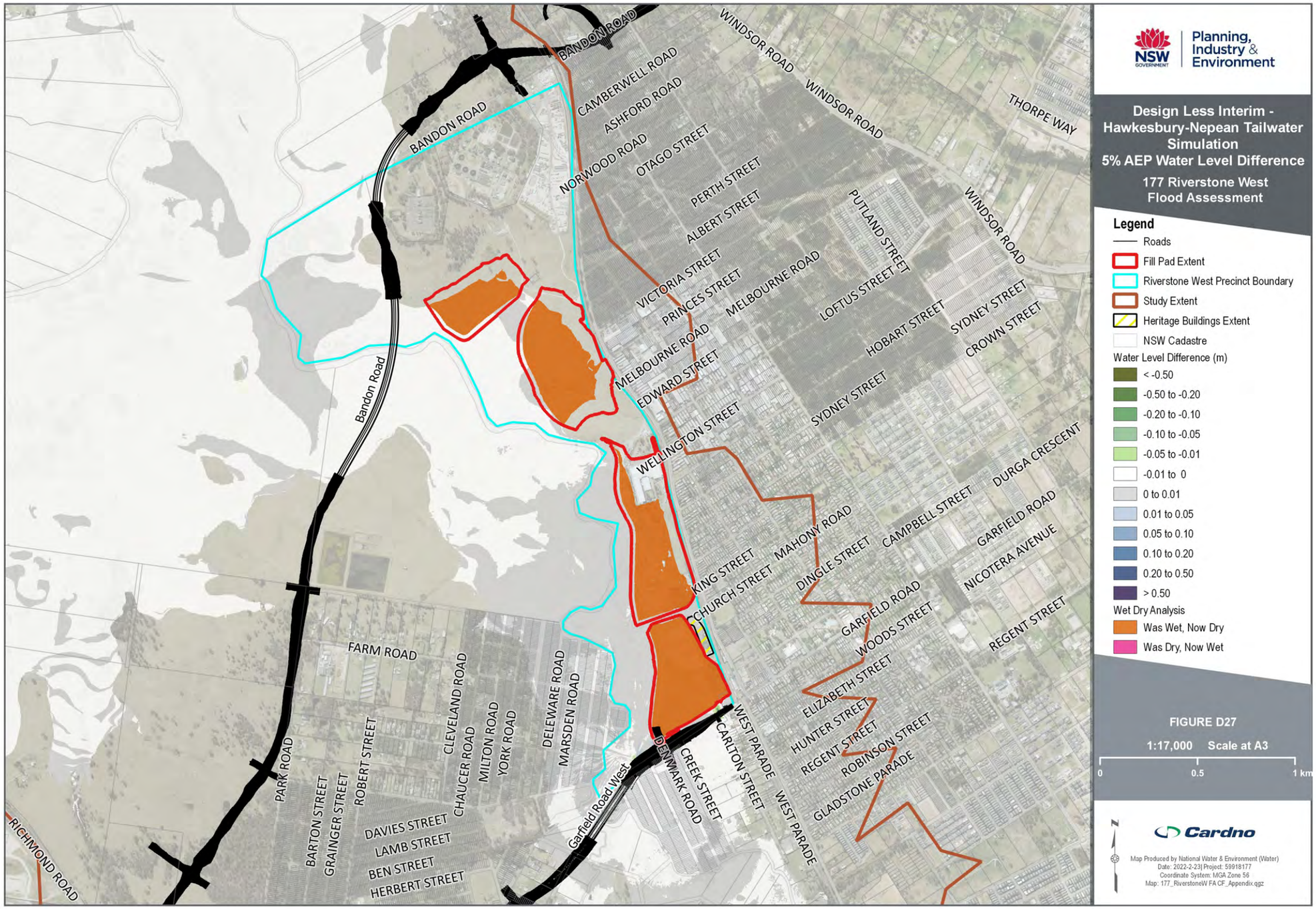
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
EDWARD STREET
WELLINGTON STREET
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
THORPE WAY
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
KING STREET
CHURCH STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
CREEK STREET
DENMARK ROAD
Garfield Road West
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
ROBERT STREET
GRAINGER STREET
BARTON STREET
PARK ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
Planning, Industry & Environment
Design Less Interim - Local Flow Simulation
5% AEP Water Level Difference Plot
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D26
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
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VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
THORPE WAY
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
KING STREET
CHURCH STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Garfield Road West
DENMARK ROAD
CREEK STREET
CARLTON STREET
WEST PARADE
Planning, Industry & Environment
Design Less Interim - Hawkesbury-Nepean Tailwater Simulation
5% AEP Water Level Difference
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D27
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
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Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz

Planning, Industry & Environment

Design Less Interim - Hawkesbury-Nepean Inflow Simulation
5% AEP Water Level Difference
177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

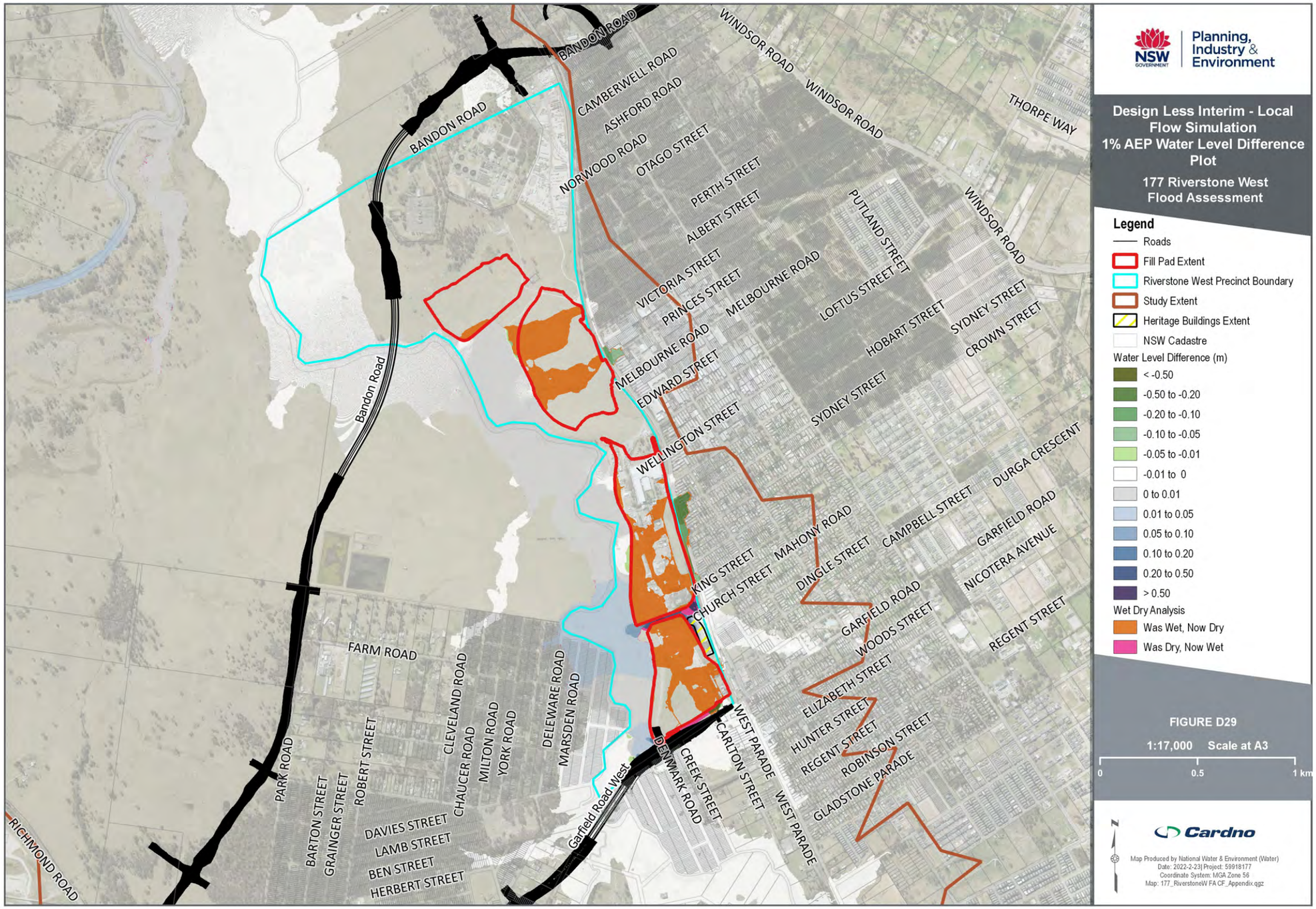
FIGURE D28

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz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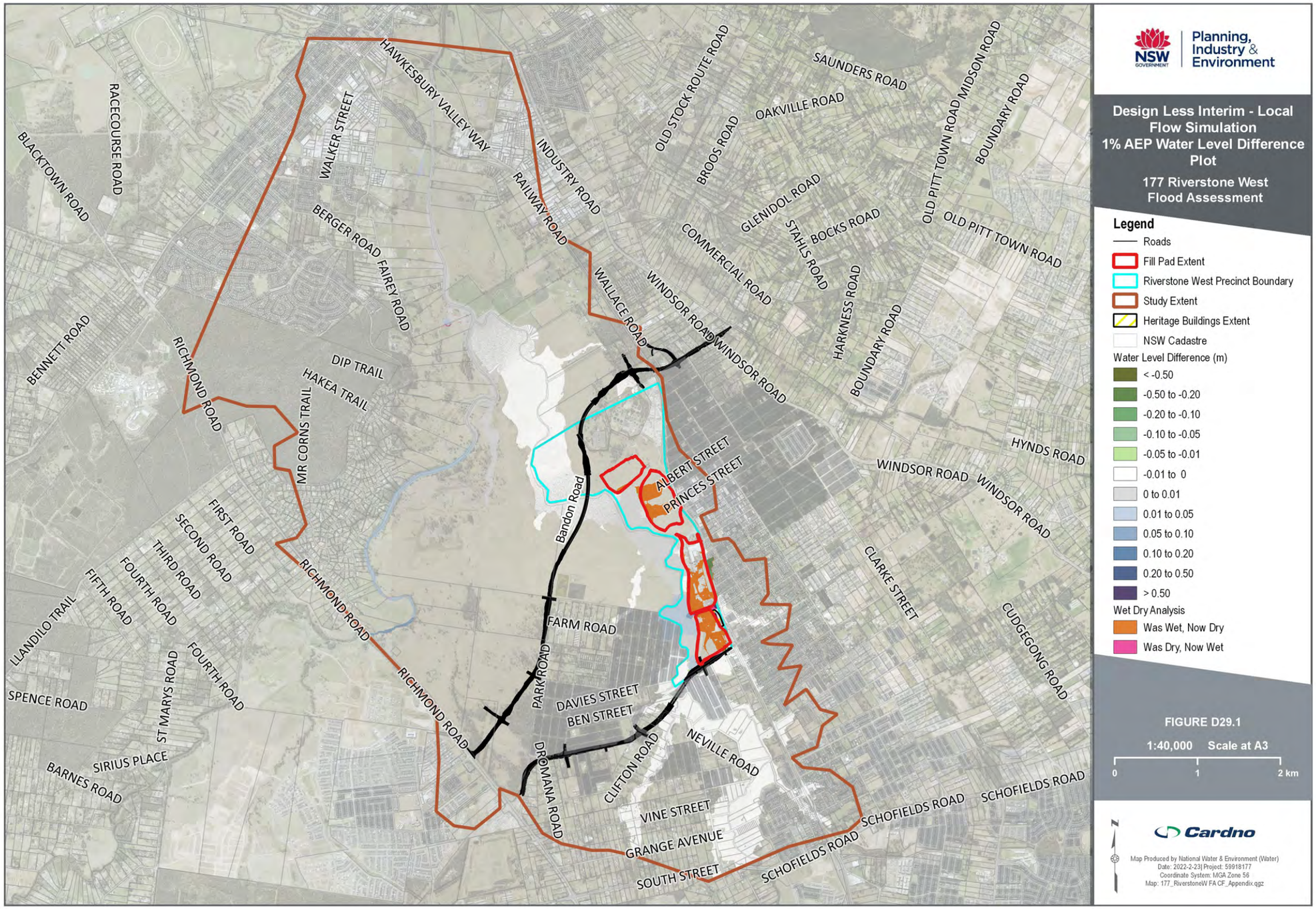
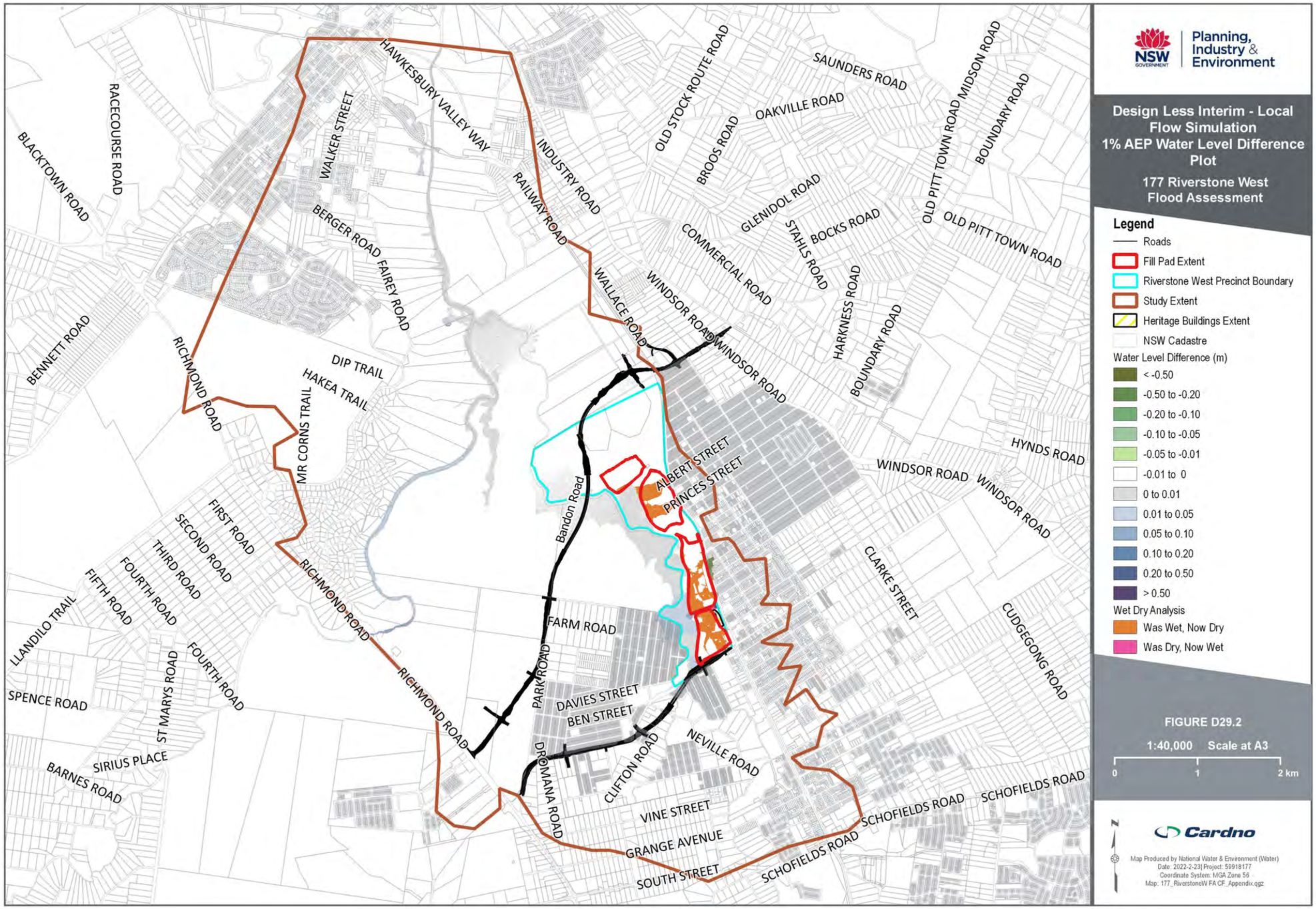
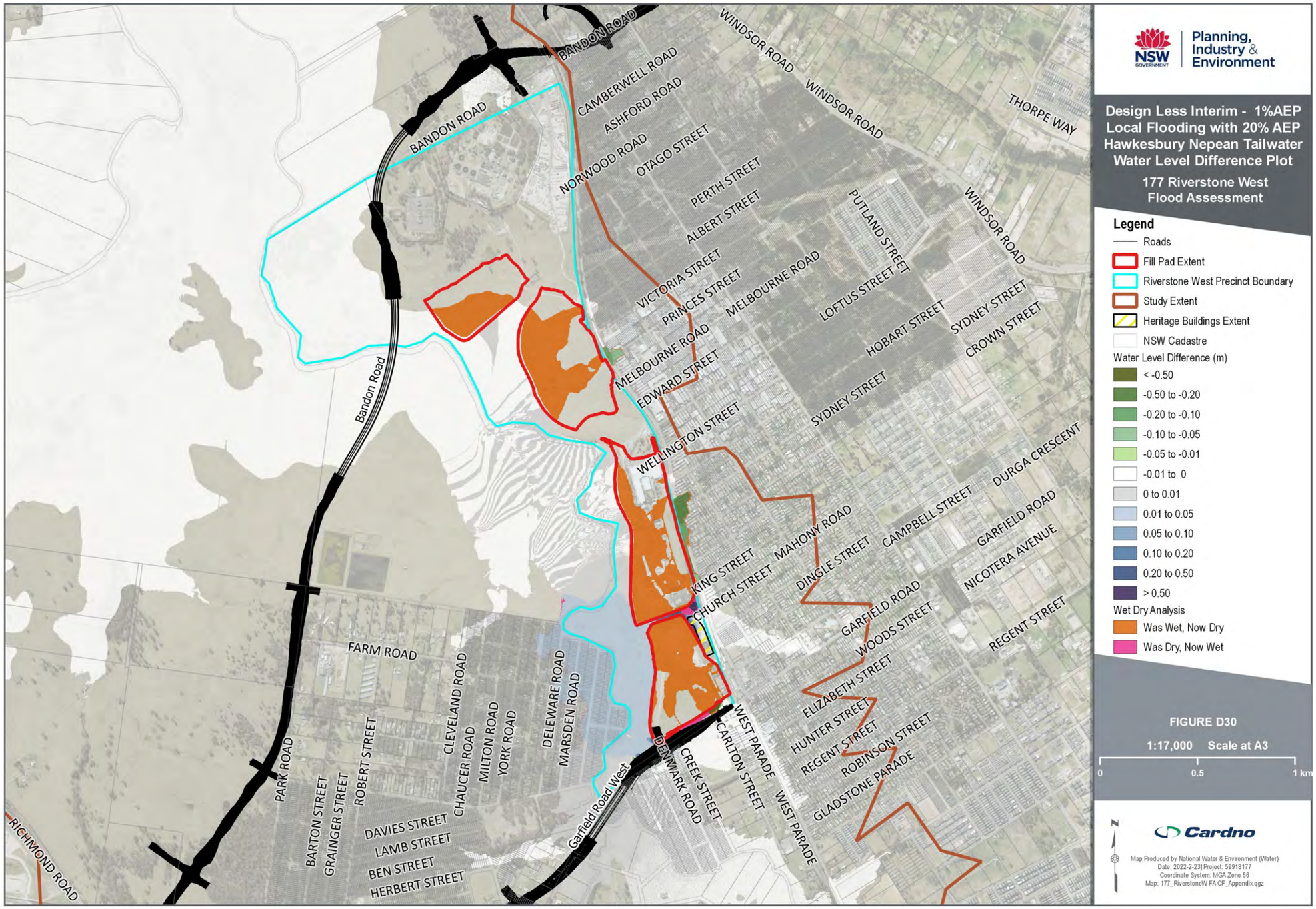
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
PUTLAND STREET
LOFTUS STREET
THORPE WAY
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
KING STREET
CHURCH STREET
MAHONY ROAD
DINGLE STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Garfield Road West
DENMARK ROAD
CREEK STREET
CARLTON STREET
WEST PARADE
NSW GOVERNMENT
Planning, Industry & Environment
Design Less Interim - Local Flow Simulation
1% AEP Water Level Difference Plot
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D29
1:17,000 Scale at A3
0
0.5
1 km
N
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz


Planning, Industry & Environment
Design Less Interim - Local Flow Simulation
1% AEP Water Level Difference Plot
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D29.1
1:40,000 Scale at A3
0 1 2 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz
HAWKESBURY VALLEY WAY
WALKER STREET
RACECOURSE ROAD
BLACKTOWN ROAD
INDUSTRY ROAD
RAILWAY ROAD
OLD STOCK ROUTE ROAD
SAUNDERS ROAD
BROOS ROAD
OAKVILLE ROAD
OLD PITT TOWN ROAD MIDSON ROAD
BOUNDARY ROAD
GLENIDOL ROAD
STAHLS ROAD
BOCKS ROAD
OLD PITT TOWN ROAD
COMMERCIAL ROAD
BERGER ROAD
FAIREY ROAD
WALLACE ROAD
WINDSOR ROAD
HARKNESS ROAD
BOUNDARY ROAD
BENNETT ROAD
RICHMOND ROAD
DIP TRAIL
HAKEA TRAIL
MR CORNS TRAIL
HYNDS ROAD
WINDSOR ROAD
ALBERT STREET
PRINCES STREET
Bandon Road
CLARKE STREET
CUDGEGONG ROAD
FIRST ROAD
SECOND ROAD
THIRD ROAD
FOURTH ROAD
FIFTH ROAD
LLANDILO TRAIL
FARM ROAD
PARK ROAD
SPENCE ROAD
ST MARYS ROAD
FOURTH ROAD
DAVIES STREET
BEN STREET
DROMANA ROAD
CLIFTON ROAD
NEVILLE ROAD
SIRIUS PLACE
BARNES ROAD
VINE STREET
GRANGE AVENUE
SOUTH STREET
SCHOFIELDS ROAD
SCHOFIELDS ROAD
SCHOFIELDS ROAD


Planning, Industry & Environment
Design Less Interim - Local Flow Simulation
1% AEP Water Level Difference Plot
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D29.2
1:40,000 Scale at A3
0 1 2 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz
HAWKESBURY VALLEY WAY
WALKER STREET
RACECOURSE ROAD
BLACKTOWN ROAD
INDUSTRY ROAD
RAILWAY ROAD
OLD STOCK ROUTE ROAD
SAUNDERS ROAD
BROOS ROAD
OAKVILLE ROAD
OLD PITT TOWN ROAD MIDSON ROAD
BOUNDARY ROAD
GLENIDOL ROAD
STAHLS ROAD
BOCKS ROAD
OLD PITT TOWN ROAD
COMMERCIAL ROAD
BERGER ROAD
FAIREY ROAD
WALLACE ROAD
WINDSOR ROAD
HARKNESS ROAD
BOUNDARY ROAD
BENNETT ROAD
RICHMOND ROAD
DIP TRAIL
HAKEA TRAIL
MR CORNS TRAIL
HYNDS ROAD
WINDSOR ROAD
WINDSOR ROAD
ALBERT STREET
PRINCES STREET
Bandon Road
CLARKE STREET
CUDGEGONG ROAD
FIRST ROAD
SECOND ROAD
THIRD ROAD
FOURTH ROAD
FIFTH ROAD
LLANDILO TRAIL
FOURTH ROAD
ST MARYS ROAD
SPENCE ROAD
SIRIUS PLACE
BARNES ROAD
RICHMOND ROAD
RICHMOND ROAD
FARM ROAD
PARK ROAD
DAVIES STREET
BEN STREET
CLIFTON ROAD
NEVILLE ROAD
DRIMANA ROAD
VINE STREET
GRANGE AVENUE
SOUTH STREET
SCHOFIELDS ROAD
SCHOFIELDS ROAD
SCHOFIELDS ROAD



Planning, Industry & Environment

Design Less Interim - 1%AEP Local Flooding with 20% AEP Hawkesbury Nepean Tailwater Water Level Difference Plot

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

FIGURE D30

1:17,000 Scale at A3

0 0.5 1 km

Cardno

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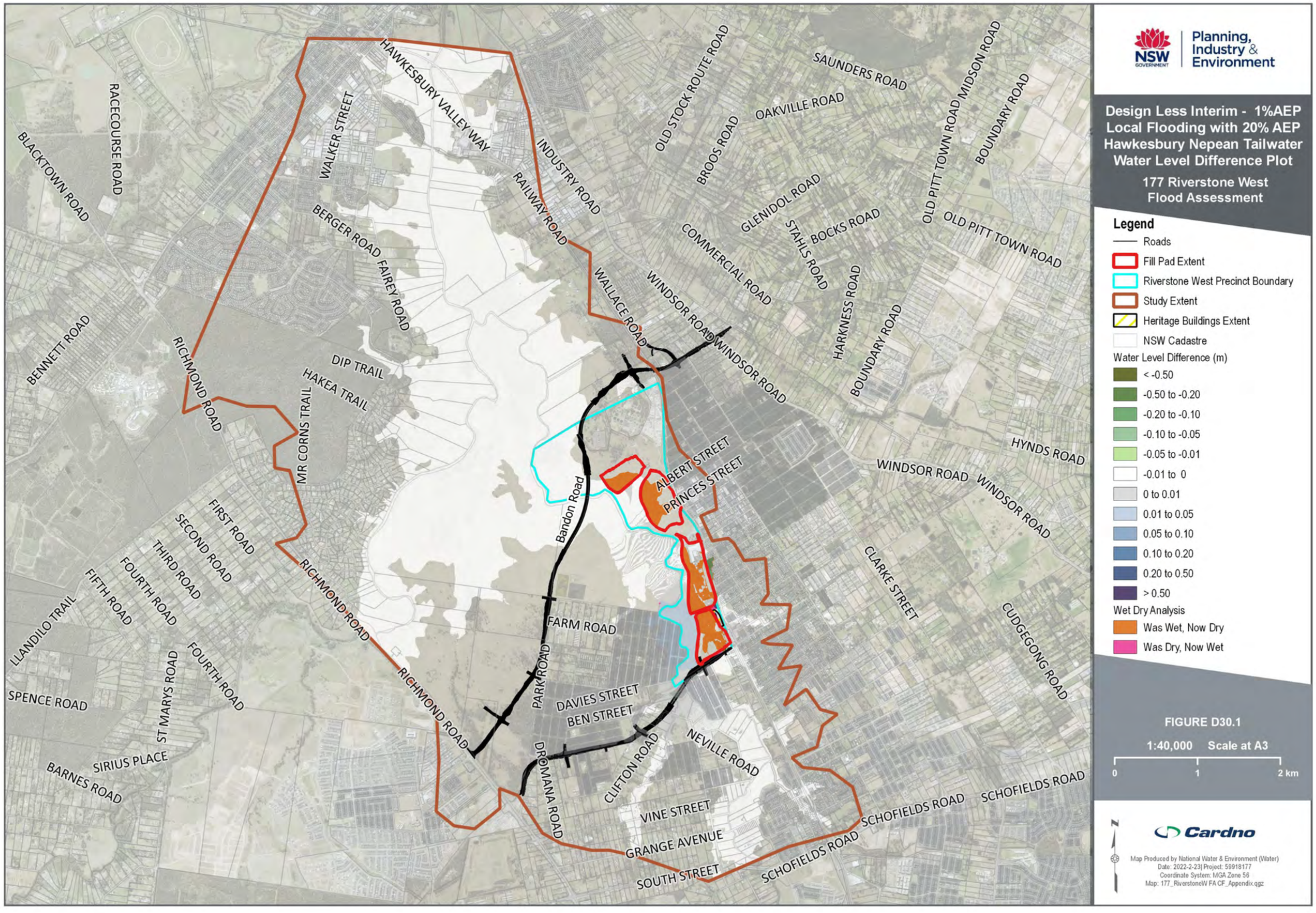
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Design Less Interim - 1%AEP Local Flooding with 20% AEP Hawkesbury Nepean Tailwater Water Level Difference Plot

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

FIGURE D30.1

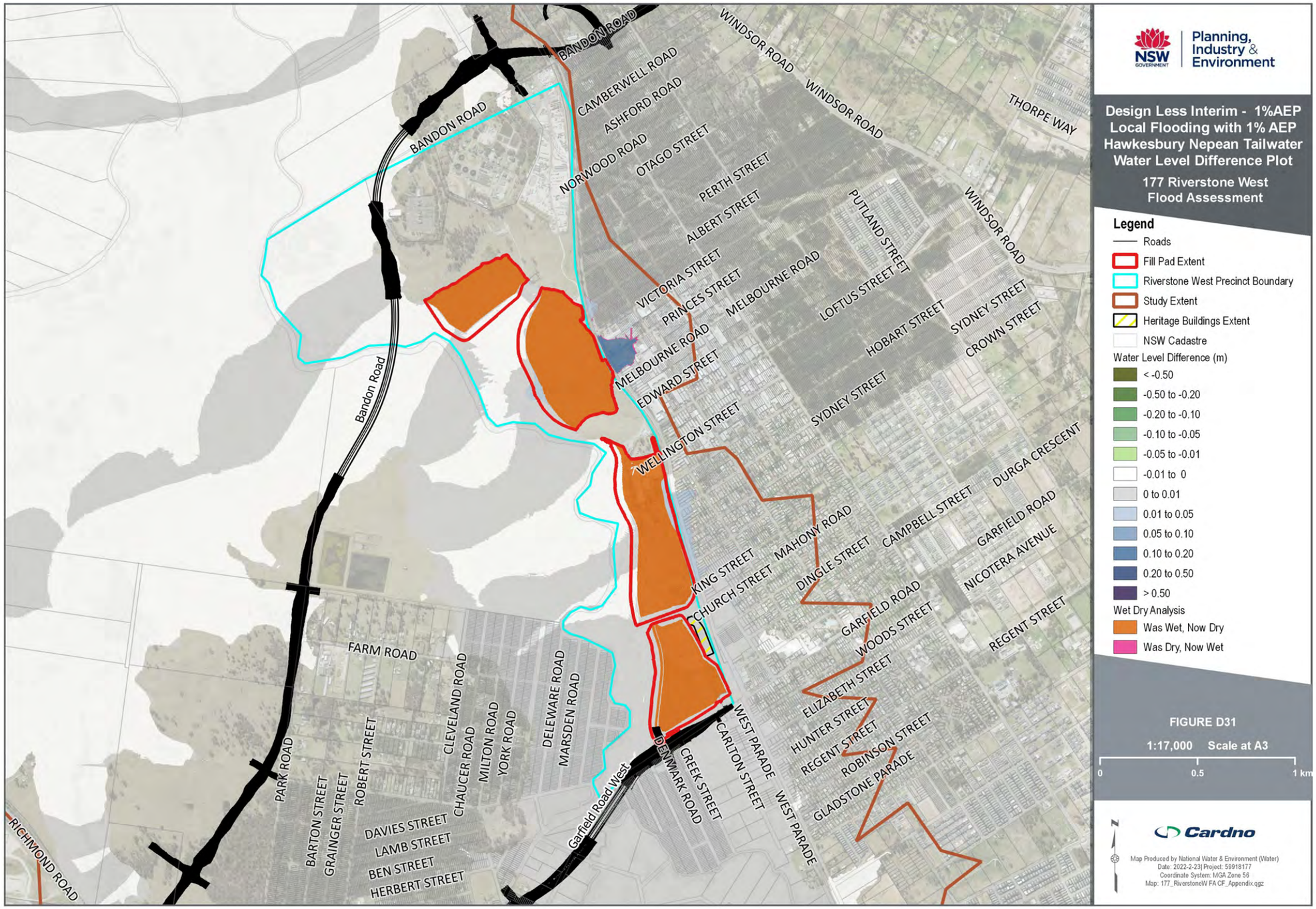
1:40,000 Scale at A3

0 1 2 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz

Planning, Industry & Environment
Design Less Interim - 1%AEP Local Flooding with 20% AEP Hawkesbury Nepean Tailwater Water Level Difference Plot
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D30.2
1:40,000 Scale at A3
0 1 2 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz
HAWKESBURY VALLEY WAY
WALKER STREET
RACECOURSE ROAD
BLACKTOWN ROAD
INDUSTRY ROAD
RAILWAY ROAD
BERGER ROAD
FAIREY ROAD
WALLACE ROAD
OLD STOCK ROUTE ROAD
SAUNDERS ROAD
BROOS ROAD
OAKVILLE ROAD
OLD PITT TOWN ROAD MIDSON ROAD
BOUNDARY ROAD
GLENIDOL ROAD
STAHLS ROAD
BOCKS ROAD
OLD PITT TOWN ROAD
COMMERCIAL ROAD
WINDSOR ROAD
HARKNESS ROAD
BOUNDARY ROAD
BENNETT ROAD
RICHMOND ROAD
DIP TRAIL
HAKEA TRAIL
MR CORNS TRAIL
HYNDS ROAD
WINDSOR ROAD
ALBERT STREET
PRINCES STREET
Bandon Road
CLARKE STREET
CUDGEGONG ROAD
FIRST ROAD
SECOND ROAD
THIRD ROAD
FOURTH ROAD
FIFTH ROAD
LLANDILO TRAIL
SPENCE ROAD
ST MARYS ROAD
FOURTH ROAD
SIRIUS PLACE
BARNES ROAD
FARM ROAD
PARK ROAD
DAVIES STREET
BEN STREET
CLIFTON ROAD
NEVILLE ROAD
DROMANA ROAD
VINE STREET
GRANGE AVENUE
SOUTH STREET
SCHOFIELDS ROAD
SCHOFIELDS ROAD
SCHOFIELDS ROAD



Planning, Industry & Environment

Design Less Interim - 1%AEP Local Flooding with 1% AEP Hawkesbury Nepean Tailwater Water Level Difference Plot

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

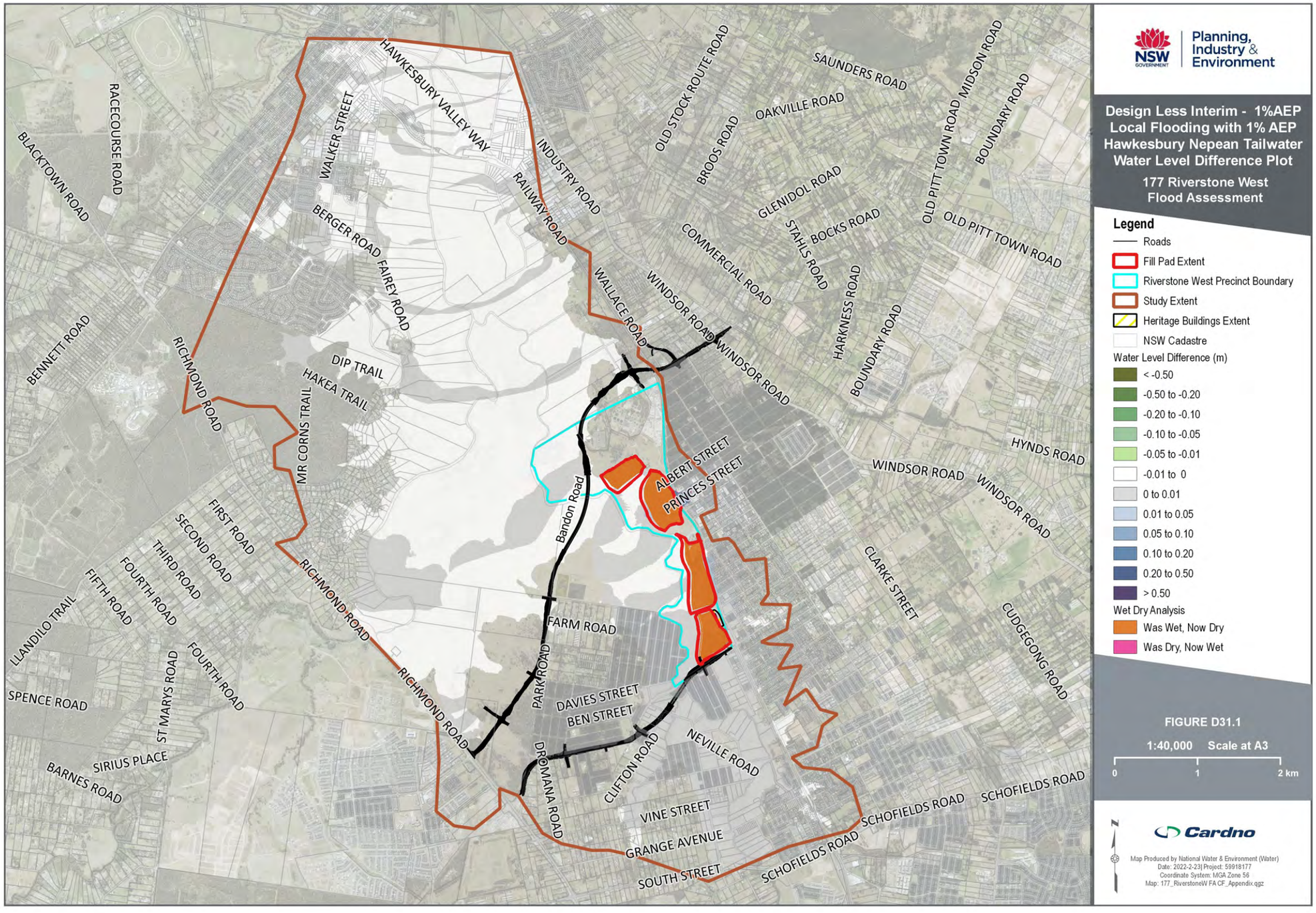
FIGURE D31

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Design Less Interim - 1%AEP Local Flooding with 1% AEP Hawkesbury Nepean Tailwater Water Level Difference Plot

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

FIGURE D31.1

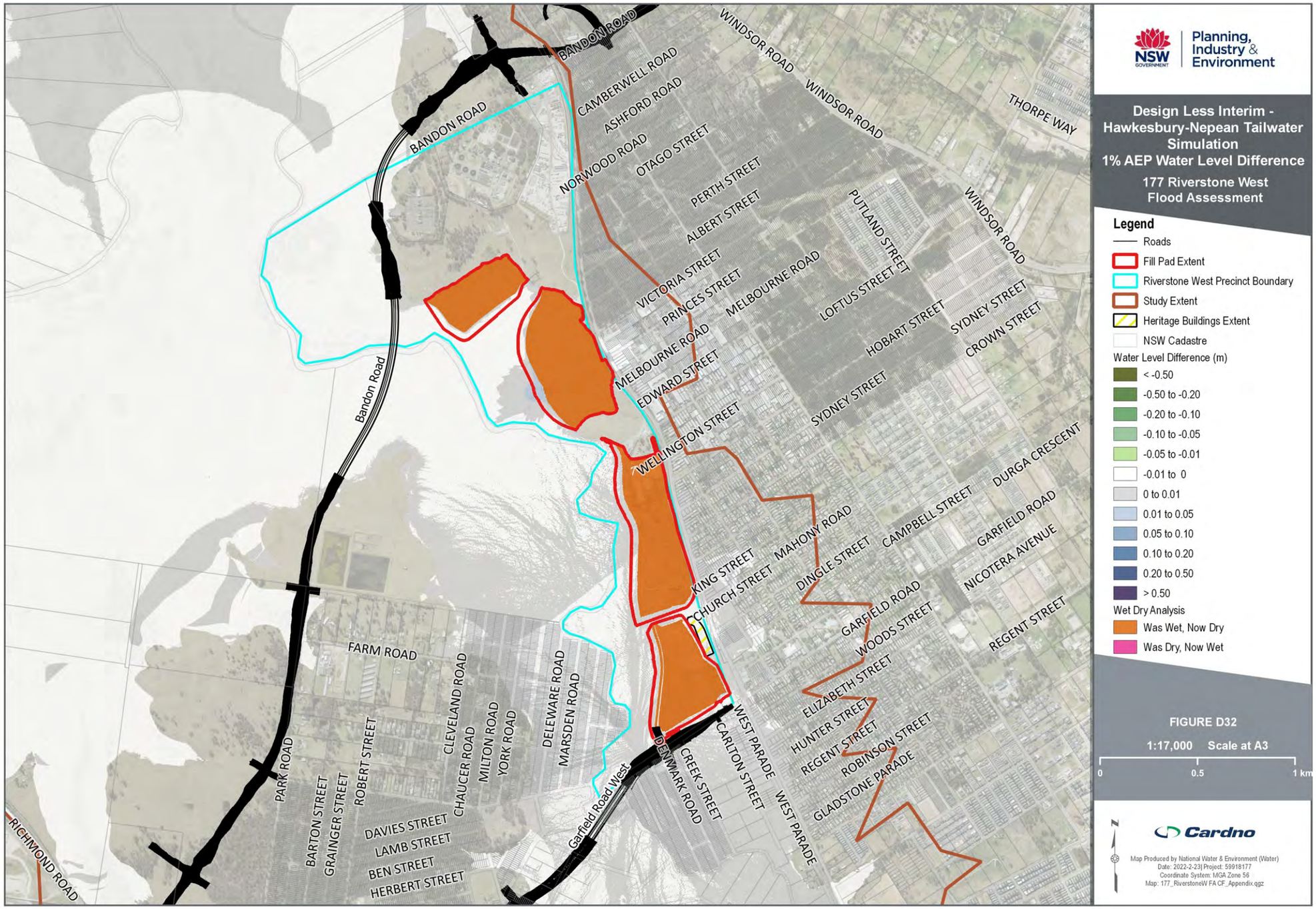
1:40,000 Scale at A3

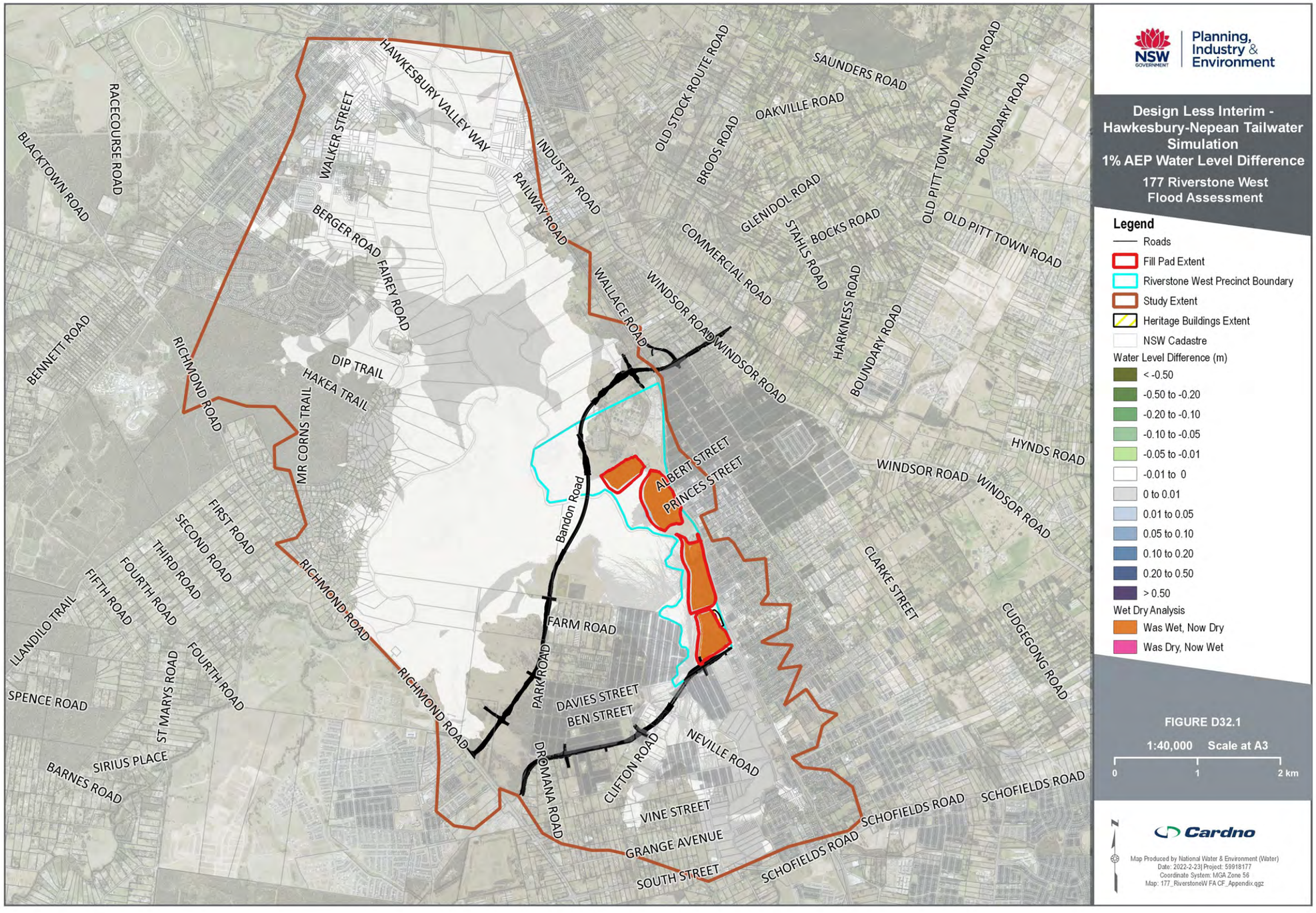
0 1 2 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz

Planning, Industry & Environment
Design Less Interim - 1%AEP Local Flooding with 1% AEP Hawkesbury Nepean Tailwater Water Level Difference Plot
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D31.2
1:40,000 Scale at A3
0 1 2 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz
HAWKESBURY VALLEY WAY
WALKER STREET
INDUSTRY ROAD
RACECOURSE ROAD
BLACKTOWN ROAD
BERGER ROAD
FAIREY ROAD
RAILWAY ROAD
WALLACE ROAD
OLD STOCK ROUTE ROAD
SAUNDERS ROAD
BROOS ROAD
OAKVILLE ROAD
OLD PITT TOWN ROAD MIDSON ROAD
BOUNDARY ROAD
GLENIDOL ROAD
STAHLS ROAD
BOCKS ROAD
OLD PITT TOWN ROAD
COMMERCIAL ROAD
WINDSOR ROAD
HARKNESS ROAD
BOUNDARY ROAD
BENNETT ROAD
RICHMOND ROAD
DIP TRAIL
HAKEA TRAIL
MR CORNS TRAIL
HYNDS ROAD
WINDSOR ROAD
WINDSOR ROAD
ALBERT STREET
PRINCES STREET
Bandon Road
CLARKE STREET
CUDGEGONG ROAD
FIRST ROAD
SECOND ROAD
THIRD ROAD
FOURTH ROAD
FIFTH ROAD
FOURTH ROAD
LLANDILO TRAIL
ST MARYS ROAD
SPENCE ROAD
SIRIUS PLACE
BARNES ROAD
RICHMOND ROAD
RICHMOND ROAD
FARM ROAD
PARK ROAD
DAVIES STREET
BEN STREET
CLIFTON ROAD
NEVILLE ROAD
DROMANA ROAD
VINE STREET
GRANGE AVENUE
SOUTH STREET
SCHOFIELDS ROAD
SCHOFIELDS ROAD
SCHOFIELDS ROAD


BANDON ROAD
WINDSOR ROAD
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
EDWARD STREET
WELLINGTON STREET
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
THORPE WAY
DURGA CRESCENT
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
DINGLE STREET
CAMPBELL STREET
KING STREET
CHURCH STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
WEST PARADE
CARLTON STREET
CREEK STREET
DENMARK ROAD
Garfield Road West
Bandon Road
FARM ROAD
PARK ROAD
BARTON STREET
GRAINGER STREET
ROBERT STREET
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Planning, Industry & Environment
NSW GOVERNMENT
Design Less Interim - Hawkesbury-Nepean Tailwater Simulation
1% AEP Water Level Difference
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D32
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz



Planning, Industry & Environment

Design Less Interim - Hawkesbury-Nepean Tailwater Simulation
1% AEP Water Level Difference
177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

FIGURE D32.1

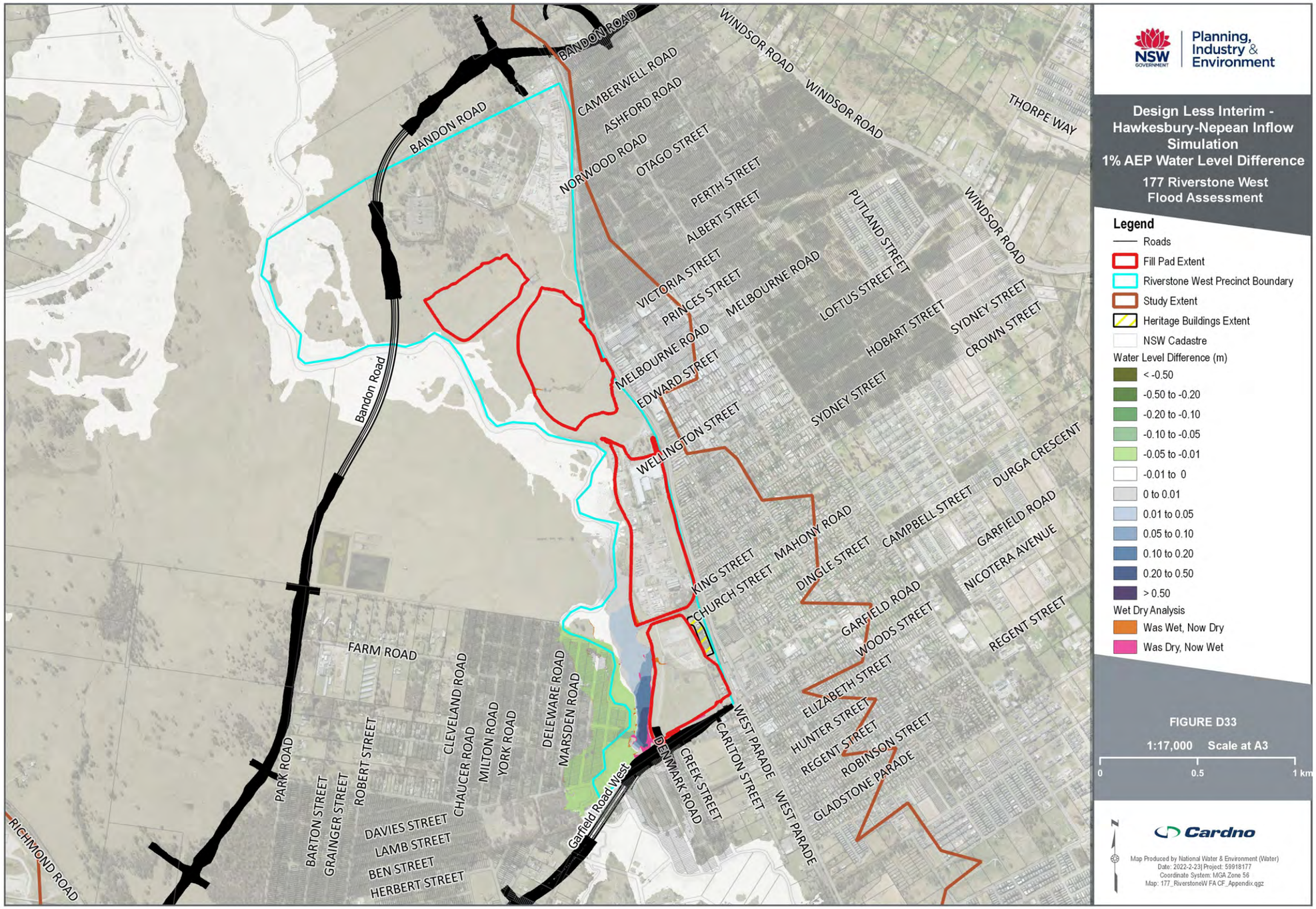
1:40,000 Scale at A3

0 1 2 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz

Planning, Industry & Environment
Design Less Interim - Hawkesbury-Nepean Tailwater Simulation
1% AEP Water Level Difference
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D32.2
1:40,000 Scale at A3
0 1 2 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz
HAWKESBURY VALLEY WAY
WALKER STREET
INDUSTRY ROAD
RACECOURSE ROAD
BLACKTOWN ROAD
BERGER ROAD
FAIREY ROAD
RAILWAY ROAD
WALLACE ROAD
OLD STOCK ROUTE ROAD
SAUNDERS ROAD
BROOS ROAD
OAKVILLE ROAD
OLD PITT TOWN ROAD MIDSON ROAD
BOUNDARY ROAD
GLENIDOL ROAD
STAHLS ROAD
BOCKS ROAD
OLD PITT TOWN ROAD
COMMERCIAL ROAD
WINDSOR ROAD
HARKNESS ROAD
BOUNDARY ROAD
BENNETT ROAD
RICHMOND ROAD
DIP TRAIL
HAKEA TRAIL
MR CORNS TRAIL
WINDSOR ROAD
HYNDS ROAD
ALBERT STREET
PRINCES STREET
Bandon Road
CLARKE STREET
CUDGEGONG ROAD
FIRST ROAD
SECOND ROAD
THIRD ROAD
FOURTH ROAD
FIFTH ROAD
LLANDILO TRAIL
SPENCE ROAD
ST MARYS ROAD
FOURTH ROAD
SIRIUS PLACE
BARNES ROAD
FARM ROAD
PARK ROAD
DAVIES STREET
BEN STREET
DROMANA ROAD
CLIFTON ROAD
NEVILLE ROAD
VINE STREET
GRANGE AVENUE
SOUTH STREET
SCHOFIELDS ROAD
SCHOFIELDS ROAD
SCHOFIELDS ROAD



Planning, Industry & Environment

Design Less Interim - Hawkesbury-Nepean Inflow Simulation
1% AEP Water Level Difference
177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

FIGURE D33

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz

Planning, Industry & Environment

Design Less Existing- Local Flow Simulation
20% AEP Water Level Difference Plot

177 Riverstone West Flood Assessment

Legend

- Roads
- Fill Pad Extent
- Riverstone West Precinct Boundary
- Study Extent
- Heritage Buildings Extent
- NSW Cadastre

Water Level Difference (m)

- < -0.50
- -0.50 to -0.20
- -0.20 to -0.10
- -0.10 to -0.05
- -0.05 to -0.01
- -0.01 to 0
- 0 to 0.01
- 0.01 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.50
- > 0.50

Wet Dry Analysis

- Was Wet, Now Dry
- Was Dry, Now Wet

FIGURE D34

1:17,000 Scale at A3

0 0.5 1 km

Cardno

Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz

BANDON ROAD
WINDSOR ROAD
THORPE WAY
CAMBERWELL ROAD
ASHFORD ROAD
NORWOOD ROAD
OTAGO STREET
PERTH STREET
ALBERT STREET
VICTORIA STREET
PRINCES STREET
MELBOURNE ROAD
PUTLAND STREET
LOFTUS STREET
HOBART STREET
SYDNEY STREET
CROWN STREET
EDWARD STREET
WELLINGTON STREET
DURGA CRESCENT
CAMPBELL STREET
GARFIELD ROAD
NICOTERA AVENUE
REGENT STREET
MAHONY ROAD
DINGLE STREET
KING STREET
CHURCH STREET
WOODS STREET
ELIZABETH STREET
HUNTER STREET
ROBINSON STREET
GLADSTONE PARADE
CARLTON STREET
WEST PARADE
GREEK STREET
DENMARK ROAD
Garfield Road West
FARM ROAD
CLEVELAND ROAD
CHAUCER ROAD
MILTON ROAD
YORK ROAD
DELEWARE ROAD
MARSDEN ROAD
PARK ROAD
ROBERT STREET
BARTON STREET
GRAINGER STREET
DAVIES STREET
LAMB STREET
BEN STREET
HERBERT STREET
RICHMOND ROAD
Bandon Road
Planning, Industry & Environment
Design Less Existing- Local Flow Simulation
1% AEP Water Level Difference Plot
177 Riverstone West Flood Assessment
Legend
Roads
Fill Pad Extent
Riverstone West Precinct Boundary
Study Extent
Heritage Buildings Extent
NSW Cadastre
Water Level Difference (m)
< -0.50
-0.50 to -0.20
-0.20 to -0.10
-0.10 to -0.05
-0.05 to -0.01
-0.01 to 0
0 to 0.01
0.01 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.50
> 0.50
Wet Dry Analysis
Was Wet, Now Dry
Was Dry, Now Wet
FIGURE D35
1:17,000 Scale at A3
0
0.5
1 km
Cardno
Map Produced by National Water & Environment (Water)
Date: 2022-2-23| Project: 59918177
Coordinate System: MGA Zone 56
Map: 177_RiverstoneW FA CF_Appendix.qgz

Attachment 10

Conditions of consent (draft)

Proposed development	Integrated Development for site wide bulk earth works in 5 stages including importation of approximately 3.9 million cubic metres of fill material via approximately 340,000 truck movements, removal of existing vegetation, demolition of existing industrial structures, construction of 2 temporary haulage roads (one off Bandon Road and one off Garfield Road West) and the construction of drainage swales and sediment detention basins.
Property description	36 Garfield Road West, Richards (Lot 211 DP 830505)

1 DEFERRED COMMENCEMENT MATTERS

1.1 This Development Consent is not to operate until such time as:

1.1.1 A 3.5m wide easement for stormwater drainage in gross has been created and registered. The creation is pursuant to Section 88B of the *Conveyancing Act, 1919* and registration with Land Registry Services (LRS). The easement shall burden Lot 211, DP 830505 and benefit Blacktown Council. This drainage easement is associated with the existing 1800mm-dia pipeline located opposite Wellington Street.

1.1.2 A 35.0m wide easement for stormwater drainage in gross has been created and registered. The creation is pursuant to Section 88B of the Conveyancing Act, 1919 and registration with Land Registry Services (LRS). The easement shall burden Lot 211, DP 830505 and benefit Blacktown Council. This easement is associated with the Crossing 16 culvert opposite Princes Street.

1.1.3 A 7.5m wide easement in gross benefitting Council over the subject land from the creek to the west to the railway line to the east for the purpose of a pedestrian link through the estate to be provided upon future development of the site.

1.2 Provide written concurrence from TfNSW on the design of entrance to site on Garfield Road West which incorporate the deceleration lane, physical barriers to enforce left in and left out only, and any relocation works required to the existing bus bay.

1.3 Heritage Requirements:

This Development Consent is not to operate until such time as the applicant addresses and resolves the heritage issues identified below:

1.3.1 Conservation Management Plan:

- An up-to-date comprehensive Conservation Management Plan (CMP) shall be prepared and adopted by Council as required by Control 1 in Section 4.9 of Riverstone West Precinct Development Control Plan 2009. In view of the focus of the CMP on conservation of a large number of fragile historic buildings it is recommended that the work be carried out by a multi-disciplinary team with specialist skills and expertise.
- The CMP must be prepared in accordance with the requirements of the NSW Heritage Office, following the guidelines outlined in the JS Kerr Conservation Plan 7th Edition 2013 and Heritage NSW's "Statement of Best Practice for Conservation Management Plans" and considering Heritage Council of NSW's "Guidance on developing a conservation management plan" 2021.

- The CMP shall include a detailed assessment of the heritage significance of the site, its vulnerability to development pressures, and the measures proposed to conserve and manage its heritage values.
- The CMP must include:
    - detailed objectives for the preservation of heritage items identified in Table 11 in Section 4.9 of Riverstone West Precinct Development Control Plan 2009
    - provisions for the conservation, interpretation and management of heritage items
    - provisions for new development with regard to the heritage items in accordance with Figure 29 in Section 4.9 of the Riverstone West Precinct Development Control Plan 2009
    - provisions for further investigation regarding flood mitigation for the cottages in accordance with Appendix C Floodplain Management Strategy.

1.3.2 Statement of Heritage Impact:

- A Statement of Heritage Impact (SHI) shall be prepared as required by Section 1.7.3 Lodgement Requirements of Riverstone West Precinct Development Control Plan 2009. In view of the focus on conservation of a large number of fragile historic buildings, the SHI is to be prepared by an appropriately qualified and suitably experienced heritage professional in accordance with the Environment and Heritage Department of Planning and Environment's "Guidelines for preparing a statement of heritage impact" 2023.
- The SHI must consist of a statement demonstrating the heritage significance of a heritage item, assessment of the impact that proposed development will have on that significance and proposals for measures to minimise that impact.
- The SHI shall assess the potential impacts of the proposed works on the heritage significance of the site and identify any necessary mitigation measures.

1.3.3 Schedule of Conservation Works:

- A Schedule of Conservation Works (the Schedule) shall be prepared, outlining the necessary repairs, restoration, and maintenance activities for the site's heritage assets. In view of the focus on conservation of a large number of fragile historic buildings, the work must be carried out by a suitably experienced heritage architect and submitted to Council for endorsement by Council's heritage advisor
- The Schedule shall be based on a comprehensive assessment of each building and element and include a detailed analysis of its condition, significance, vulnerability and proposed conservation treatments.
- The Schedule shall prioritise conservation works based on the risk of deterioration and the potential for loss of significance.

1.3.4 Staging of Conservation Works:

- Specific timelines for the conservation works and criteria for determining what work is to be undertaken to move from one stage to the next, are to be supplied to Council for endorsement by Council's Heritage Advisor.
- The staging of works shall align with the various stages of the ground profiling of the site:
    - vegetation removal
    - ancillary works consisting of a temporary haulage road, stormwater infrastructure including drainage swales and sediment detention basins
    - demolition of existing structures

- The timelines shall be informed by factors such as the condition of each heritage building and the progress of the development project. Each stage of conservation work is to be tied into a corresponding stage of works for the various components of the development project:
    - Prior to issue of a Construction Certificate for the establishment of site facilities and sediment and erosion control – Complete to Council's satisfaction the endorsed Schedule of Conservation Work 1:
        - temporary protective works required to secure the buildings, make it safe and prevent further deterioration or loss of significant fabric, and
        - essential works which can be completed at this stage, including security for the property and buildings and its fabric.
    - Prior to issue of a Construction Certificate for vegetation removal and demolition - Complete to Council's satisfaction the endorsed Schedule of Conservation Work 2: Complete essential works needing to be done regardless of future use, as informed by investigations and reports called for in SCW 1.
    - Prior to issue of a Construction Certificate for temporary haulage road, earthworks and stormwater management – Complete to Council's satisfaction the endorsed Schedule of Conservation Work 3: Schedule of Essential Adaption Works and complete all works to Council's satisfaction needed to be carried out to provide a finished and adapted building/s.

1.3.5 Additional Heritage Considerations:

- Archaeological Heritage: If there is a potential for archaeological remains on the site, a heritage impact assessment shall be conducted to assess their significance and identify appropriate conservation measures. Input is likely required from a suitably experienced archaeologist.
- Cultural Landscapes: The site's cultural landscapes shall be identified and protected as part of the conservation management plan.
- Intangible Heritage: Any intangible heritage associated with the site, such as oral histories or traditional skills, shall be documented and preserved.

1.4 All of the requirements listed in the above condition must be completed within 24 months of the date of this "Deferred Commencement" consent. Should these matters not be completed to Council's satisfaction within this time period, this "Deferred Commencement" consent will lapse.

2 ADVISORY NOTES

2.1 Terminology

2.1.1 Any reference in this document to a "consent" means a "development consent" defined in the Environmental Planning and Assessment Act 1979.

2.1.2 Any reference in this consent to a Construction, Compliance**,** Occupation or Subdivision Certificate is a reference to a certificate as defined by Section 6 of the Environmental Planning and Assessment Act 1979.

2.2 Scope of Consent

2.2.1 The granting of this consent does not imply or confer compliance with the requirements of the Disability Discrimination Act 1992. The applicant is advised to investigate any liability that may apply under that Act. The current suite of Australian Standard 1428 - Design for Access and Mobility, should be consulted for guidance. The prescriptive requirements of Part 1 of the Standard apply to certain buildings requiring development consent.

2.3 Other Approvals

2.3.1 The applicant's attention is drawn to the need to obtain separate appropriate approval for any ancillary development not approved by this consent, including:

(a) the removal of any tree(s) not indicated on the approved plans, and

(b) any fence, retaining wall, land excavation or filling, advertising structure or other development not being exempt development, and

(c) demolition of any existing buildings and associated structures in accordance with the requirements of the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, and

(d) the installation of vehicular footway crossings servicing the development, and

(e) the use of any crane that swings over public air space. If a crane is used to construct this development that swings over public air space, separate Council approval under the Roads Act 1993 and Local Government Act 1993 is required.

2.4 Services

2.4.1 The applicant is advised to consult with:

(a) Sydney Water Corporation Limited

(b) Energy provider

(c) Jemena Gas

(d) The relevant local telecommunications carrier

regarding any requirements for the provision of services to the development and the location of existing services that may be affected by proposed works, either on the land or on the adjacent public road(s).

All approved plans should be submitted to Sydney Water Tap In, to determine whether the development will affect Sydney Water's sewer and water mains, stormwater drains and/or easements and if further requirements need to be met. The plans are to be appropriately stamped and all amended plans will require re-stamping. For further information go to: www.sydneywater.com.au, then follow the "Developing Your Land" link or telephone 1300 082 746 for assistance.

Sydney Water may also require the applicant to obtain a Trade Waste Approval as part of the operation of the approved development. Enquiries should be made to ascertain the Sydney Water requirements for the eventual operation of the approved use.

2.4.2 Prior to any demolition works, all services or utilities should be disconnected in consultation with the relevant service provider.

2.4.3 Underground assets may exist in the area that is subject to your application. In the interests of health, safety, and in order to protect damage to third party assets, please contact Dial Before You Dig at www.1100.com.au or telephone on 1100 before excavating or erecting structures (this is the law in NSW). If alterations are required to the configuration, size, form or design of the development upon contacting the Dial Before You Dig service, an amendment to the development consent (or a new development application) may be necessary. Individuals owe asset holders a duty of care that must be observed when working in the vicinity of plant or assets. It is the individual's responsibility to anticipate and request the nominal location of plant or assets on the relevant property via contacting the Dial Before You Dig service in advance of any construction or planning activities.

2.4.4 Telstra (and its authorised contractors) are the only companies that are permitted to conduct works on Telstra's network and assets. Any person interfering with a facility or installation owned by Telstra is committing an offence under the Criminal Code Act 1995 (Cth) and is liable for prosecution. Furthermore, damage to Telstra's infrastructure may result in interruption to the provision of essential services and

significant costs. If you are aware of any works or proposed works which may affect or impact on Telstra's assets in any way, you are required to contact: Telstra's Network Integrity Team on phone number: 1800 810 443.

2.4.5 The developer shall be responsible for all public utility adjustment/relocation works, necessitated by the above work and as required by the various public utility authorities and/or their agents.

2.5 Identification Survey

2.5.1 The applicant is advised to obtain an identification survey from a registered surveyor to ascertain the correct location of the property boundaries, and to ensure the development does not encroach upon adjoining properties.

2.6 Engineering Notes

2.6.1 All works requiring approval under the *Roads Act 1993* (except standard vehicular crossings) or *Local Government Act 1993* must be approved PRIOR to the development application being operational.

2.7 Payment of Engineering Fees

2.7.1 If the applicant wishes for Council to issue the Construction Certificate or Subdivision Works Certificate as nominated in the 'Prior to Construction Certificate/Subdivision Works Certificate please:

- Complete application form
- Submit all relevant plans produced by a suitably qualified person and in accordance with Councils Standards.

2.8 Road Damage

2.8.1 The cost of repairing any damage caused to Council's assets in the vicinity of the land as a result of the development works shall be met in full by the applicant/developer.

2.9 Imported Fill Material

2.9.1 The only fill material that may be received at the development site is:

(a) virgin excavated natural material (within the meaning of the Protection of the Environment Operations Act 1997).

2.10 Endeavour Energy Requirements

2.10.1 Full compliance with the relevant requirements contained in Endeavour Energy's standard conditions for development applications dated August 2023 and included at Annexure A of this consent is required.

2.11 Ampol Requirements

2.11.1 All actions are to be completed as detailed in the Encroachment Safety Management Study by Asset Engineering Solutions dated 23 June 2023 and the variations outlined in PDF 1 & 2 held at Council Record Number D23/586720

2.12 Department of Planning and Environment-Water

2.12.1 Full compliance with the requirements contained in Department of Planning and Environment-Water's General Terms of Approval dated 23 January 2024 and included at Annexure B of this consent is required.

2.13 Jemena Requirements

2.13.1 Full compliance with the requirements contained in Jemena's comments dated 18 October 2023 and included at Annexure C of this consent is required.

2.14 Sydney Water Requirements

2.14.1 Full compliance with the requirements contained in Sydney Water's comments dated 15 May 2024 and included at Annexure D of this consent is required.

2.15 Transport for NSW (Sydney Train's) Requirements

2.15.1 Full compliance with the requirements contained in Transport for NSW (Sydney Train's) comments dated 23 May 2024 and included at Annexure E of this consent is required.

2.16 TransGrid Requirements

2.16.1 Full compliance with the requirements contained in TransGrids's comments dated 25 March 2024 and included at Annexure F of this consent is required.

2.17 Transport for NSW Requirements

2.17.1 Full compliance with the requirements contained in Transport for NSW comments dated 5 April 2024 and included at Annexure G of this consent is required. If the concurrence of Transport for NSW required to activate this consent changes the requirements of the 5 April 2024 comments, the requirements in the most recent letter will apply.

3 GENERAL

3.1 Scope of Consent

3.1.1 The proposed development is to be in accordance with the drawings/details as referenced in engineering Condition 8.1.2, subject to compliance with any other conditions of this consent.

3.1.2 The development is approved to take place in 5 sequential stages as per the approved Staging Plan Drawing Number 110847-03-CD500 Revision F dated 1 May 2024.

3.2 Suburb Name

3.2.1 The land the subject of this consent is known to be located in the following suburb. This suburb name shall be used for all correspondence and property transactions:

Suburb: Richards

3.3 Engineering Matters

3.3.1 Design and Works Specification

3.3.1.1 All engineering works required by this consent must be designed and undertaken in accordance with the relevant aspects of the following documents except as otherwise authorised by this consent:

a) Blacktown City Council's Works Specification - Civil (Current Version)

b) Blacktown City Council's Engineering Guide for Development (Current Version)

c) Blacktown City Council Development Control Plan (Current Version) including Part J – Water Sensitive Urban Design and Integrated Water Cycle Management

d) Blacktown City Council Growth Centre Precincts Development Control Plan

e) Blacktown City Council On Site Detention General Guidelines, S3QM online tool and standard drawing A(BS)175M

3.3.2 The Applicant is required to submit to Council, Bonds and/or Contributions for works associated with the development in conjunction with the civil engineering works required to be constructed as part of this development. Works may include:

- Maintenance of the construction works – Crossing 16

These matters will be individually addressed within the consent.

Note: A bond release inspection fee will apply.

3.3.3 Prior to release of any bond securities held by Council for civil engineering works, the payment of a bond release inspection fee in accordance with Council's Goods and Services Pricing Schedule must be made.

3.3.4 Written notice must be provided to adjacent properties, at least 5 days prior to works commencing, where works are approved by this consent and located within Council controlled lands (i.e. Roads, drainage reserves, parks, etc.)

A copy of this notice must be provided to Council's Co-ordinator of Engineering Approval.

3.4 Other Necessary Approvals

3.4.1 A separate application will be required for the following approvals, under the Local Government Act 1993 and/or the Roads Act 1993.

- Concrete box culverts (Crossing 16) and associated catch drains
- Vehicular Crossings
- Works on or occupation of existing public roads (Not including works covered by a Roads Act Approval).

4 PRIOR TO DEMOLITION WORKS

4.1 Safety/Health/Amenity

4.1.1 Security fencing shall be provided around the perimeter of the demolition site to prevent unauthorised entry to the site. Notices complying with AS 1319-1994 and displaying the words "DANGER - DEMOLITION IN PROGRESS", or similar message shall be fixed to the fencing at appropriate places to warn the public.

4.1.2 A sign shall be erected in a prominent position on the land indicating the name of the person in charge of the work site and a telephone number at which that person may be contacted outside working hours.

4.1.3 Should the demolition work:

(a) be likely to be a danger to pedestrians in a public place or occupants of any adjoining land or place,

(b) be likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or

(c) involve the enclosure of a public place,

4.1.4 A hoarding or protective barrier shall be erected between the work site and the public place or adjoining land or place. Such hoarding or barrier shall be designed and erected in accordance with Council's current Local Approvals Policy under the Local Government Act 1993.

4.1.5 Where necessary, an awning shall be erected, sufficient to prevent any substance from, or in connection with, the work falling into the public place or adjoining land or place.

4.1.6 The hoarding, awning or protective barrier shall be effectively illuminated between sunset and sunrise where it may be hazardous to any person in the public place.

4.1.7 Toilet facilities shall be provided on the land at the rate of 1 toilet for every 20 persons or part thereof employed at the site.

Each toilet provided shall be:

(a) a standard flushing toilet, and

(b) connected:

(i) to a public sewer, or

(ii) if connection to a public sewer is not practicable, to an accredited sewage management facility provided by the Council, or

(iii) if connection to a public sewer or an accredited sewage management facility is not practicable to some other sewage management facility approved by Council.

4.1.8 Soil erosion and sediment control measures shall be provided in accordance with Council's Soil Erosion and Sediment Control Policy.

4.2 Tree Protection

4.2.1 Unless specific approval is given in this consent, no trees, located within the subject allotment and/or within the Council Road Reserve (verge/nature strip) or any adjoining public open space, may be removed or pruned during demolition works.

4.2.2 Any tree not indicated to have consent for removal shall be effectively protected against damage as specified in the Tree Protection Plan.

4.2.3 Tree Protection measures must be installed before Demolition work begins.

4.3 Other Matters

4.3.1 The Applicant is to advise all adjoining neighbours, and those located opposite the subject development site, by letter, of their intention to commence demolition work. The letter shall be distributed at least 2 days prior to the intended work and include the following information:

- date/s, hours and duration of the works.
- contact name and phone number of the applicant
- contact name and phone number of the licensed demolisher
- SafeWork NSW contact number 131050, and email address contact@safework.nsw.gov.au

4.4 Traffic Management Plan

4.4.1 Prior to the demolition works, an appropriately qualified person is to prepare a comprehensive Traffic Management Plan (TMP). The TMP should document the controls and procedures for vehicles accessing the site. This TMP is to be maintained on-site and issued to every contractor or truck driver accessing the site and the principal issues to be documented are:

- the prescribed route for access (i.e. Garfield Road West and Bandon Road)
- the prescribed route for egress (ie. Bandon Road directly to Windsor Road)
- the hours available for access (i.e. 7.00am - 6.00pm Monday to Friday and 8.00am 1.00pm Saturday with no access on Sunday or Public Holidays)
- the co-ordination and communication to avoid any “bunching” of arriving or departing truck movements
- the maximum truck speeds within the site and on Bandon Road particularly approaching and departing the railway level crossing
- the prohibition of movement onto the level crossing unless there is adequate space available to “clear” the level crossing
- the prohibition of movements on Railway Parade and Garfield Road East
- drivers requirement to comply with the “7.0 Driver Code of Conduct, Monitoring & Review described in Traffic Impact Assessment dated April 2023 prepared by ttpa.
- the onsite traffic control and supervision of access and egress points for all truck movements

The final, approved TMP shall be submitted to Council for its records.

5 DURING DEMOLITION WORKS

5.1 Safety/Health/Amenity

5.1.1 Security fencing shall be maintained around the perimeter of the demolition site to prevent unauthorised entry to the site at all times during the demolition works. Notices lettered in accordance with AS 1319-1994 and displaying the works "DANGER - DEMOLITION IN PROGRESS", or similar message shall be maintained on the fencing at appropriate places to warn the public.

5.1.2 A sign shall be maintained in a prominent position on the land indicating the name of the person in charge of the work site and a telephone number at which that person may be contacted outside working hours.

5.1.3 Any hoarding or protective barrier required to be erected between the work site and the public place on adjoining land or place shall be maintained in an effective condition.

5.1.4 The required toilet facilities shall be maintained on the land at the rate of 1 toilet for every 20 persons or part of 20 persons employed at the site.

5.1.5 Soil erosion and sediment control measures shall be maintained in accordance with Council's Soil Erosion and Sediment Control Policy.

5.1.6 Any excavation and/or backfilling associated with the demolition works shall be executed safely and in accordance with appropriate professional standards, with any excavation properly guarded and protected to prevent them from being dangerous to life or property.

5.1.7 All demolition work and handling of materials shall be in accordance with Australian Standard 2601-2001 (Demolition of Structures) and all applicable SafeWork NSW requirements including the Code of Practice for the Safe Removal of Asbestos" – National Occupational Health and Safety Commission:2005 (if applicable).

5.1.8 All plant and equipment used on the land shall be operated by a competent person. Cranes used for hoisting and lowering of materials shall comply with AS 1418.1 and AS 1418.5 and be fitted with a load indicator and hoist limited device.

5.1.9 A valid public liability insurance policy of at least $10,000,000 shall be maintained throughout the demolition works.

5.1.10 Demolished materials, plant, equipment and the like shall not be stored or placed at any time on Council's footpath, roadway or any public place.

5.1.11 Should any excavation associated with the demolition works extend below the level of the base of the footings of a building on an adjoining allotment of land, including a public road or place, the person causing the excavation to be made:

(a) must preserve and protect the building from damage, and

(b) if necessary, must underpin and support the building in an approved manner, and

(c) must, at least 7 days before excavating below the level of the base of the footings of a building on an adjoining allotment of land, give notice of intention to do so to the owner of the adjoining allotment of land and furnish particulars of the excavation to the owner of the building being erected or demolished.

5.1.12 The owner of the adjoining allotment of land is not liable for any part of the cost of work carried out for the purposes of this condition, whether carried out on the allotment of land being excavated or on the adjoining allotment of land.

5.1.13 All previously connected services are to be appropriately disconnected as part of the demolition works. The applicant is obliged to consult with the various service authorities regarding their requirements for the disconnection of services.

5.1.14 The demolisher has an obligation to ensure that the adjoining buildings and property are not damaged.

5.1.15 Any soils requiring excavation, onsite reuse and/or removal must be classified in accordance with “Waste Classification Guidelines Part 1: Classifying Waste” NSW EPA (2014)

5.2 Nuisance Control

5.2.1 Any noise generated during demolition shall not exceed those limits specified in the Protection of the Environment Operations Act 1997 and shall be limited to between 7 am and 6 pm, Monday to Friday, and 8 am to 1 pm, Saturday, with no demolition work being undertaken on Sundays or public holidays.

5.3 Waste Management

5.3.1 The waste material sorting, storing and re-use requirements of the approved Waste Management Plan and Council's Site Waste Management and Minimisation Development Control Plan shall be implemented during the course of the demolition works.

5.4 Tree Protection

5.4.1 The measures required to effectively protect trees on the land shall be maintained throughout the demolition works.

5.5 Hours of Operation

5.5.1 The hours of operation are limited to between 7.00am to 6.00pm, Mondays to Fridays; 8.00am to 1pm, Saturdays; and no such work to be undertaken at any time on Sundays or public holidays.

5.5.2 If any other activities are proposed to be undertaken outside of these hours, Council is to be notified and approval may be required depending on the activity.

5.6 Traffic Management

5.6.1 The applicant must comply with the approved traffic management plan during demolition works.

6 COMPLETION OF DEMOLITION WORKS

6.1 Final Inspection

6.1.1 A final inspection is required to ascertain compliance with the condition of approval prior to the release of the road damage deposit

6.2 Hazardous Materials and Waste

6.2.1 A clearance certificate/statement prepared in accordance with the National Code of Practice for the Safe Removal of Asbestos shall be issued by an independent licensed asbestos assessor or the competent demolition contractor who holds an appropriate Demolition Licence issued by the SafeWork NSW under the provisions of the Work Health and Safety Act 2011 (and any relevant Regulation there under). The certificate/statement must state that the pre-existing building/s was/were demolished in accordance with the conditions and terms of that licence, Australian Standard 2601-2001 – The Demolition of Structures and that any asbestos removal has been carried out in accordance with NOHSC-2002 – Code of Practice for Safe Removal of Asbestos. A copy of the clearance certificate/statement shall be lodged with Council.

6.2.2 Submit to Council the receipt from the trade waste depot for disposal of the asbestos from the removal/demolition of the existing buildings.

7 PRIOR TO CONSTRUCTION CERTIFICATE (GENERAL)

7.1 DA Plan Consistency

7.1.1 A Construction Certificate for the proposed development shall only be issued when the accompanying plans, specifications and/or details are consistent with the approved Development Application design plans.

7.2 Site Works and Drainage

7.2.1 Any required retaining wall(s) and/or other effective method to retain excavated or filled ground (not being Exempt Development under an environmental planning instrument), together with any associated groundwater drainage system, shall be designed by an appropriately qualified person. Details of such site works shall accompany a Construction Certificate.

7.3 Footpath/Road Condition Assessment Fee

7.3.1 A footpath/road condition assessment fee is to be paid prior to the issue of any Construction Certificate. The applicable fee will be charged in accordance with Council's Goods and Services Pricing Schedule.

Council will undertake an initial inspection of civil assets outside the development site. The applicant will be held liable for any damage arising from construction activities. Council will undertake reinstatement works and recover the costs from the applicant, which will be charged in accordance with Council's current Goods and Services Pricing Schedule in effect at the time of the work.

7.4 Special Infrastructure Contributions

7.4.1 The applicant is to make a special infrastructure contribution in accordance with any determination made by the Minister administering the Environmental Planning and Assessment Act 1979 under Section 7.23 of that Act that is in force on the date of the consent, and must obtain a certificate to that effect from the Department of Planning, Industry and Environment.

More information

Information about the special infrastructure contribution can be found on the Department of Planning and Environment's website: http://www.planning.nsw.gov.au/Policy-and-Legislation/Infrastructure/Infrastructure-Funding

7.5 Groundwater Management

7.5.1 A Groundwater Management Report for the proposed works is to be prepared by a suitably qualified consultant and submitted to Council.

7.6 Tree Management

7.6.1 The applicant is to provide our Greenspace Services Section with an Arboricultural Impact Assessment and Tree Management Plan for all trees within 20m of the edge of the bulk earthworks. Additionally, all trees within the bulk earthworks must also be identified for clarity in the consent for tree removal.

7.6.2 Consent for tree removal will be assessed prior to to issue of a Construction Certificate.

7.6.3 All documentation, including plans, must be amended to reflect tree work approved in these conditions of consent. All trees shown on the plans are required to be numbered in accordance with an Arboricultural Impact Assessment Report. All trees, approved for removal, are to be identified with dashed circles. All trees, conditioned to be retained, are to be identified with a solid circle and have their Tree Protection Zone, compliant with the calculations of AS4970:2009, clearly plotted around the tree

7.6.4 Prior to issue of a Construction Certificate, a Project Arborist is to be appointed for the duration of the works on site. The Project Arborist must hold a minimum qualification of Australian Qualification Framework (AQF) Level 5 in arboriculture and have Public Liability Insurance (minimum $20 million) for the duration of the project. The name and contact details of the Project Arborist are to be notified to Council prior to the commencement of any works on site, including demolition.

7.6.5 Trees proposed to be removed on site are not approved for removal until a Construction Certificate is issued. Tree removal assessment will be undertaken before the Construction Certificate is issued.

7.7 Natural Areas Requirements

7.7.1 An Arboricultural Impact Assessment and Tree Protection Plan for the hollow bearing trees in adjacent Sydney water land at the base of the existing steep batter on site is to be submitted by the proponent for Council's consideration. These and other neighbouring Lot trees must be protected from impacts of the proposed earthworks on site.

7.7.2 Any infrastructure (e.g., batter, retaining wall, drainage basins etc.) that is required to support the development shall not be located within land zoned as C2 (Environmental Conservation). Details are to accompany the Construction Certificate.

7.7.3 Batters are not to exceed a grade of 1V:5H and are to be stabilised with topsoil, native turf or hydroseed and native vegetation. Details are to accompany the Construction Certificate.

7.8 Threatened species credit retirement

7.8.1 The applicant shall retire the class and number of species credits in Table (1) to offset the impacts of the development.

Table (1): Ecosystem credits required to be retired - like for like

Impacted species credit species	Number of species credits	IBRA sub-region
Fauna: 4025 Myotis Macropus/ Southern Myotis	1	Anywhere in NSW

The requirement to retire credits outlined in Table (1) may be satisfied by payment to the Biodiversity Conservation Trust of an amount equivalent to the class and number of ecosystem credits, as calculated by the Biodiversity Offsets Payment Calculator.

A link to the Biodiversity Conservation Trust website, for directions on payment can be found at Pay into the fund to offset development | BCT (nsw.gov.au). You can also contact the BCT on 1300 992 688 or info@bct.nsw.gov.au

Evidence of the retirement of credits or payment to the Biodiversity Conservation Trust in satisfaction of Table (1) requirements shall be provided to Council prior to earthworks commencing.

7.9 Submission and approval of a Vegetation Management plan

7.9.1 A Vegetation Management Plan (VMP) comprising of a detailed site plan and an accompanying report in a legible format prepared by a person who has qualifications and experience in respect of ecology is to be submitted by the proponent to Council for approval. The VMP is to be fully costed with a timeline of activities over 5 years detailing actions proposed to mitigate the impacts of the proposal to fauna and native vegetation, with a focus on the C2 and RE2 zones, the Eastern Creek riparian corridor and those areas with high biodiversity value. The VMP is to have a commencement date at the time of, or in advance of, bulk earthworks commencement. It must include full details of the actions to be undertaken in respect of the following:

- measures to mitigate biodiversity impacts prior to and during vegetation clearing and on-site earthworks as proposed;

- strict erosion control strategies such as sediment fencing, sediment control traps, jute matting and a schedule of native planting for protection of Eastern Creek and other waterways;
- protection of adjacent high-quality areas of CEEC vegetation and hollow bearing trees, particularly in neighbouring Sydney Water land;
- weed control measures across the bulk earthworks boundaries that cover weed removal, storage and disposal to reduce the spread of seed or other propagules;
- measures to remove and control the dominant weed species along the 5km site boundary to Eastern Creek on site including Coral Trees (Erythrina x sykesii), Privet (Ligustrum sp.), Kikuyu (Cenchrus clandestinus), Paspalum (Paspalum dilatatum), Rhodes Grass (Chloris gayana), African Lovegrass (Eragrostis curvula), Blackberry (Rubus aggregatus), Crofton Weed (Ageratina Adenophora) and Pigeon Grass (Setaria pumila);
- measures to restore and reconnect riparian vegetation tracts along the 5 km site boundary to Eastern Creek on site which were identified in the ecology reports as important to streambank stabilisation and fauna movements in the area;
- emplacement of salvaged habitat resources from clearing into the retained riparian zones e.g. logs, as well as enhancement nestboxes appropriate to locally occurring fauna; and
- stabilisation of the entire bulk earthworks boundary e.g. with a native hydroseed mix.

The VMP is to be prepared in accordance with BCC Vegetation Management Plan Guidelines 2019.

7.10 Bond on Vegetation Management plan

7.10.1 Once the VMP is approved, a bond will be calculated at 150% of the cost of implementing the VMP to be provided to Council as security. The bond shall be returned to the proponent in stages following verification in writing by the Project Ecologist that the performance targets and actions related to restoration works within the VMP have been met. Council may conduct inspections to support this.

7.11 Nomination of a Project Ecologist

7.11.1 A Project Ecologist for implementing, monitoring and reporting on the VMP, and to be present for and report on dam dewatering works and tree clearing works, must be nominated to Council with contact details provided prior to earthworks commencing.

7.12 Dust Control

7.12.1 A Construction Air Quality Management Plan is to be prepared by a suitably qualified consultant and submitted to Council for approval. It is to incorporate the dust control measures in the document held at Council's Record number D23/322012. It must also include specific dust monitoring and control strategies for each stage of construction.

7.13 Heritage matters

7.13.1 If the historic cottages are to remain unoccupied, security must be maintained throughout that period of non-occupation to ensure that the buildings are not damaged by either fire and/or vandalism and that in the event that any damage occurs, full restoration of the house/s will be required prior to the release of any Construction Certificate.

7.14 Traffic Management Plan

7.14.1 Prior to the issue of a Construction Certificate, an appropriately qualified person is to prepare a comprehensive Traffic Management Plan (TMP). The TMP should document the controls and procedures for vehicles accessing the site. This TMP is to be

maintained on-site and issued to every contractor or truck driver accessing the site and the principal issues to be documented are:

- the prescribed route for access (i.e. Garfield Road West and Bandon Road)
- the prescribed route for egress (ie. Bandon Road directly to Windsor Road)
- the hours available for access (i.e. 7.00am - 6.00pm Monday to Friday and 8.00am 1.00pm Saturday with no access on Sunday or Public Holidays)
- the co-ordination and communication to avoid any “bunching” of arriving or departing truck movements
- the maximum truck speeds within the site and on Bandon Road particularly approaching and departing the railway level crossing
- the prohibition of movement onto the level crossing unless there is adequate space available to “clear” the level crossing
- the prohibition of movements on Railway Parade and Garfield Road East
- drivers requirement to comply with the “7.0 Driver Code of Conduct, Monitoring & Review described in Traffic Impact Assessment dated April 2023 prepared by ttpa.
- the onsite traffic control and supervision of access and egress points for all truck movements

The final, approved TMP shall be submitted to Council for its records.

7.15 Construction Environmental Management Plan

7.15.1 A Construction Environmental Management Plan (CEMP) shall be submitted to show the staging of works to set out how clearing will be minimised, vehicle access roads, stockpiling areas, tree protection barriers, operations machinery, cleaning protocols, hours of operation, noise and vibration control, salinity management, a procedure for controlling the introduction and spreading of weeds and pathogens, including hygiene protocols and the arrangements for monitoring; erosion and sediment control and dust control. The Plan must be submitted to Council for approval.

The applicant must include the following:

(a) Construction Traffic Management Plan

(b) Erosion and Sediment Control Plan

(c) Construction Noise Management Plan

(d) Unexpected Finds Protocol

(e) Community Consultation and Complaints Handling

8 PRIOR TO CONSTRUCTION CERTIFICATE (ENGINEERING)

8.1 General

8.1.1 All relevant conditions within the ‘Prior to Construction Certificate’ section of this consent shall be satisfied before any Construction Certificate can be issued.

8.1.2 The engineering drawings referred to below are not for construction. The Construction Certificate drawings shall be generally in accordance with the approved drawings and conditions of consent. Any significant variation to the design shall require a section 4.55 application

Construction Certificate plans shall be generally in accordance with the following drawings prepared by J. Wyndham Prince and relevant Consent conditions:

CIVIL PLAN INDEX				
PLAN NO.	PLAN NAME	REV	DATE	Council Trim
110847-03-CD001	COVER SHEET	D	25/03/24	D24/233705
110847-03-CD002	INDEX, LEGEND & GENERAL NOTES	E	1/05/24	D24/233705
110847-03-CD003	OVERALL SITE PLAN	D	25/03/24	D24/233705
110847-03-CD004	HAUL ROAD TYPICAL SECTIONS	A	27/04/23	D24/233705
110847-03-CD010	CUT & FILL PLAN SHEET 1	C	1/05/24	D24/233705
110847-03-CD011	CUT & FILL PLAN SHEET 2	D	25/03/24	D24/233705
110847-03-CD015	SITE SECTIONS SHEET 1	B	31/10/23	D24/233705
110847-03-CD016	SITE SECTIONS SHEET 2	B	31/10/23	D24/233705
110847-03-CD017	SITE SECTIONS SHEET 3	C	31/10/23	D24/233705
110847-03-CD018	SITE SECTIONS SHEET 4	B	31/10/23	D24/233705
110847-03-CD040	DEMOLITION PLAN SHEET 1	A	27/04/23	D24/233705
110847-03-CD041	DEMOLITION PLAN SHEET 2	B	16/06/23	D24/233705
110847-03-CD050	ENGINEERING PLAN SHEET 1	C	1/05/24	D24/233705
110847-03-CD051	ENGINEERING PLAN SHEET 2	B	31/10/23	D24/233705
110847-03-CD052	ENGINEERING PLAN SHEET 3	D	1/05/24	D24/233705
110847-03-CD053	ENGINEERING PLAN SHEET 4	D	25/03/24	D24/233705
110847-03-CD200	CATCHMENT PLAN SHEET 1	B	31/10/23	D24/233705
110847-03-CD201	CATCHMENT PLAN SHEET 2	D	25/03/24	D24/233705
110847-03-CD300	CULVERT DETAILS	C	1/05/24	D24/233705
110847-03-CD301	CULVERT TAILOUT DETAILS (EXCLUDING BEBO ARCH)	B	10/10/24	D24/574538
110847-03-CD305	CATCH DRAIN DETAILS	C	18/10/24	D24/574538
110847-03-CD400	SOIL & WATER MANAGEMENT PLAN SHEET 1	A	27/04/23	D24/233705
110847-03-CD401	SOIL & WATER MANAGEMENT PLAN SHEET 2	B	31/10/23	D24/233705
110847-03-CD402	SOIL & WATER MANAGEMENT PLAN SHEET 3	C	1/05/24	D24/233705
110847-03-CD403	SOIL & WATER MANAGEMENT PLAN SHEET 4	D	25/03/24	D24/233705
110847-03-CD405	SOIL & WATER MANAGEMENT NOTES	A	27/04/23	D24/233705
110847-03-CD406	SEDIMENT BASIN CALCULATIONS SHEET 1	A	27/04/23	D24/233705
110847-03-CD407	SEDIMENT BASIN CALCULATIONS SHEET 2	A	27/04/23	D24/233705
110847-03-CD500	STAGING PLAN	F	1/05/24	D24/233705
110847-03-CD510	SITE ANALYSIS PLAN	D	1/05/24	D24/233705

8.1.3 The following items are required to be addressed on the Construction Certificate plans:

i. Maximum design fill levels along Crossing 16 shall be nominal RL18.0mAHD.

ii. Batter slopes shall be in accordance with Figure 21: Location of embankment batters in Riverstone West DCP August 2009.

iii. Longitudinal Section Culvert Crossing A in sheet CD300 rev C is redundant.

iv. The details of the tailout must be amended to match the box culvert, including the finished level, long-section and cross section of the design.

8.2 **Local Government Act Requirements**

8.2.1 Under Section 68 of the Local Government Act 1993 an approval for engineering work is required. These works include but are not limited to the following:

- Crossing 16,

- Catch drain 1,
- Catch drain 2,
- Surcharge drain,
- The connection between Riverstone Parade to Crossing 16, and
- The maintenance track leading into Crossing 16.

which are to be generally in accordance with the Sitewide Civil Work plan prepared by J. Wyndham Prince, Project No. 110847-001, Rev F and dated 1/05/2024. (Council's TRIM ref: D24/545756)

Detailed drainage plans are to be prepared by a chartered professional engineer (CPEng) (Civil / Environmental Engineer) who has membership to Engineers Australia.

The Section 68 application must include the following:

- Geotechnical report of the soil foundation under the Crossing 16.
- Structural design and certificate for the Crossing 16 both the foundation and structure. Certification shall be from a suitably qualified practising structural engineer.
- DRAINS model to confirm the detail of the Crossing 16 including the catchment area and flow rate.
- The crossing sections of the Crossing 16 including the subsoil layers, back filling, trenching etc.
- The connection between the catch drain 1 & 2 into the Crossing 16.
- Details of the discharge energy dissipating system at the Crossing 16 outlet.
- The staging plan of the installation of the Crossing 16.

An approval of stormwater drainage and associated works under the Section 68 of the Local Government Act 1993 issued by Council shall be obtained prior to issue of a Construction Certificate.

8.3 Roads Act Requirements

8.3.1 Under Section 138 of the Roads Act 1993 an approval for engineering work is required. These works include but are not limited to the following:

- Vehicular crossing on Bandon Road including area to make smooth connection with Haul Road 1,
- Vehicular crossing on Garfield Road West,
- Bandon Road upgrade between Haul Road 1 and TransGrid Access
    - The length of BANDON ROAD to be upgraded is approximately 480.00 meters between proposed access (Haul Road 1) and TransGrid Access.
    - The extent of upgraded works on Bandon Road shall be designed and constructed based on total traffic loading during construction and existing pavement assessment. Detailed design calculation of Bandon Road upgrade works shall be submitted to Council for the approval.

8.4 Other Engineering Requirements

8.4.1 If the estimated cost is $250,000 or greater proof of long service levy payment is required.

8.4.2 Any ancillary works undertaken shall be at no cost to Council.

8.4.3 Submit written permission from the affected property owner for any works proposed on adjoining land.

8.4.4 Submit written evidence from Transport for NSW indicating compliance with all necessary requirements.

8.4.5 Submit written evidence from Sydney Water indicating compliance with all necessary requirements.

8.5 Erosion and Sediment Control

8.5.1 Provide a sediment and erosion control plan in accordance with Council's Soil Erosion and Sediment Control Policy and Engineering Guide for Development.

8.6 Vehicular Crossings

8.6.1 Plans to demonstrate the construction an industrial and commercial vehicular crossing to Council's standard A(BS)103S.

9 PRIOR TO CONSTRUCTION CERTIFICATE (ENVIRONMENTAL HEALTH)

9.1 Environmental Health Matters

9.1.1 Engage a suitably qualified environmental consultant to prepare a Long-Term Environmental Management Plan (LTEMP) for the ongoing protection, maintenance and management of the asbestos containment cell in compliance with all applicable laws and industry best practice.

9.1.2 The LTEMP is to confirm the location of the existing containment cell on-site.

9.1.3 The LTEMP is to include all measures necessary or appropriate to ensure the effective containment within the containment cell of all substances which are proposed for inclusion within the containment cell in perpetuity, and to protect the health of the environment and site users, and to ensure the suitability of the site for its proposed use.

9.1.4 The LTEMP is to be prepared to the satisfaction of a NSW EPA Accredited Site Auditor and Council.

9.1.5 Prior to commencement of works, evidence is to be provided to Council that a Section 88B Instrument and Deposited Plan which satisfy the following requirements and which have been approved by Council have been registered on title to the site of the Containment Cell:

- the Section 88B Instrument must be accompanied by a Deposited Plan for the site which identifies the Containment Cell with clear delineation and refers to the Section 88B Instrument in connection with the Containment Cell;
- the Section 88B Instrument must annex a copy of the LTEMP;
- the Section 88B instrument must contain a Public Positive Covenant which:
  - identifies that the site contains the Containment Cell and is subject to the LTEMP;
  - requires the registered proprietor (and its successors) to:
    - implement the LTEMP in full and manage the site in accordance with the LTEMP;
    - ensure that the Containment Cell is secure at all times and there is no leak, leaching or escape of the contents of the Containment Cell or any other failure of the Containment Cell;
    - keep the Containment Cell and the surface of the land on which the Containment Cell is located free from rubbish and debris;

        - ensure that the Containment Cell is accessible only by the registered proprietor for inspection, maintenance and repair purposes in accordance with the LTEMP;
        - remediate and make good any contamination or migrating contamination, loss or damage occurring in connection with the use or operation of the Containment Cell, or as a result of any failure to comply with the LTEMP, to a standard acceptable to Council;
        - upon becoming aware of an actual or likely non-compliance with the terms of the covenant, or upon reasonably suspecting one, inform Council in writing immediately, provide any information Council requests and do all things necessary to stop the non-compliance from occurring or continuing;
        - for the purposes of ensuring observance of the covenant, permit Council to enter and remain on the site and to take such other steps as Council considers appropriate, including inspecting the condition of the Containment Cell and the area around it;
        - comply with the terms of any written notice issued by Council which requires the registered proprietor to do something which Council (acting reasonably) considers is necessary to ensure compliance with the terms of the covenant within the time frame specified in that notice and provide Council with such evidence of compliance, or progress in complying, as Council (acting reasonably) requests;
    - acknowledges that, in the event that the registered proprietor (or any successor) fails to comply with the terms of any such written notice, Council may:
        - enter and remain on the site with all necessary equipment and carry out any works and do such other things as Council considers reasonable to comply with that notice;
        - recover from the registered proprietor any cost, loss or expense which Council reasonably incurs in doing so, including legal costs and disbursements on an indemnity basis;
    - provides that the registered proprietor will be responsible for and indemnifies Council against all liabilities (including all costs, expenses, losses, damages and other liabilities of any kind) which Council suffers or incurs as a consequence of any breach of the terms of the covenant;
    - provides that the registered proprietor may, subject to complying with all applicable laws, amend the LTEMP with the prior written consent of Council, and that any amendment of the LTEMP will not be effective until a copy of the amended LTEMP, as approved by Council, is registered on title to the site. Evidence of the registration of any amended LTEMP is to be immediately provided to Council;
    - cannot be released, varied or modified without the consent of Council; and
    - complies with any other requirements of, and contains any other terms required by, Council;
- the Section 88B instrument must contain a Restriction on the Use of Land which:
    - identifies that the site contains the Containment Cell and is subject to the LTEMP;
    - prohibits the registered proprietor (and its successors) from:
        - doing or permitting the doing of anything which is contrary to, or is inconsistent with, the LTEMP;

- allowing anyone to access the Containment Cell for any purpose other than for inspection, maintenance or repairs as required under the LTEMP; or
- doing or permitting the doing of anything which causes or may cause any contamination or any migrating contamination;
- provides that the registered proprietor (and any successor) will be responsible for and indemnifies Council against all liabilities (including all costs, expenses, losses, damages and other liabilities of any kind) which Council suffers or incurs as a consequence of any breach of the terms of the restriction by the registered proprietor;

o cannot be released, varied or modified without the consent of Council; and

o complies with any other requirements of, and contains any other terms required by, Council; and

- the Section 88B Instrument must contain a statement to the effect that it is intended to be created on registration or recording of the deposited plan, as if it had been imposed under section 88E of the Conveyancing Act.

9.1.6 Provide to Council, an interim 'Letter of Advice' prepared by a NSW EPA Accredited Site Auditor, under the NSW Site Auditor Scheme, to confirm:

- The location of the existing containment cell
- Endorsement of the Long-Term Environmental Management Plan (LTEMP), with a view to issue a Site Audit Statement at completion of remediation works.

9.1.7 Evidence of the above conditions is to be provided to Council prior to the issue of any Construction Certificate.

10 PRIOR TO DEVELOPMENT WORKS COMMENCING

10.1 Safety/Health/Amenity

10.1.1 Toilet facilities shall be provided on the land at the rate of 1 toilet for every 20 persons or part thereof employed at the site.

Each toilet provided shall be:

(a) a standard flushing toilet, or

(b) a temporary on-site toilet which is regularly maintained and the waste disposed to an approved sewerage management facility.

10.1.2 A sign is to be erected and maintained in a prominent position on the site in accordance with Clause 98 A (2) of the Environmental Planning and Assessment Regulations 2000 indicating:

(a) the name, address and telephone number of the principal certifying authority for the work, and

(b) the name of the principal contractor (if any) for the building work and a telephone number on which that person may be contacted outside working hours, and

(c) stating that unauthorised entry to the work site is prohibited.

This condition does not apply to:

(a) building work carried out inside an existing building, or

(b) building work carried out on premises that are to be occupied continuously (both during and outside working hours) while the work is being carried out.

10.1.3 Soil erosion and sediment control measures shall be provided in accordance with Council's Soil Erosion and Sediment Control Policy.

10.1.4 All soil erosion and sedimentation control measures shall be installed prior to the commencement of development works.

10.1.5 A single vehicle/plant access to the land shall be provided to minimise ground disturbance and transport of soil onto any public place. Such access shall be provided in accordance with the requirements of Appendix "F" of Council's Soil Erosion and Sediment Control Policy. Single sized 40mm or larger aggregate placed 150mm deep, and extending from the street kerb/road shoulder to the land shall be provided as a minimum.

10.1.6 Any excavation and/or backfilling associated with the development shall be executed safely and in accordance with appropriate professional standards, with any excavation properly guarded and protected to prevent such work being dangerous to life or property.

10.1.7 Should the development work:

(a) be likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or

(b) involve the enclosure of a public place,

a hoarding or protective barrier shall be erected between the work site and the public place. Such hoarding or barrier shall be designed and erected in accordance with Council's current Local Approvals Policy under the Local Government Act 1993.

Where necessary, an awning shall be erected, sufficient to prevent any substance from, or in connection with, the work falling into the public place.

The hoarding, awning or protective barrier shall be effectively illuminated between sunset and sunrise where it may be hazardous to any person in the public place.

10.2 Notification to Council

10.2.1 The person having the benefit of this consent shall, at least 2 days prior to work commencing on site, submit to Council a notice under Section 57 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 indicating details of the appointed Principal Certifier and the date construction work is proposed to commence.

10.2.2 At least five (5) full working days written notice must be given for the commencement of engineering works. Such notice must be accompanied by evidence of the contractors Public Liability and Workers Compensation Insurances. For Public Liability Insurance this should be a minimum amount of $10,000,000.

10.3 Insurances

10.3.1 Current copies of relevant insurance Certificates of Currency are to be submitted to Council's Engineering Approvals Team. This shall be submitted prior to commencement of engineering works required by this consent that are carried out on Council controlled lands such as roads, drainage reserves and parks. This includes Public Liability Insurance with a minimum of $20,000,000 Indemnity and Workers Compensation.

10.4 Dilapidation Report

10.4.1 A dilapidation report on Bandon Road from Bandon Road and St James Road intersection to front boundary of the proposed development site shall be conducted and submitted to Council for records.

10.5 Transport for NSW

10.5.1 Written evidence shall be obtained from the Transport for NSW indicating compliance with its requirements, including the payment of any necessary works supervision fees. A copy of such approval shall be lodged with Council.

10.6 Adjoining Owners

10.6.1 Written permission from the respective owner(s) must be obtained to:

(a) discharge stormwater onto adjoining owner's land.

(b) carry out works on adjoining land.

(c) drain the site across land owned by others.

A copy of such written permission shall be lodged with Council.

10.7 Site Works and Drainage

10.7.1 Any required retaining wall(s) and/or other effective method to retain excavated or filled ground (not being Exempt Development under an environmental planning instrument), together with any associated groundwater drainage system, shall be designed by an appropriately qualified person.

10.8 Service Authority Approvals

10.8.1 Prior to the commencement for construction of footway crossings and driveways a clearance shall be obtained from the relevant telecommunications carriers and Endeavour Energy. The clearance shall notify that all necessary ducts have been provided under the proposed crossing.

10.9 Tree Management

10.9.1 No trees, located within the subject allotment and/or within the Council Road Reserve (verge/nature strip) or any adjoining public open space, may be removed or pruned unless specific approval is given in this consent.

10.9.2 All trees, including Community Assets (Public Trees), not approved for removal, or pruning by the Conditions of this Development Consent, are required to be retained and protected. Tree Protection Measures, compliant with the provisions of AS4970: Protection of trees on development sites 2009 and must be installed prior to the commencement of any works on site, including demolition.

10.9.3 A Compliance Certificate is to be provided by the Project Arborist to the Principal Certifying Authority once the required Tree Protection Measures have been installed.

10.9.4 There must be no excavation, mechanical or by hand, or alteration to existing soil levels within the Tree Protection Zone of any tree required to be retained and protected.

10.9.5 Prior to the removal of any tree located on site the applicant shall:

- Have all trees inspected, by a Practicing Arborist with a minimum qualification of Australian Qualification Framework (AQF) Level 3 in Arboriculture, for the presence of hollows or potential hollows.
- Prior to any works being undertaken on tree/s approved for removal or pruning, a person, holding a wildlife handling licence, must be present on site. If, during tree works, an animal or bird is located, the accredited handler is to direct removal/relocation of the animal as appropriate. Accredited handlers can be contacted through Wires (<https://www.wires.org.au/>) or Birdlife Australia (<https://birdlife.org.au/>).

10.9.6 Trees, recommended for retention as specified Prior to Construction Certificate must be retained and protected. Tree Protection, as specified in the Tree Protection Plan is to be installed on site.

10.9.7 Prior to development works, including demolition, the Project Arborist is to provide Certification, to the Principle Certifying Authority, that all Tree Protection Measures have been installed in accordance with the requirements of this consent.

10.9.8 A Council representative may also attend to confirm the tree protection measures are correctly installed in line with the Tree Protection Plan.

10.10 Bushland Protection Fencing

10.10.1 Prior to any works commencing, temporary 1.8 m chain mesh Bushland Protection Fencing must be in place at the boundary of works adjacent to retained and riparian habitats and all high biodiversity values land in neighbouring properties. The VMP will show the location of this fencing.

The fence is to restrict unauthorised entry and prevent the following:

- Stockpiling of materials
- Placement of fill
- Parking of vehicles
- Compaction of soil
- Earthworks incursions
- Cement washout and other chemical or fuel contaminants
- Damage to threatened species and their habitat

10.11 Heritage Requirements

10.11.1 Prior to commencement of works, an archival recording of the site and all its buildings, structures and elements shall be undertaken. This is to include:

a) measured drawings

b) a photographic record of the site's layout, relationships between structures, existing landscape treatment and of the individual buildings, externally and internally, room-by-room.

10.12 Other Matters

10.12.1 If the estimated cost is $250,000 or greater proof of long service levy payment is required.

10.12.2 Any ancillary works undertaken shall be at no cost to Council.

10.12.3 Submit written evidence from Transport for NSW indicating compliance with all necessary requirements.

10.12.4 Provide a sediment and erosion control plan in accordance with Council's Soil Erosion and Sediment Control Policy and Engineering Guide for Development.

10.12.5 The Applicant is to submit Stormwater Engineering Plans for the development within this development consent, prepared by a chartered professional engineer (CPEng) (Civil / Environmental Engineer) who has membership to Engineers Australia, indicating all details relevant to the collection and disposal of stormwater from the site, staged pad, road and where appropriate adjacent catchments.

The detail of the tailout from the catch drain 2 into the creek must be provided to prevent any erosion of the land in accordance with Council's specification.

Stormwater shall be conveyed from the site to sediment basins which must be designed in accordance with Landcom: Managing Urban Stormwater: Soils and construction.

Details demonstrating compliance are to be submitted to the Certifying Authority for approval prior to the commencement of work.

11 DURING DEVELOPMENT WORKS

11.1 Site Cut and Fill levels

11.1.1 The extent of cut and fill on the development site is restricted to that which is indicated on the approved plans.

Any ground re-shaping by cut and/or fill shall not compromise the structural integrity of any adjacent building, structure or service conduit on the subject or adjoining land.

11.2 Waste Management Plan

11.2.1 The waste material sorting, storage and re-use requirements of the approved Waste Management Plan and Council's Site Waste Management and Minimisation Development Control Plan shall be implemented during the course of development works. This includes the sorting and storage of waste and recyclable building materials on site for collection and disposal by the nominated waste/recycling contractor to the nominated disposal site.

11.3 Safety/Health/Amenity

11.3.1 The required toilet facilities shall be maintained on the land at the rate of 1 toilet for every 20 persons or part of 20 persons employed at the site.

11.3.2 A sign is to be erected and maintained in a prominent position on the site in accordance with Clause 98 A (2) of the Environmental Planning and Assessment Regulations 2000 indicating:

(a) the name, address and telephone number of the principal certifying authority for the work, and

(b) the name of the principal contractor (if any) for the building work and a telephone number on which that person may be contacted outside working hours, and

(c) stating that unauthorised entry to the work site is prohibited.

11.3.3 Should the development work:

(a) be likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or

(b) involves the enclosure of a public place,

the required hoarding, awning or protective barrier shall be maintained between the land and the public place.

The hoarding, awning or protective barrier shall be effectively illuminated between sunset and sunrise where it may be hazardous to persons in the public place.

11.3.4 All measures to control soil erosion and sedimentation shall be maintained throughout development works.

11.3.5 A single vehicle/plant access to the land shall be maintained to minimise ground disturbance and transport of soil onto any public place. Such access shall be maintained in accordance with the requirements of Appendix "F" of Council's Soil Erosion and Sediment Control Policy. As a minimum, single sized 40mm or larger aggregate placed 150mm deep, and extending from the street kerb/road shoulder to the land shall be provided.

11.4 Hours of Operation

11.4.1 The hours of operation are limited to between 7.00am to 6.00pm, Mondays to Fridays; 8.00am to 1pm, Saturdays; and no such work to be undertaken at any time on Sundays or public holidays.

11.4.2 If any other activities are proposed to be undertaken outside of these hours, Council is to be notified and approval may be required depending on the activity.

11.5 Truck Routes

11.5.1 The ingress and egress routes used by trucks are to be compliant with the approved and prohibited routes identified in the Traffic Management Plan.

11.6 Nuisance Control

11.6.1 Any objectionable noise, dust, concussion, vibration or other emission from the development works shall not exceed the limit prescribed in the Protection of the Environment Operations Act 1997. All feasible and reasonable noise and vibration mitigation measures shall be implemented and any activities which may exceed the construction noise management levels and vibration criteria shall be identified and managed in accordance with an approved Construction Noise, Vibration Assessment and Management Plan.

11.6.2 The hours of any offensive noise-generating development works shall be limited to between 7.00am to 6.00pm, Mondays to Fridays: 8.00am to 1pm, Saturdays; and no such work to be undertaken at any time on Sundays or public holidays.

11.7 Dust Control

11.7.1 All the required dust control measures in the Construction Air Quality Management Plan are to be implemented during all stages of development works.

11.8 Waste Control

11.8.1 The waste material sorting, storage and re-use requirements of the approved Waste Management Plan and Council's Site Waste Management and Minimisation Development Control Plan shall be implemented during the course of development works.

11.9 Log Book

11.9.1 A daily log book is to be kept at the premises. This log book is to be made available for Council inspection at any time on request and must record:

- the date and time of delivery
- the registration number of every delivery truck,
- tonnage of fill being delivered,
- qualified hygienist certificate/report number
- location and source of fill being delivered

11.10 Qualified hygienist certificate/report number

11.10.1 Every qualified hygienist certificate/report number for imported fill is to be archived and accessible as requested, so that Council can undertake random checks if required.

11.11 Construction Inspections

11.11.1 The person having the benefit of this consent is required to notify the Principal Contractor for the building construction project that various mandatory and critical stage inspections must be conducted by an accredited certifier, and may include inspections (where applicable):

(a) After excavation for, and prior to placement of, any footings; and

(b) The tie downs; and

(c) Prior to covering any stormwater drainage connections; and

(d) After the building work has been completed.

11.12 Aboriginal Heritage

11.12.1 The applicant is to comply with the requirements of:

- Aboriginal Heritage Impact Permit Reference No. C0001996 dated 5 July 2016 applicable to this land.
- Notice of Variation of Aboriginal Heritage Impact Permit NO. C0001996 dated 26 May 2021
- Aboriginal Heritage Impact Permit No. C0002249 dated 26 October 2016

- Notice of Variation of Aboriginal Heritage Impact Permit NO. C0002249 dated 16 July 2021
- Any further variations to the above permits

11.12.2 If, during the course of construction, the applicant or persons acting on this consent become aware of any previously unidentified Aboriginal object(s), all work likely to affect the object(s) shall cease immediately and the NSW Office of Environment & Heritage informed in accordance with Section 89A of the National Parks and Wildlife Act 1974. The site, and objects, are to be assessed by a suitably qualified Aboriginal Heritage Consultant in accordance with the requirements of Heritage NSW. No further works are to be undertaken on the site until written authorisation from Heritage NSW is received by the Applicant. In addition, a member of each of the Western Sydney Aboriginal Stakeholder Groups is to be contacted.

11.13 Relationship with other approvals for Stage A works

11.13.1 Compliance with the requirements of the following nominated approvals:

a) Development Consent No. DA-22-01183 dated 12 December 2023 issued by Blacktown City Council

b) Modification Consent No. MOD-24-00120 dated 9 October 2024 issued by Blacktown City Council

c) Relevant requirement of any other development consent, Construction Certificate issued under the Environmental Planning and Assessment Act, 1979, The Local Government Act, 1993 or The Roads Act 1993.

Confirmation that the conditions contained within the above approvals have been fully complied with must be provided to Council at the completion of Stage A.

11.14 Heritage matters

11.14.1 Regular monitoring and evaluation shall be conducted to assess the effectiveness of the conservation management measures in accordance with the adopted CMP and to identify any necessary adjustments.

11.15 Heritage Inspections

11.15.1 A regular series of detailed inspections of the historic cottages and their grounds shall be carried out throughout the development works from site commencement to completion. The applicant must engage a qualified heritage architect to prepare a detailed inspection reports which must be reviewed and approved by the Council's Heritage Advisor throughout the various stages of the development. The intent of the inspections is to ensure the cultural significance values of the former Riverstone Meatworks site are protected by achieving minimum standards of maintenance and repair; in view of the extended duration of the overall development. The aim is to prevent serious or irreparable damage or deterioration of the heritage items and ensuring a reasonable level of protection.

11.15.2 The inspections shall focus on the following aspects:

- Weather protection: Works shall include but not limited to the following ; ground drainage systems; roof drainage systems; walls, doors and windows intended to provide weather protection; wind damage; ventilation systems and other measures to prevent ingress of water or dampness or to reduce its effects; etc
- Fire protection: Works shall include but not limited to the following : Removal of fire hazards, such as non-significant vegetation, rubbish or any other hazardous material. Significant garden plantings and trees shall be maintained not removed; building services shall be made safe; a fire or smoke detection system shall be

installed or linked to the back-to-base building and site security system during the period the buildings are unoccupied.

- Security: Works shall include but not limited to the following : Fencing and a back-to-base surveillance system with appropriate coverage throughout the property; building security and appropriate locking systems; damaged doors and windows shall be made secure temporarily prior to repairs during the period the buildings are unoccupied.
- Essential maintenance and repair: Works shall include but not limited to the following: essential maintenance and repairs related to the above three aspects; the control of pests, such, as vermin, rodents, birds, termites and regular termite inspections; structural elements; exterior and interior fabric and finishes; fixtures and fittings and landscape and garden elements.

11.15.3 The inspections shall be carried out by a suitably experienced heritage architect and presented in a methodical and systematic format. The inspections should identify the necessary works required and each inspection report shall be lodged with Council for approval. A follow-up site inspection with Council may be required.

11.15.4 The frequency of inspections shall follow the staging of the works and an outline program prepared for Council at the time of site commencement. The inspection program shall be modified or adjusted to suit the progress of works. It is likely that after the first inspection subsequent inspections shall occur at periods no greater than annual intervals to completion of all development works. If buildings are completed and occupied in a staged manner the need for inspections would reduce following the staged occupation and reuse of buildings.

11.16 Compliance with the requirements of External Authorities

11.16.1 Full compliance is required with the relevant requirements of TransGrid, Endeavour Energy, Ampol, Department of Planning and Environment-Water, Sydney Trains, Transport for NSW, Jemena, Sydney Water Corporation and Ampol in their comments or General Terms of Approval.

12 DURING DEVELOPMENT WORKS (ENGINEERING)

12.1 Filling of Land and Compaction Requirements

12.1.1 Suitable land fill replacement is required when unsuitable soils are removed. All fill including existing fill shall be compacted in accordance with Council's Works Specification - Civil (current version). A compaction certificate shall be obtained from an appropriately qualified practising registered engineer (NER) verifying that the correct compaction requirements have been met. This compaction certificate is to be submitted to Council at the completion of each stage prior to commencing the next stage.

12.1.2 Special attention is drawn to the below listed requirements of Council's Works Specification - Civil (Current Version).

a) Contour lot fill diagrams and lot fill compaction certificates. A restriction as to User with Council's standard wording must be placed on filled lots.

b) Applicant to submit material compliance documentation in accordance with Councils Civil Works Specification 8.1.4

Note: Council's Works Specification (Civil) requires road pavement and pipe bedding materials be sourced from N.A.T.A. certified stockpiles.

The above documentation shall be submitted to Council at the completion of each stage prior to commencing the next stage.

12.1.3 Site filling within lot boundaries (not in road reserves) and compaction is to be carried out under the supervision of a Chartered Geotechnical Engineer and shall be in accordance with Blacktown City Council's “Works Specification - Civil (Current

Version)". Minimum standard compaction of 95% must be achieved and certified by a NATA registered soils lab and details submitted to Council. The Level 1 Inspection Report for each stage shall be submitted to council prior to commencing the next stage.

12.1.4 Only clean fill shall be deposited/imported on site in accordance with Council's Works Specification - Civil (Current Version). Note: dry builder's waste i.e. bricks plaster and timber industrial waste or putrescible materials are not to be deposited on site. Validation of the imported fill material will be required by a suitably qualified registered engineer.

12.1.5 Appropriate dust control measures are to be implemented during construction to reduce any impact on local air quality and reduce dust emissions. This will include but not be limited to regularly wetting down of the site during the course of works being carried out in order to control wind-blown dust.

12.1.6 All roads adjoining the site must be kept clean and free of all materials. Infringement Notices incurring a monetary penalty may be issued by Council where this measure is not being complied with.

12.1.7 Trucks transporting cut and fill must have their loads covered and provisions of "shaker pads" and wash-down areas for trucks leaving the site are to be made available. All details are to be shown on soil erosion and sediment control plans.

12.1.8 Prior to the placement of any fill on the site all topsoil and vegetation must be removed down to a suitable sub-grade material. The topsoil is to be stockpiled for use in revegetation of the site.

12.2 Inspection of Engineering Works - Environmental Planning and Assessment Act 1979.

12.2.1 Comprehensive inspection compliance certificate(s) to be issued for all engineering works required by this consent and the approved construction certificate. The inspection compliance certificate(s) can only be issued by Council or an accredited certifier, under *Part 4A of the Environmental Planning and Assessment Act 1979* as amended. A schedule of mandatory inspections is listed in Council's Works Specification – Civil (current version).

Where Council is appointed as the Principal Certifier for the development, compliance certificates issued by accredited certifiers in lieu of council inspections will only be accepted by prior agreement or by Council request. All compliance certificate(s) must certify that the relevant work has been completed in accordance with the pertinent Notice of Determination / Development Consent and Construction Certificate.

12.3 Public Safety

12.3.1 The applicant is advised that all works undertaken are to be maintained in a safe condition at all times. Council may at any time and without prior notification make safe any such works Council considers to be unsafe and recover all reasonable costs incurred from the applicant.

12.4 Site Security

12.4.1 Chain wire gates and security fencing must be provided around the site in order to prevent unauthorised access and dumping of rubbish.

12.5 Traffic Control

12.5.1 Any "Traffic Control Plan" utilised for engineering works required by this consent must be prepared by a person who holds a current Roads and Maritime Services (RMS) Work Zone Traffic Management Plan accreditation and photo card for all works that are carried out in or adjacent to a public road. This Plan must satisfy all the requirements of AS 1742.3 - 2009.

12.5.2 Traffic control devices/facilities (i.e. barricades, signs, lights, etc.) required by the certified Traffic Control Plan must be setup, installed, monitored and maintained and by

a person who holds a current Roads and Maritime Services (RMS) accreditation and photo card to implement Traffic Control Plans.

12.5.3 Persons undertaking the control of traffic through or around work sites on Council controlled roads must hold a current Roads and Maritime Services (RMS) Traffic Controller accreditation and photo card and carry it with them.

12.5.4 The applicant is advised that prior to implementation of any traffic control system and during the entire course of construction suitably qualified Roads and Maritime Services (RMS) accredited work site traffic controllers will ensure a smooth transition with other nearby traffic control setups. The coordination, communication and cohesion between adjacent traffic control systems shall be addressed by the applicant and must satisfy all the requirements of AS 1742.3 - 2009.

12.5.5 Where the Traffic Control Plan may change during the course of construction to facilitate new works, a revised traffic control plan shall be prepared and certified by a person who holds a current Roads and Maritime Services (RMS) accreditation to prepare a Work Zone Traffic Management Plan. This Plan must satisfy all the requirements of *AS 1742.3 – 2009* and the current version of the RMS *Traffic Control at Work Sites* manual and shall be submitted to Council prior to implementation.

12.6 Tree Protection and Preservation

12.6.1 All sub-surface services (e.g. gas, water, electricity, stormwater, sewerage etc) are to be located outside of the Tree Protection Zone of any tree required to be retained and protected by this consent, including those located on adjoining properties.

12.6.2 Under no circumstances are sub-surface services to be installed within the Structural Root Zone of a tree required to be retained and protected by this consent, including those located on adjoining properties.

12.6.3 Power poles, stormwater grate drains, service lines etc. are to be located to avoid any need to install services within a Tree Protection Zone or to excavate through a Tree Protection Zone. All such features are to be located so that they do not negatively impact on any tree required to be retained by this consent or which is located on an adjoining site. Only where there is no other viable option available are services to be installed within the Tree Protection Zone.

12.6.4 Where services are required to be installed within the Tree Protection Zone, the Project Arborist is to be consulted prior to the works being undertaken and appropriate, tree sensitive installation methods are to be used. Open excavation must only be used on the authorisation of the Project Arborist and must be completed by hand, use of mechanical digging tools is not permitted.

12.6.5 The Project Arborist is required to supervise and direct all work associated with the installation of sub-surface services within the Tree Protection Zone of any tree required to be retained and protected by this consent, including those located on adjoining properties.

12.6.6 At the completion of the works, the Project Arborist must provide a Compliance Certificate to the Principal Certifying Authority which details the method used for the installation of the sub-surface services, identifies all tree roots severed by diameter and depth, and all tree protection measures implemented.

12.6.7 During development work, including demolition and landscape construction, the Project Arborist is to complete site inspections and/or supervision of work, as indicated in Tree Protection Plan.

12.6.8 The Project Arborist must be appointed before demolition of any existing structures or earthworks. They are to register with the Developer before any works commence so that the builder can be inducted as to essential times when the Arborist will be required on-site. Hold points, inspections and certification are to be carried out by the Arborist.

12.6.9 During development work, including demolition and landscape construction, the Project Arborist is to carry out regular site monitoring, to ensure Tree Protection Measures are being maintained compliant with the requirements of this consent. Record of these site visits is to be sent to the Principal Certifying Authority.

12.6.10 Where a non-compliance with the conditions of this consent is identified, the Project Arborist is to notify the Principal Certifying Authority within 3 working days from the date of the site visit. The notification must include the following details:

- Description of the non-compliance,
- Remedial actions required,
- Time frame for remedial actions to be completed in.

12.6.11 The Principal Certifying Authority must ensure that the recommendations of the Project Arborist are implemented within the stated timeframes.

12.7 Soil Erosion and Sediment Control Measures

12.7.1 Soil erosion and sediment control measures onsite shall be implemented, maintained and monitored in accordance with Council's Soil Erosion and Sediment Control Policy.

12.7.2 Re-vegetation and restoration of all disturbed areas as a result of the development works shall be completed as soon as practicable after the completion of earthworks and before the commencement of any other works on-site. The revegetated/restored areas must be established prior to the release of maintenance security/bonds. Note: All open drains must be turfed.

12.7.3 All required soil erosion and sedimentation control measures are to be maintained throughout the entire construction period and until all disturbed areas are restored to the satisfaction of Council in accordance with the design and construction specification. Infringement Notices incurring a monetary penalty may be issued by Council where the maintenance of measures is deemed inadequate.

12.8 Filling in Contaminated Land

12.8.1 During the course of placement of filling the applicant shall undertake further testing for potential soil contamination. Validation of the imported fill material will be required.

12.8.2 All testing and validation of the fill material shall be undertaken by a suitably qualified environmental consultant in accordance with Council's Policy and Procedures for the determination of Rezoning Development and Building Applications involving Contaminated Land. A Remediation and Validation Report documenting the testing undertaken shall be submitted to Council for approval.

12.8.3 Should any remediation works be required documentary evidence prepared by a suitably qualified environmental consultant validating the site is to be submitted to Council for approval.

12.9 Other Matters

12.9.1 A chartered professional engineer (CPEng) (Civil / Environmental Engineer) who has membership to Engineers Australia is to certify that all the requirements of the installation of the liner, subsoil pipes and each layer of the basin matches the design requirements in accordance with Landcom: Managing Urban Stormwater: Soils and construction.

12.9.2 A Work-as-Executed (WAE) plan signed by a Registered Engineer (NER) or a Registered Surveyor must be submitted to Council at the completion of each stage of bulk earthworks prior to commencing the next stage. A colour soft copy (on a CD/USB with file format .PDF) of the WAE plans are to be submitted to Council.

12.9.3 A Work-as-Executed (WAE) plan signed by a Registered Engineer (NER) or a Registered Surveyor must be submitted to Council at the completion of the Section 68 Local Government Act 1993 and Section 138 Roads Act 1993 approvals. each stage of

bulk earthworks prior to commencing the next stage. A colour soft copy (on a CD/USB with file format .PDF) of the WAE plans are to be submitted to Council.

12.9.4 All engineering WAE plans MUST be prepared on a copy of the original, stamped Construction Certificate plans for engineering works. All works shall be in accordance with the approved plans.

13 DURING DEVELOPMENT WORKS (ENVIRONMENTAL HEALTH)

13.1 Environmental Health Matters

13.1.1 An unexpected-finds policy (UFP) should be prepared and implemented for the proposed site redevelopment works in relation to site contamination.

13.1.2 Any fill material imported onto the site must be classified as Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) and must be analysed and validated by an appropriately qualified and experienced environmental consultant in accordance with relevant NSW EPA guidelines, including the 'Waste Classification Guidelines' 2014 and the NSW EPA Contaminated Land Guidelines: Sampling design (2022).

13.1.3 Any materials requiring off-site disposal will need to be classified, managed and disposed of in accordance with the Protection of the Environment Operations Act (NSW) 1997 and the NSW Environment Protection Authority's Waste Classification Guidelines (2014)

13.1.4 Any asbestos material is to be handled and treated in accordance with the SafeWork NSW document "*Your Guide to Working With Asbestos - Safety guidelines and requirements for work involving asbestos*" dated March 2008.

13.1.5 The site is to be managed in accordance with the LTEMP.

13.1.6 The recommendations made in the Construction Noise and Vibration Management Plan prepared by Renzo Tonin & Associates, dated 28 April 2023 are to be implemented.

13.1.7 Upon receipt of a justified complaint in relation to noise pollution emanating from the premises, an acoustical assessment is to be carried out in accordance with the requirements of the Department of Environment and Conservation's Environmental Noise Management - NSW Industrial Noise Policy and provide recommendations to mitigate the emission of offensive noise from the premises. The report shall be prepared by an appropriately qualified acoustic consultant that is a member of the Association of Australian Acoustic Consultants and shall be submitted to Council for consideration.

13.1.8 Any activity carried out in accordance with this approval shall not give rise to air pollution (including odour), offensive noise or pollution of land and/or water as defined by the Protection of the Environment Operations Act 1997.

13.1.9 All waste generated on the site is to be stored, handled and disposed of in such a manner as to not create air pollution (including odour), offensive noise or pollution of land and/or water as defined by the Protection of the Environment Operations Act 1997.

13.1.10 In accordance with the requirements of Part 5.7 Protection of the Environment Operations Act 1997, Council is to be informed of any pollution incident that occurs in the course of carrying out the approved activity where material harm to the environment is caused or threatened.

14 DURING DEVELOPMENT WORKS (NATURAL AREAS)

14.1 Dam Dewatering

14.1.1 An aquatic ecologist or licenced wildlife handler is to be present during the dewatering of the onsite dam. Their role is to reduce and minimise the risk of injury to native aquatic fauna which may be present; to safely relocate any native fauna present; and to humanely euthanise pest fauna from the dam.

Within 14 days of the dam dewatering the aquatic ecologist is to provide a report on the works, including tallies of species relocated and euthanised, to Council through the Natural Areas Team.

14.2 Tree clearing

14.2.1 A qualified ecologist or licenced wildlife handler is to be present during removal of native trees on site.

Within 14 days of tree clearing the ecologist is to provide a report to Council on logs relocated, fauna rescued and relocated and fauna injured/transported to a vet or euthanised.

14.3 Earthworks

14.3.1 Any infrastructure (e.g., batter, retaining wall, drainage basins etc.) that is required to support the development shall not be located within land zoned as C2 (Environmental Conservation).

14.3.2 Batters are not to exceed a grade of 1V:5H and are to be stabilised with topsoil, native turf or hydroseed and native vegetation.

14.4 Compliance with Vegetation Management Plan

14.4.1 The requirements of the approved Vegetation Management Plan are to be complied with during the development works.

15 POST DEVELOPMENT WORKS REQUIREMENTS FOR EACH STAGE

15.1 Road Damage

15.1.1 The cost of repairing any damage caused to Council's assets in the vicinity of the land as a result of the development works shall be met in full by the applicant/developer.

15.2 Temporary Facilities Removal

15.2.1 Any hoarding or similar barrier erected to protect a public place shall be removed from the land and/or public place.

15.2.2 Any temporary toilet facilities provided during construction works shall be appropriately dismantled, disconnected and removed from the land.

15.2.3 Any temporary soil erosion control measure installed during development works shall be removed and other permanent measures required by Council’s Soil Erosion Control Policy shall be provided.

15.2.4 Any temporary builder's sign or other site information sign shall be removed from the land.

15.2.5 Any temporary site access provided for the purpose of development works shall be removed and the kerb and gutter and/or previous roadworks reinstated in a manner satisfactory to Council. Should the reinstatement involve the provision of a new vehicular crossing, layback, kerb and gutter or road shoulder works the separate approval of Council's Maintenance Section shall be obtained (and any appropriate fees paid) prior to such works commencing.

15.3 Tree Preservation

15.3.1 Upon completion of each stage of earthworks, the Project Arborist is to provide certification, to the Principal Certifying Authority, that the Tree Protection Measures, as

required by the conditions of this consent, have been implemented and maintained during the project.

15.3.2 The trees retained for the development must be in good health and condition and evidence is to be submitted to Council upon completion of each stage of earthworks. The applicant must follow the recommendations in the Tree Protection Plan.

15.4 Inspections

15.4.1 Any additional Council inspections beyond the scope of any Compliance Certificate package and needed to verify full compliance with the terms of this consent will be charged at the individual inspection rate nominated in Council's Fees and Charges Schedule.

15.5 Environmental Health Requirements

15.5.1 At the completion of each stage of works, provide to Council an interim 'Letter of Advice' prepared by a NSW EPA Accredited Site Auditor, under the NSW Site Auditor Scheme, to confirm that the entire area where works were undertaken has been fully remediated and validated as suitable for the proposed use.

15.5.2 After the final stage of the development is completed, submit to Council a Section A Site Audit Statement and Report completed by a NSW EPA Accredited Site Auditor, under the NSW Site Auditor Scheme, in accordance with the *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme 2017.*

15.5.3 The Long-Term Environmental Management Plan is to be attached to the Site Audit Statement confirming the site is suitable for the proposed use.

15.6 Post Earthworks Geotechnical and Salinity report

15.6.1 A post earthworks geotechnical and salinity report shall be submitted for Council's records upon completion of each stage of earthworks.

15.7 Engineering Matters

15.7.1 **Surveys/Certificates/Works As Executed plans:**

15.7.1.1 A Work-as-Executed (WAE) plan signed by a Registered Engineer (NER) or a Registered Surveyor must be submitted to Council when the engineering works are completed. A colour soft copy (on a CD/USB with file format .PDF) of the WAE plans are to be submitted to Council. All engineering WAE plans MUST be prepared on a copy of the original, stamped Construction Certificate plans for engineering works.

15.7.1.2 A Certificate shall be submitted by a Registered Surveyor indicating that all pipelines and associated structures lie wholly within the easements required by this consent.

15.7.1.3 Applicant is to compile and submit the following in accordance with Council's Works Specification - Civil (Current Version):

a) Contour lot fill diagrams and lot fill compaction certificates. A restriction as to User with Council's standard wording must be placed on filled lots.

b) Applicant to submit material compliance documentation in accordance with Councils Civil Works Specification 8.1.4

- Compliance Certificate and Test Results
- Delivery Dockets
- Summary of Material deliveries as per template available on Councils website.

15.7.1.4 This development requires separate approvals under the *Roads Act 1993* and / or *Local Government Act 1993.* Prior to the issue of an Occupation Certificate, The applicant must obtain written confirmation from Council that these works have been completed to its satisfaction.

15.7.2 **Easements/Restrictions/Positive Covenants:**

15.7.2.1 Any covenant(s) easement(s) or restriction(s) required by this consent must nominate Blacktown City Council as the authority to release, vary or modify the easement(s) or restriction(s). The form of easement or restriction created as a result of this consent must be in accordance with the following:

(a) Blacktown City Council's standard recitals for Terms of Easements and Restrictions (Current Version).

(b) The standard format for covenants, easements and restrictions as accepted by the Land Registry Services (LRS).

15.7.2.2 All Section 88B restrictions and covenants created, as part of this consent shall contain a provision that they cannot be extinguished or altered except with the consent of Blacktown City Council.

15.7.3 **Bonds/Securities/Payments in Lieu of Works:**

15.7.3.1 A maintenance security of 5% of the value of the required engineering works must be lodged with Council prior to the practical completion of the works. Council will hold this security for a period of at least twelve months.

a) In the case of subdivision - This period commences at the release of the final plan of subdivision. (Issue of Subdivision Certificate)

b) In the case where no subdivision occurs - This period commences at the date of practical completion of the development.

This maintenance period may be extended in the following situations to allow for the completion of i) necessary maintenance and or ii) all outstanding minor works.

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Ref: 311015-03271
File: lr301015-03271lc_crt250606-Flood Level Impacts without TfNSW Road Upgrades.docx

Riverstone Pde P/L atf 81 Riverstone Parade Unit Trust
c/o Sakkara
Level 42 Governor Phillip Tower
1 Farrer Place
SYDNEY NSW 2000

9 June 2025

Attention: Mr Callum Gracie

Dear Callum,

RICHARDS SITE WIDE CIVIL WORKS (DA-23-00740)
ASSESSMENT OF FLOOD LEVEL IMPACTS WITHOUT MAJOR ROAD UPGRADES

I refer to our recent e-mail correspondence in which you requested that Worley Consulting provide difference mapping showing the predicted changes in flood levels between proposed 'post-development' conditions and 'existing' conditions, for the scenario that does not include the upgrades to Garfield Road West and Bandon Road which are proposed as part of Transport for New South Wales' (TfNSW) North West Growth Centre Road Network Strategy.

The background for this request, preparation of the associated mapping and the findings are detailed in the following.

1. Background

The *'Riverstone West Precinct Sitewide Civil Works – Flood Impact and Risk Assessment'* (FIRA) prepared by Advisian in 2023 (now Worley Consulting) used a TUFLOW model to define flood characteristics for 'interim' and 'post-development' conditions.

The 'interim' scenario comprised of existing conditions with the inclusion of the proposed Garfield Road and Bandon Road upgrades. The 'post-development' scenario comprised of the proposed Riverstone West (Richards) Precinct civil works as well as the inclusion of the proposed Garfield Road and Bandon Road upgrades.

Flood level impacts associated with the proposed Riverstone West (Richards) Precinct development were then determined by subtracting 'interim' scenario peak flood levels from the 'post-development' scenario peak flood levels.

This approach to assessing flood level impacts associated with the development was discussed with the then NSW Department of Planning and Environment (DPE, now DPHI) at the time and was confirmed to be appropriate for the purposes of the FIRA.

Flood level impacts were assessed for the following flood scenarios established by previous investigations in the area to be appropriate for this purpose.

- Scenario 1 - Flooding of Eastern Creek and its tributaries due to a local 1% AEP event occurring in isolation, i.e., with no Hawkesbury-Nepean River flooding.
- Scenario 2 - Flooding of Eastern Creek and its tributaries due to a local 1% AEP event occurring concurrently with 20% AEP event flooding in the Hawkesbury-Nepean River.
- Scenario 3 - Flooding of Eastern Creek and its tributaries due to a local 1% AEP event occurring concurrently with 1% AEP event flooding in the Hawkesbury-Nepean River.

It was found that the predicted impacts of the development on flooding, as indicated in the difference mapping, would not result in any material change to the risk to life or to the flood affectation of land surrounding the Site.

However, there may also be value in understanding the potential impacts of the development in the absence of the Garfield Road and Bandon Road upgrades, for the scenario where they do not eventuate or are constructed some time after the site wide civil works project is completed. This scenario is the subject of this letter report and associated mapping.

2. Flood Modelling and Mapping Approach

For the purposes of this assessment, the two-dimensional TUFLOW hydraulic model provided to Advisian by DPE was used to define flood characteristics for 'existing' and 'post-development' conditions, where both scenarios did not include the proposed upgrades to Garfield Road West and Bandon Road. This included simulation of the three previously described 1% AEP event flood scenarios.

The TUFLOW model post-development terrain included the proposed Riverstone West (Richards) Precinct civil works and is presented in Figure 1. Existing culverts at Garfield Road West that are included in the flood model were modified flows carried by them discharge to an open channel that is proposed within the southern boundary of the Site.

Flood level difference was then prepared to quantify off-site impacts that could potentially be caused by the Riverstone West (Richards) Precinct development (*excluding proposed TfNSW road upgrades*). The flood level difference mapping is presented in the figures enclosed as Attachment A. Flow velocity difference mapping is presented in Attachment B.

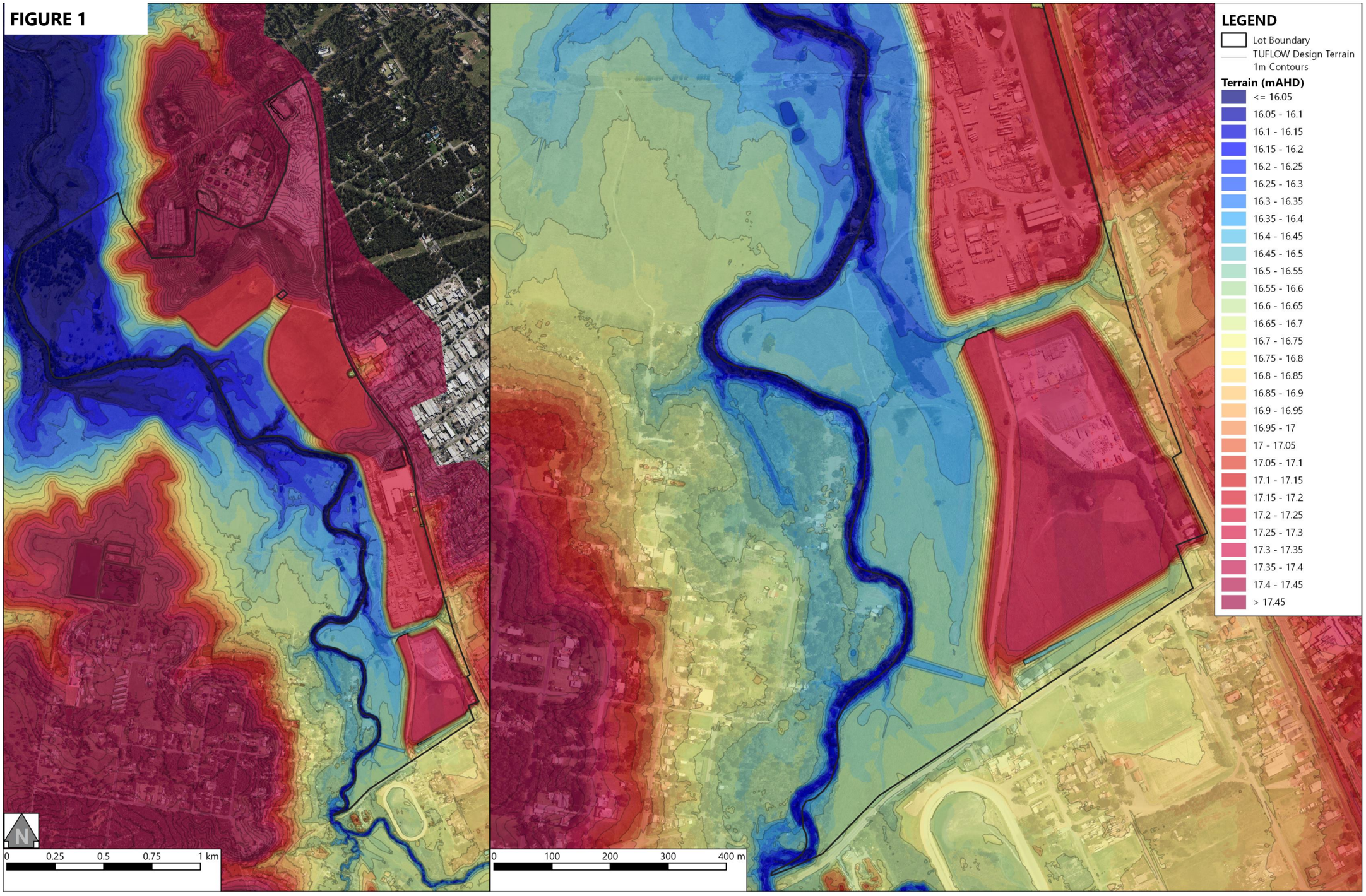
The difference maps were determined by subtracting 'existing' scenario peak flood levels from the 'post-development' scenario peak flood levels. Increases in peak flood level are represented by shades of warm colours and decreases in peak flood level are represented by shades of cool colours. The white shading indicates changes in peak flood level that are between ± 0.01 metres (*i.e., less than 10 mm*). This process was repeated to analyse changes in peak flow velocities.

3. Findings

A summary of simulated mainstream flood level and flow velocity impacts associated with the proposed development is provided in the following.

- Scenario 1 - Flooding of Eastern Creek and its tributaries due to a local 1% AEP event with no Hawkesbury-Nepean River flooding (*refer* Figures A1 and B1)
  - The proposed development would generally result in decreases in peak flood levels along Eastern Creek downstream (north) of Garfield Road over a distance of about 1.5 kilometres.
  - No flood level impacts are predicted within the Eastern Creek floodplain outside of the site boundary.
  - The proposed development will result in increases in peak velocity of 0.1 to 0.5 m/s along a section of the Eastern Creek floodplain adjacent to the proposed fill platforms north of Garfield Road. However, these impacts are contained within the site boundary.
  - A minor localised increase in peak velocity of 0.1 m/s is predicted off-site at the intersection of Princes Street and Riverstone Parade. The maximum resulting peak velocity in the area would be 0.7 m/s. However, there would be no change in hazard category (H3 – unsafe for vehicles, children and the elderly) and thus no change in risk to life or property. This was also observed in the scenario including upgrades to Garfield Road West and Bandon Road.

FIGURE 1



Prepared by:

SAKKARA worley consulting

TUFLOW HYDRAULIC MODEL TERRAIN FOR 'POST-DEVELOPMENT' SCENARIO
EXCLUDING PROPOSED GARFIELD RD AND BANDON RD UPGRADES

- Scenario 2 - Flooding of Eastern Creek and its tributaries due to a local 1% AEP event occurring concurrently with 20% AEP event flooding in the Hawkesbury-Nepean River (*refer* Figure A2 and B2)
  - The proposed development will result in small decreases in peak flood levels along Eastern Creek downstream (north) of Garfield Road for about 400 metres.
  - No flood level impacts are predicted within the Eastern Creek floodplain outside of the site boundary.
  - The proposed development will result in increases in peak velocity of 0.1 to 0.3 m/s along a small section of the Eastern Creek floodplain adjacent to the proposed fill platforms north of Garfield Road. However, these impacts are contained within the site boundary.
  - As is the case with Scenario 1, a localised increase in peak velocity of 0.1 m/s is indicated off site at the intersection of Princes Street and Riverstone Parade. The maximum resulting peak velocity in the area would be 0.7 m/s. However, this will not manifest to generate a change in hazard category (H3 – unsafe for vehicles, children and the elderly) and therefore will result in no change in risk to life or property. This was also observed in the scenario including upgrades to Garfield Road West and Bandon Road.
- Scenario 3 - Flooding of Eastern Creek and its tributaries due to a local 1% AEP event occurring concurrently with 1% AEP event flooding in the Hawkesbury-Nepean River (*refer* Figure A3 and B3)
  - No flood level impacts are predicted within the Eastern Creek floodplain outside of the site boundary.
  - No flood flow velocity impacts exceeding 0.1 m/s are predicted outside of the site boundary.

4. Conclusion

In conclusion, the proposed development – whether the proposed Bandon Road and Garfield Road West upgrades are constructed or not – is not predicted to cause any notable adverse off-site impacts on 1% AEP peak flood levels or flow velocities and would not result in any material change in the risk to life or property on land surrounding the Site.

I trust that this letter report and the attached mapping suitably addresses the request for difference mapping based on 'post-development' and 'existing' conditions for the Riverstone West Precinct (Richards) Site in the circumstance where the proposed upgrades to Garfield Road West and Bandon Road are not undertaken. Please contact me on 0407 063711 should you require anything further.

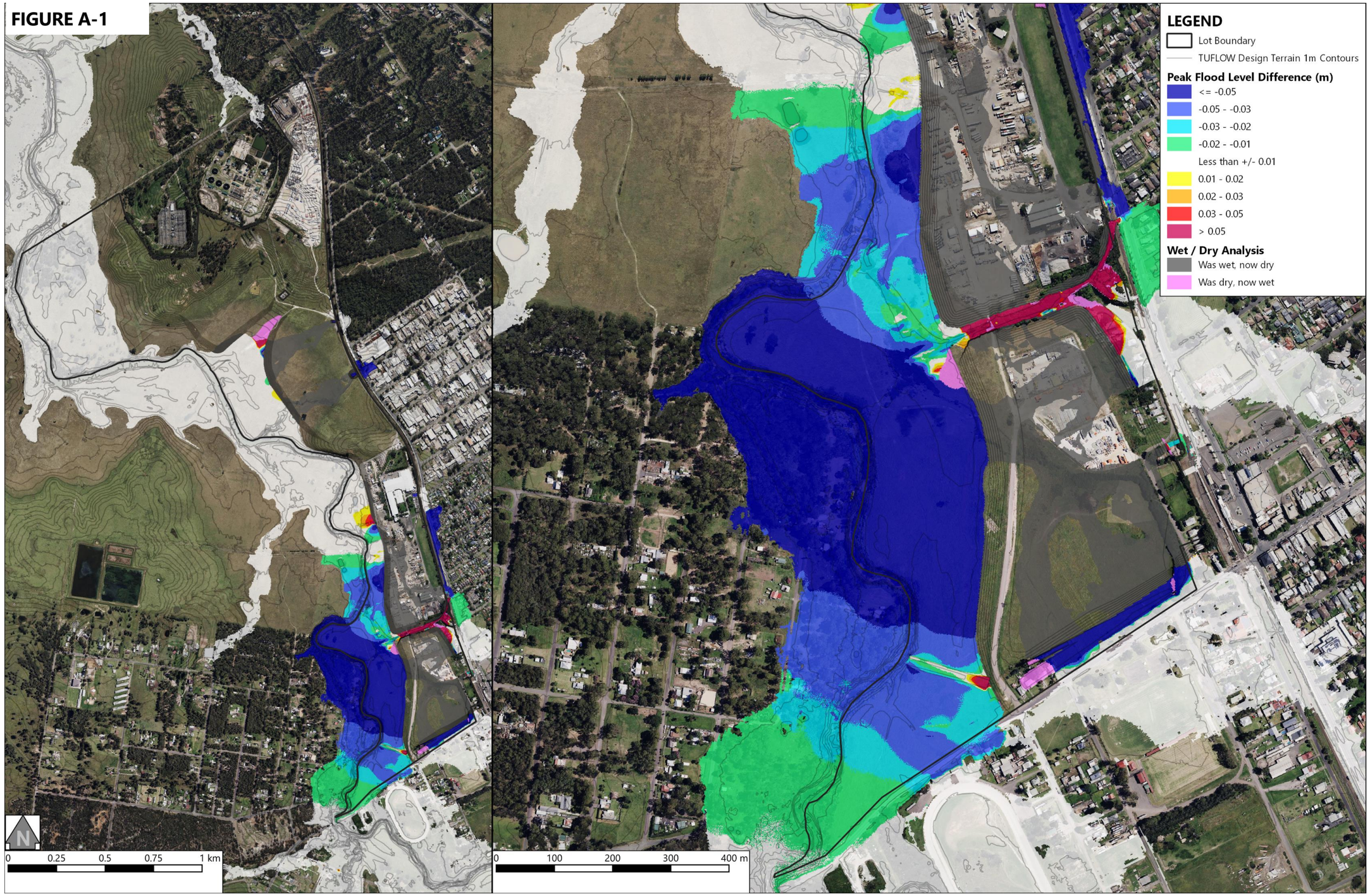
Yours faithfully
WORLEY CONSULTING

Chris Thomas
Senior Principal Hydrologist
NSW Practice Lead - Water Resources

Attachment A

FLOOD LEVEL DIFFERENCE MAPPING (NO ROAD UPGRADES)

FIGURE A-1



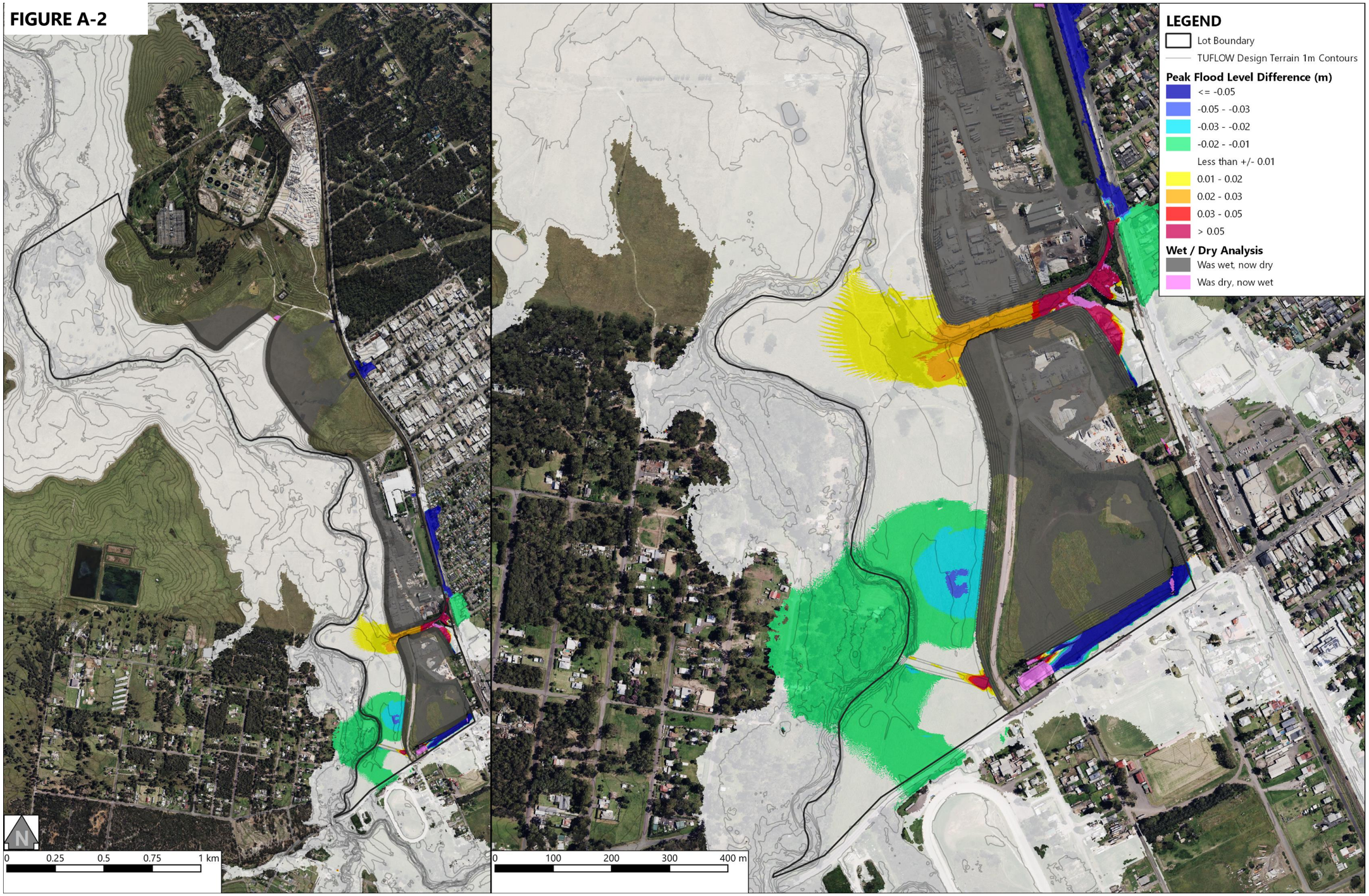
Prepared by:

SAKKARA worley consulting

DIFFERENCE IN SIMULATED PEAK FLOOD LEVELS: WORLEY 'ALTERNATE 1' DESIGN LESS EXISTING 1% AEP LOCAL CATCHMENT FLOOD (NO TAILWATER)

SIMULATIONS DO NOT INCLUDE PROPOSED GARFIELD RD AND BANDON RD UPGRADES

FIGURE A-2

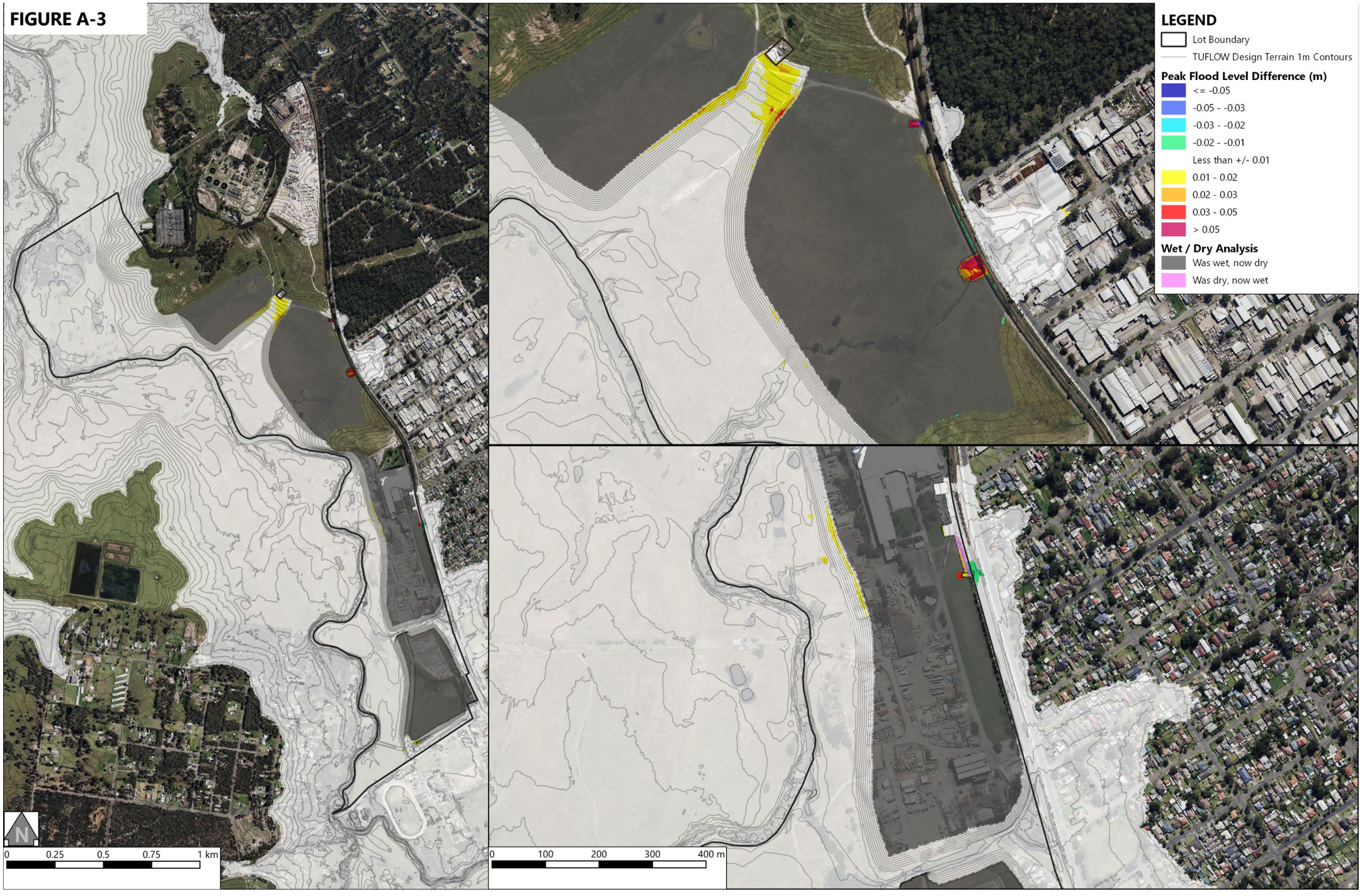


Prepared by:

SAKKARA worley consulting

DIFFERENCE IN SIMULATED PEAK FLOOD LEVELS: WORLEY 'ALTERNATE 1' DESIGN LESS EXISTING
1% AEP LOCAL CATCHMENT FLOOD WITH 5% AEP H-N TAILWATER
SIMULATIONS DO NOT INCLUDE PROPOSED GARFIELD RD AND BANDON RD UPGRADES

FIGURE A-3



Prepared by:

SAKKARA worley consulting

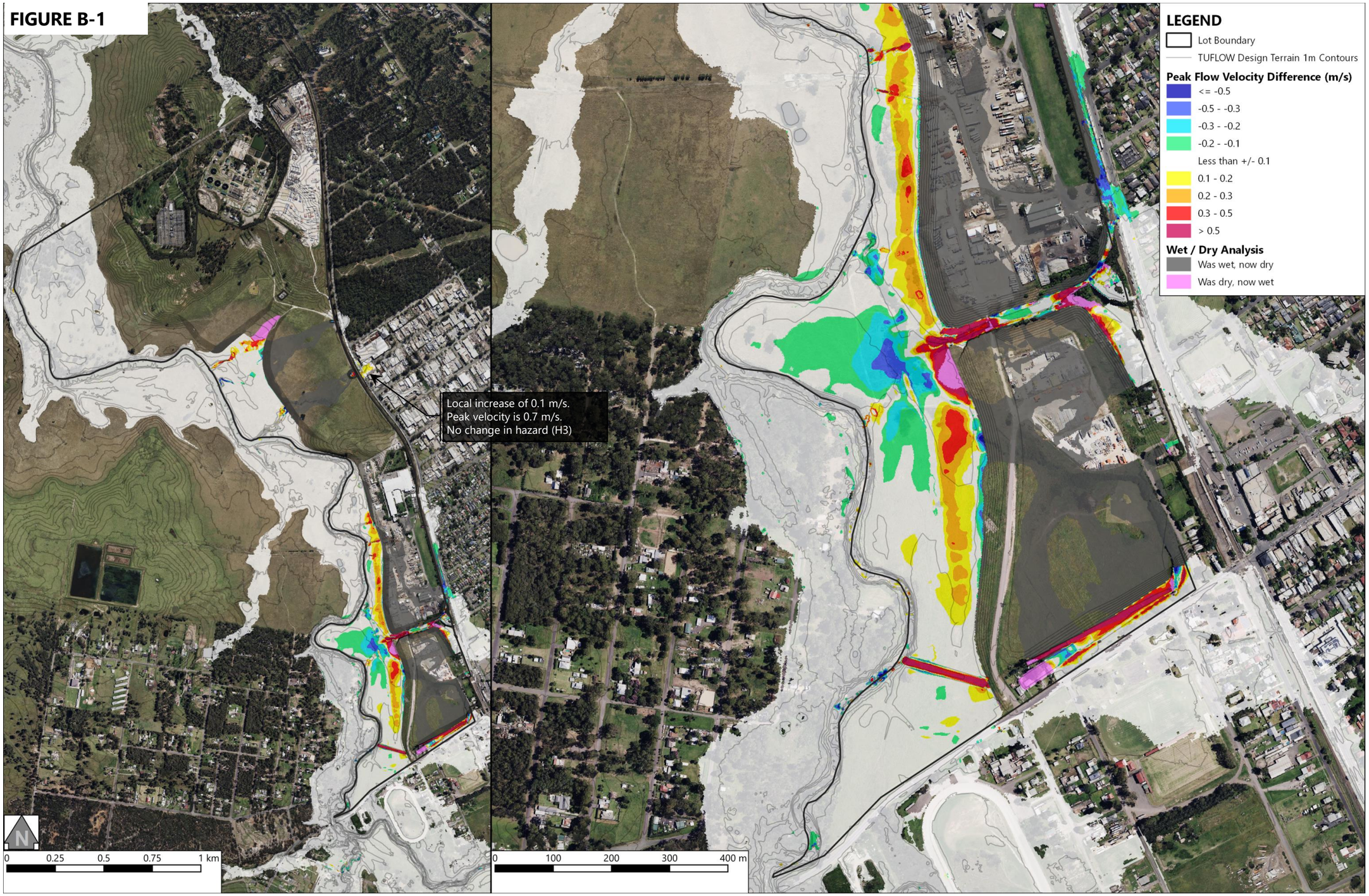
DIFFERENCE IN SIMULATED PEAK FLOOD LEVELS: WORLEY 'ALTERNATE 1' DESIGN LESS EXISTING 1% AEP LOCAL CATCHMENT FLOOD WITH 1% AEP H-N TAILWATER

SIMULATIONS DO NOT INCLUDE PROPOSED GARFIELD RD AND BANDON RD UPGRADES

Attachment B

FLOW VELOCITY DIFFERENCE MAPPING (NO ROAD UPGRADES)

FIGURE B-1

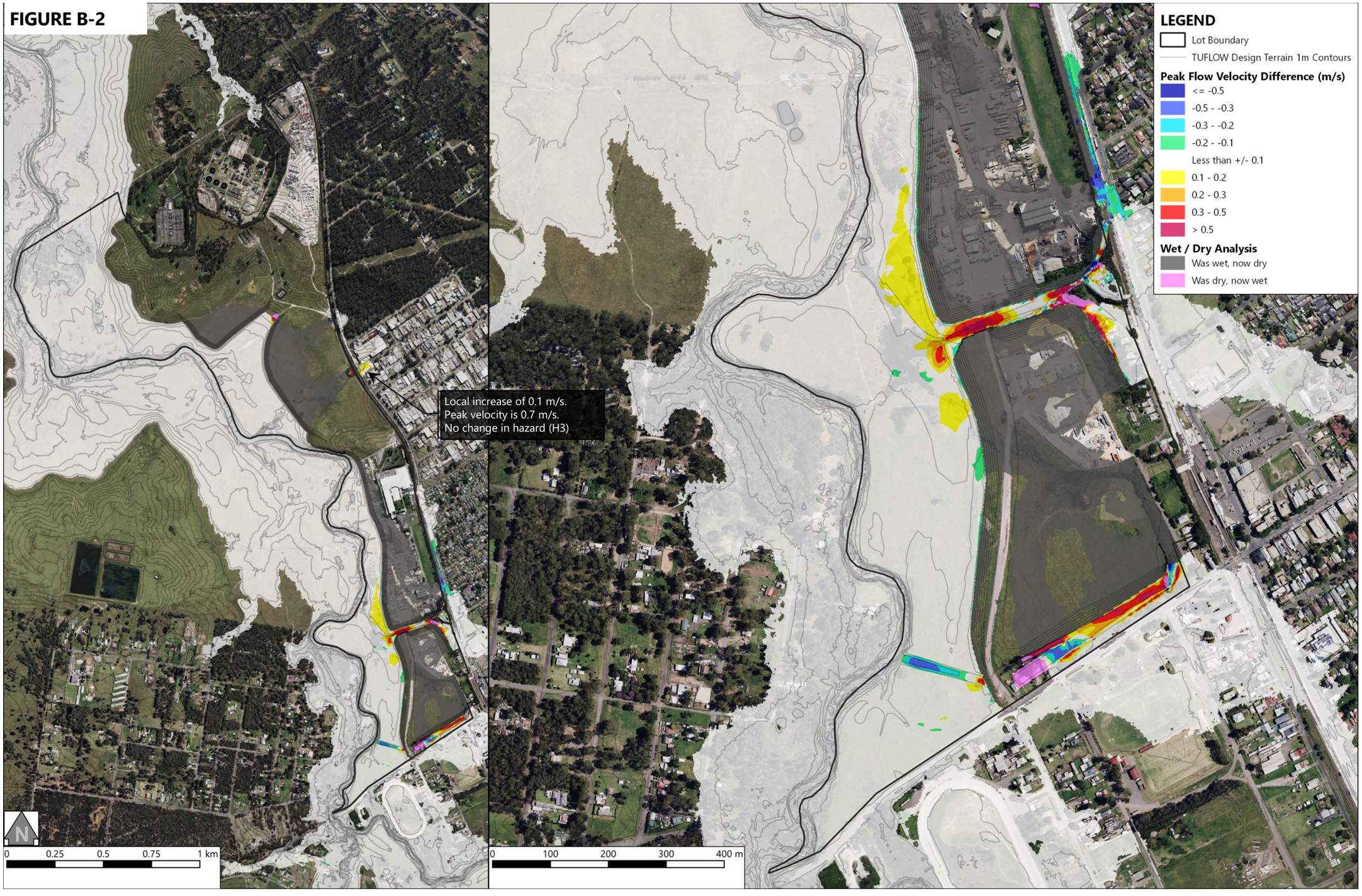


Prepared by:

SAKKARA worley consulting

DIFFERENCE IN SIMULATED PEAK FLOW VELOCITIES: WORLEY 'ALTERNATE 1' DESIGN LESS EXISTING
1% AEP LOCAL CATCHMENT FLOOD (NO TAILWATER)
SIMULATIONS DO NOT INCLUDE PROPOSED GARFIELD RD AND BANDON RD UPGRADES

FIGURE B-2

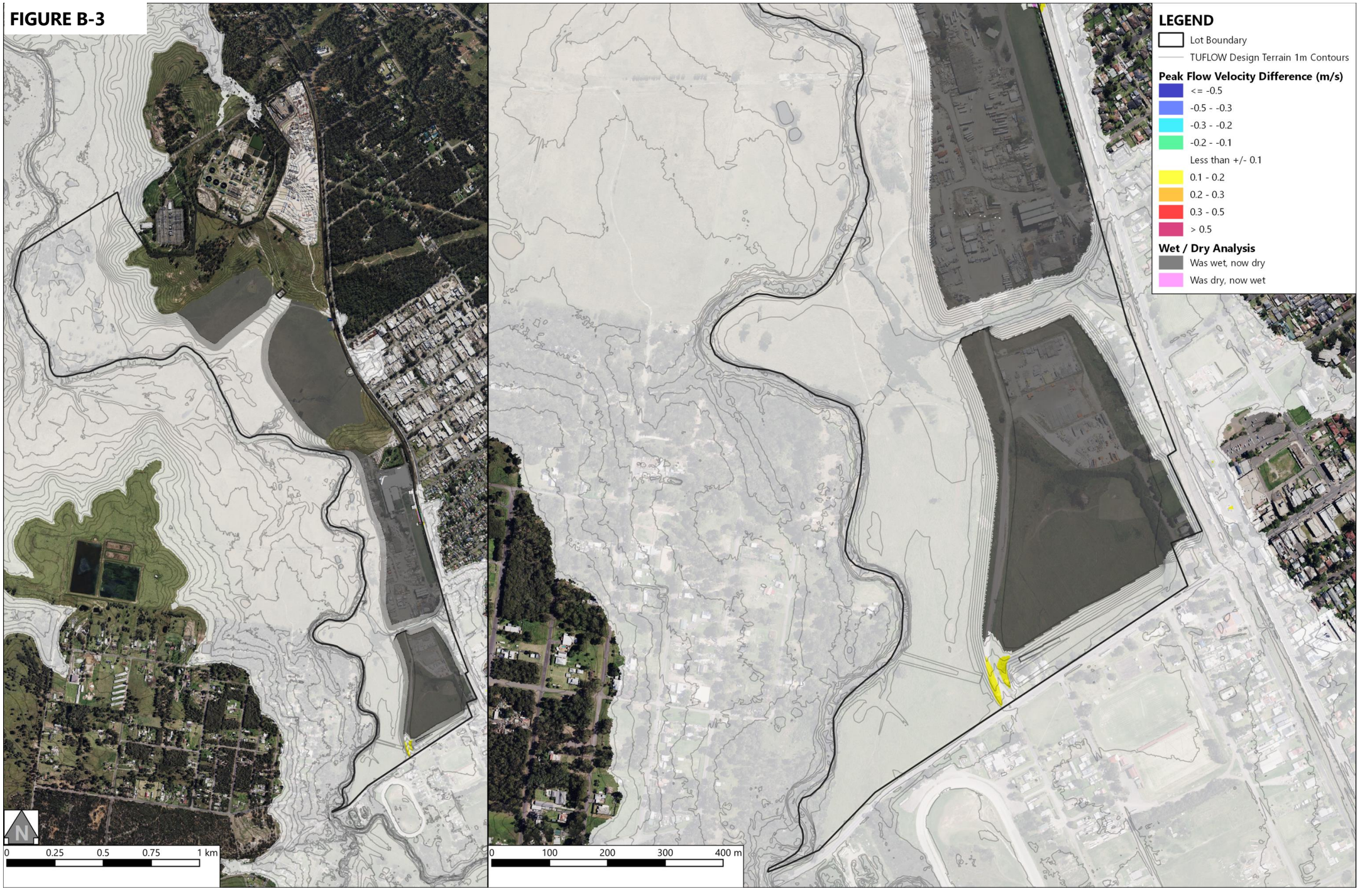


Prepared by:

SAKKARA worley consulting

DIFFERENCE IN SIMULATED PEAK FLOW VELOCITIES: WORLEY 'ALTERNATE 1' DESIGN LESS EXISTING
1% AEP LOCAL CATCHMENT FLOOD WITH 5% AEP H-N TAILWATER
SIMULATIONS DO NOT INCLUDE PROPOSED GARFIELD RD AND BANDON RD UPGRADES

FIGURE B-3



Prepared by:

SAKKARA worley consulting

DIFFERENCE IN SIMULATED PEAK FLOW VELOCITIES: WORLEY 'ALTERNATE 1' DESIGN LESS EXISTING
1% AEP LOCAL CATCHMENT FLOOD WITH 1% AEP H-N TAILWATER
SIMULATIONS DO NOT INCLUDE PROPOSED GARFIELD RD AND BANDON RD UPGRADES