

# CROSS STREET PLANNING PROPOSAL

REPORT ON INTERFACE WITH THE BARGO  
RIVER GORGE

JANUARY 2018  
SA5084  
FINAL  
PREPARED FOR INGHAM PROPERTY DEVELOPMENT PTY LTD



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# EXECUTIVE SUMMARY

This report was originally submitted to Council in August 2016. Since this time, the project team have made a series of amendments to the planning proposal in response to feedback from Council and biodiversity considerations (uncovered through the concurrent Biocertification and Biobanking processes). These changes are summarised in the information package sent to Council in September 2017.

This report has been prepared in response to the recommendations contained within the Wollondilly Council Resolution of 18 July 2016 which is provided at Appendix A and is copied below for reference:

1. *That Council support the proposed buffer to the Bargo River Gorge for exhibition purposes and submission of a Biodiversity certification application to the Minister for the Environment.*
2. *That Council request the proponent to provide a Biocertification Strategy that would result in permanently funded and managed conservation measures for the land proposed to be conserved.*
3. *That Council delegate the General Manager to sign the Biodiversity Certification Application.*
4. *That the proposed buffer to the Bargo River Gorge and Biodiversity Certification Application with supporting document be placed on public exhibition during community consultation for the Planning Proposal.*

Regarding the above, the following matters have been amended (since 18 July 2016):

- Lean Lackenby & Hayward have performed further survey work to better 'ground truth' the property boundary.
  - To 'ground truth' the work to date, and noting the Planning Proposal is occurring concurrently to VPA and Biobanking agreements, the proponent has (using the survey data available) estimated the site boundary as the location of the cliff edge along the Bargo River.
  - The 100m buffer line ensures that at each point, the development footprint is not within 100m of the 'top of bank' measured perpendicularly. This is consistent with Council's Bargo River Gorge resolution.
- A Biocertification Strategy has been submitted to Council following ongoing liaison. This includes provision for 5,000 sqm of 'Passive Recreation Space' and a 5,000 sqm 'carpark' at the request of Council.
  - Since the Council Resolution, the Cross Street Planning Proposal Biocertification Inventory Report has been superseded by the *Biodiversity Assessment Report and Biocertification Strategy* which was submitted to Council in December 2017.
- The Bushfire Report has been revised to align with the Biocertification Strategy, which was informed by the updated survey work (outlined above).
- Revised land use zones in accordance with the Gateway determination.



# 1. INTRODUCTION

This report has been prepared on behalf of Ingham Property Development Pty Ltd (Ingham's), the Proponent for the Cross Street Planning Proposal, to illustrate and provide a technical justification for the proposed buffer between the edge of future residential development and the top of the Bargo River Gorge.

As part of the initial vision for the Cross Street site, Ingham's have sought to integrate and share – through the provision of public access – the Bargo River Gorge, a natural asset which the subject site interfaces with along its southern edge. Achieving an appropriate buffer distance between future large lot residential development on the subject site and the Bargo River Gorge has been something which this Planning Proposal has always supported.

The Cross Street Planning Proposal continues to acknowledge the ecological values of the site and in particular the importance of the Bargo River Gorge. Following the initial lodgement of the Planning Proposal request with Wollondilly Council back in December 2013, further technical investigations have been carried out to better inform and define the proposed indicative development footprint for the subject site, guided importantly by the areas of conservation across the site which includes the buffer to the Bargo River Gorge.

Following the review and consideration of the results from the further technical investigation work, as well as the refinement of the indicative concept layout within the development footprint, an informed assessment of the design and configuration of the development footprint edge at the interface with the Bargo River Gorge has been undertaken. The methodology for determining an appropriate and informed buffer along the Bargo River Gorge in this location is further discussed later in this report, supported by the following technical inputs:

- *Bargo Gorge Setback Statement*, prepared by Ecological Australia (10 December 2015).
- *Bargo River Gorge Buffer Analysis*, prepared by AE Design Partnership (January 2018).
- *Preliminary Stormwater Management Strategy*, prepared by Hyder Consulting (13 November 2015).
- *Biodiversity Assessment Report and Biocertification Strategy*, prepared by Eco Logical Australia (December 2017).

Further, it should be recognised that *Biodiversity Certification* under Part 7AA of the NSW Threatened Species Conservation Act 1995 (TSC Act) has been identified as the appropriate policy tool to ensure conservation and development outcomes are clearly identified as part of the rezoning process and thus streamline subsequent biodiversity assessment at the development application stage for the Cross Street site.

## 2. BACKGROUND

The determination of an appropriate buffer distance between the Bargo River Gorge and any future residential development, in particular east of the existing periphery of Tahmoor, has been a long running agenda item for Wollondilly Shire Council over recent years. Landowners who directly interface with the Gorge have been cognisant of the issue and concerns raised by local environmental groups.

Over the past twelve to eighteen months Ingham's in particular have been collaborating with both Wollondilly Shire Council and key members of the National Parks Association in order to best inform the determination of an appropriate buffer between future development at the interface with the Bargo River Gorge, and the Gorges 'top-of-bank'. A summary of the various key discussions and actions are summarised in Table 1 below.

Ingham's Property Development, in parallel with ongoing discussions with the relevant key Stakeholders, commissioned a number of further investigations targeted around the Bargo River Gorge to best inform what the buffer setback should be. The commissioning of the additional investigations was made to ensure that an informed and educated position could be formed in response to the following key questions which had risen following the various stakeholder discussions:

- What should be the numerical buffer distance for the Bargo River Gorge?
- Where should the Bargo River Gorge setback be measured from? Top of bank to the rear boundary line of a residential property? OR Top of bank to any residential building?
- Who will own/manage the future Bargo River Gorge buffer lands?
- Will the Bargo River Gorge be publicly accessible from within the future residential subdivision of the Cross Street site?

Section 3 of this Report 'Methodology' goes on to further explain the key technical inputs which were commissioned to guide an informed response to each of the above questions as they relate to the Cross Street Planning Proposal.

Table 1 – Summary of Key Actions/Milestones to Date

Action/Milestone	Date	Comment
Lodgement of original Planning Proposal Request	December 2013	Ingham Property Development Pty Ltd formally lodged the Cross Street Planning Proposal with Council in December 2013
Council resolution at its meeting to forward the Cross Street Planning Proposal to the Minister for Planning & Environment for Gateway Determination.	22 April 2014	As part of Council's resolution at this meeting, it was recommended that any future development as the Cross Street Planning Proposal site is to <i>incorporate a buffer of at least 100 metres from the top of the bank of the Bargo River Gorge <u>to any residential building</u></i> .
Gateway Determination received from the Department of Planning & Environment to progress the Cross Street Planning Proposal.	17 July 2014	Positive Gateway Determination received to proceed forward subject to conditions, in particular consultation with a the relevant public authorities.
Notice of Motion tabled to Council in relation to the Bargo River Gorge buffer.	15 September 2014	A Notice of Motion was put before Council was put forward at its Ordinary Meeting requesting that the resolution of 22 April 2014 be changed to read as follows: ' <i>...incorporate a buffer of at least 100</i>

Action/Milestone	Date	Comment
		<p><i>metres from the top of the bank of the Bargo River Gorge to the <u>rear of any property boundary</u>.</i></p> <p>The key change to the resolution was for the buffer to be a measurement from the <i>rear property boundary</i>, rather than the original intention for it to be taken from any <i>residential building</i>.</p>
Meeting with Wollondilly Council's Strategic Planning Officers	25 September 2014	A meeting to discuss the key actions for the Proponent and Council in relation to the Gateway Determination. A key focus of the meeting was around the options to be considered in relation to biodiversity conservation and management.
Letter to Councillors and representation at Community Forum	10 November 2014	<p>A letter was sent to Council's Strategic Planning team and relevant Councillors in relation to the proposed Response to the Notice of Motion on the Bargo River Gorge buffer as it relates to the Cross Street Planning Proposal. (Refer to <b>Appendix A</b> of this Report for a copy of this Letter).</p> <p>Ingham's were represented at the Community Forum and an address of Item PE2 on Council's Ordinary Meeting of Council Agenda for 17 November 2014 was made.</p> <p>The address recommended that a resolution on Item PE2 be deferred until such time that additional environmental investigations (in particular biodiversity and conservation) are completed in response to the Government Agency submissions and submitted to Council for review and consideration.</p>
Onsite inspection with Wollondilly Council's Strategic Planning team and Environmental Officer, followed by a briefing with members from the National Parks Association	11 November 2014	<p>Site visit undertaken with the relevant Council Officers, accompanied by Ingham's, Eco Logical Australia and Urbis.</p> <p>This site inspection was followed by a meeting with relevant members of the National Parks Association of NSW, held at Council's Officers. This was an opportunity to inform them of the status of the Cross Street Planning Proposal and inform them of the extensive work undertaken to date, as well as the ongoing work. A particular focus of the discussion was on the Bargo River Gorge setback.</p>
Letter to Council confirming agreed approach to investigating the Bargo River Gorge buffer moving forward.	14 November 2014	This letter was prepared and issued to confirm that Ingham's received support from the National Parks Association to request that any further determination in relation to Item PE2 (on Council's

Action/Milestone	Date	Comment
Planning Proposal progress meeting with Wollondilly Shire Council's Strategic Planning team and Environment team.	28 July 2015	Ordinary Meeting Agenda for 17 November 2014), is to be deferred until such time that additional environmental investigations are completed and submitted to Council. (Refer to <b>Appendix B</b> of this Report for a copy of the Letter).
Ongoing updates with Wollondilly Shire Council	August 2015 – March 2016	A key focus of this meeting was around the approach and methodology for to undertaking the Biodiversity Inventory reporting for the Cross Street Planning Proposal.
Council resolution	18 July 2016	Ongoing liaison with Council's Strategic Planning team on the progress of the additional reporting and technical investigations – in particular the surveying of the top of the Bargo River Gorge and the additional seasonal flora and fauna survey work.
Proponent response to 18 July 2016 Council Resolution	13 September 2017	Subject to amending this report to exclude any future road reserve forming part of the 100m buffer to Bargo River Gorge and the provision of a Biocertification Strategy, Council resolved to sign the Biocertification Application and place the Planning Proposal on public exhibition.
		Inghams provide response package to Council which included Biocertification documentation prepared by Eco Logical Australia, and updated (proposed) land zoning and minimum lot size maps in response to ongoing liaison with Council regarding 'Passive Recreation Space'.

### 3. METHODOLOGY

The following section sets out the supplementary technical investigation work commissioned by Ingham's to assist in forming a position on an appropriate buffer distance between the Bargo River Gorge top of bank and any future residential development on the Cross Street site.

As discussed under Section 2 of this report, there were a number of underlying questions (from Wollondilly Shire Council, the National Parks Association and the Proponent) in relation to determining a 'suitable' and 'appropriate' buffer setback in relation to the site. In light of this, the following key technical inputs were commissioned by Ingham's:

- Survey of the top of bank of the Bargo River Gorge along its interface with the Cross Street site, carried out by Lean Lackenby & Hayward (included within Appendix D).
- A review of the biodiversity values of the top of the Bargo Gorge and the ecological adequacy of a buffer along the interface between the Gorge and the future proposed Cross Street development footprint, undertaken by Eco Logical Australia (refer to Appendix E).
- A review and update for the proposed *Preliminary Stormwater Management Strategy*, with particular regard to strategic location and size of future stormwater detention basins (as required), undertaken by Hyder Consulting.

(Please note that a copy of the updated Strategy is included under separate cover with the other supporting documentation provided to Wollondilly Council in response to key Government Agency comments).

- A review and update of the *Aboriginal Cultural Heritage Assessment* was undertaken. The findings of this assessment informed the revisions to the proposed development footprint, with particular regard to the setback requirements around three identified Indigenous archaeological sites.

(Please note that a copy of the updated *Aboriginal Cultural Heritage Assessment* is included under separate cover with the other supporting documentation provided to Wollondilly Council in response to key Government Agency comments).

- The undertaking of consolidated Bargo River Gorge Buffer Analysis informed by the above technical investigations and an onsite visual assessment, prepared by AE Design Partnership (refer to Appendix F).

The above work has been carried out over the past couple of years, with each piece of investigation integrating with and informing the other. The initial primary aim was to carry out a detailed survey of the top of bank along the Bargo River Gorge to allow a surveyed point of reference to be determined. Once this was established, this then enabled the following key actions to be undertaken:

- (a) Refinement of the proposed development footprint, accompanied by an indicative subdivision concept for the site.
- (b) The refinement of the development footprint was informed by further detailed biodiversity survey work carried out by Eco Logical Australia, in particular the identification of existing hollow bearing trees on site as well as understanding the benchmarks and targets for biodiversity certification on site.
- (c) A peer review and update of the Aboriginal Cultural Heritage Assessment (prepared by Urbis, Heritage) confirmed three (3) identified sites within the Cross Street site. The identification of these has been a key consideration of the revised development footprint, as well as the sensitive location of proposed stormwater detention basins.
- (d) The results from the latest biodiversity investigations and survey work also required the refinement of the preliminary Stormwater Management Strategy, with particular regard to the location and size of proposed stormwater detention basin requirements. Refinement to stormwater detention basin locations and sizes were made in order to minimise impacts on sensitive hollow bearing tree locations; ensure that sufficient areas were set aside so as to accommodate the basin as well as any required batter treatments without

adversely impacting on the biodiversity conservation/retention targets; and importantly to ensure that water quality management through detention is best managed on site.

- (e) In order to assess potential vegetation impacts of the proposed detention basins a representative assessment of basin geometry was completed. Using 12d software, the geometry of Basin 9 was modelled in 3 dimensions to determine the area required to allow construction of the basin, including batters. (Refer to Section 3.2.1 of the *Preliminary Stormwater Management Strategy* for further detailed discussion on this provided under separate cover).

Taking into account a variety of factors including ecological, grading and aboriginal heritage the Preliminary Stormwater Management Strategy identified that a number of catchments will be required to provide individual lot detention (refer to Appendix A of the Strategy). The revised development footprint has taken this into consideration, enabling it to be minimised.

- (f) A review of the Bushfire Asset Protection Zones (APZs) was required to be carried out for the revised development footprint.
- (g) Based on a refined development footprint for the Cross Street site and the surveyed top of bank, a 'Buffer Analysis' assessment was undertaken. This analysis examined closely the setback distances along the Bargo River Gorge, measured from the top of bank.

A discussion around the key findings from the above Buffer Analysis work is presented in Section 4 of this Report.



## 4. KEY TECHNICAL FINDINGS

This section of the report seeks to set out the key findings and justification for the proposed buffer setback to the Bargo River Gorge.

As discussed in earlier Sections of this report, a number of key technical considerations have been taken into account to inform the revised development footprint and indicative subdivision concept for the Cross Street site. These considerations namely relate to:

- The need to balance biodiversity and conservation outcomes for the site.
- Integrating, along with biodiversity conservation and Indigenous archaeology protection, a site responsive stormwater management strategy to support future development across the site.
- Ensuring opportunities to provide and maintain public access to the Bargo River Gorge reserve, in particular the opportunity to establish look out points/places to gather.
- Designing in response to the sites topographical constraints.

### 4.1. BUFFER SETBACK MEASUREMENTS

Based on the reconfigured development footprint, AE Design Partnership undertook an assessment of the setback distances between the top of bank of the Bargo River Gorge and the future residential development on the Cross Street site.

This analysis was further informed by an indicative subdivision concept as illustrated in **Figure 1** below

Figure 1 – Indicative Subdivision Layout



Utilising the indicative subdivision concept, which maintains in the order of 240 large residential lots ranging in size generally from 700m<sup>2</sup>-975m<sup>2</sup> (primarily along the interface with the East Tahmoor lands) up to circa 4,000+ square metres across the eastern portion of the site, the Buffer Analysis identified the following:

- The consolidation of the proposed detention basin zones (inclusive of associated batters) will ensure that a buffer of at least 100 metres from the top of bank (for the Bargo River Gorge) is achieved.

- The development footprint (including all roads, basins and residential lots) will be located a minimum of 100 metres from the top of bank.
- The proposed buffer 'zone' offers significant opportunity for public access to the Bargo River Gorge, in particular access to key vantage points.
- Asset Protection Zones (APZs) do not encroach into the proposed E2 Environmental Conservation zone, which includes the Bargo River Gorge buffer.

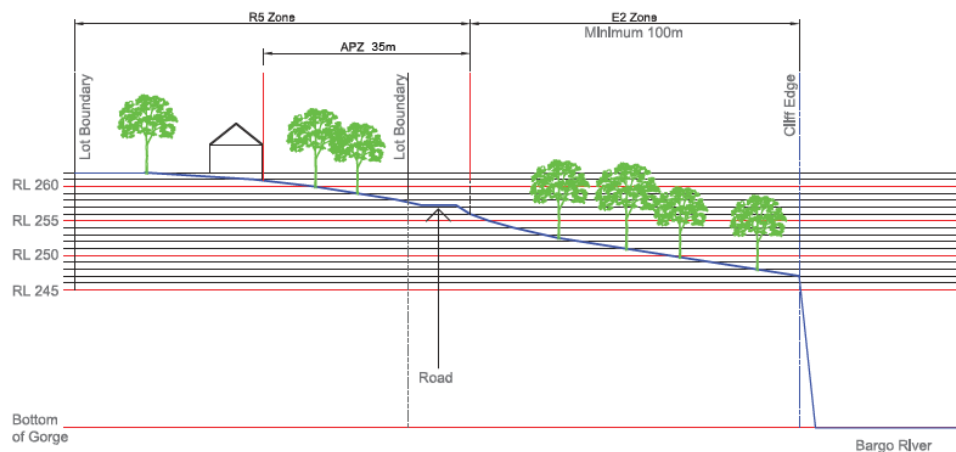
Figure 1 above illustrates the measured setback distances between the Bargo River Gorge (top of bank) and the proposed indicative subdivision concept for the Cross Street site.

Figure 2 provides two detailed 'typical' cross sections for the proposed Bargo River Gorge buffer.

Please Note: the Sections are marked on Figure 1.

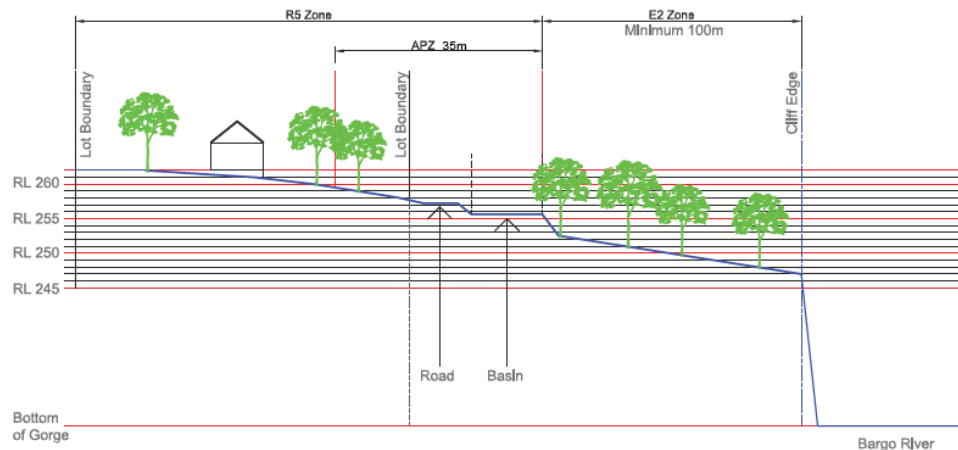
Figure 2 – Typical Sections for Bargo River Gorge Buffer (ae design partnership)

**SECTION AA**



Picture 1 – Section AA

**SECTION BB**



Picture 2 – Section BB

Further details in relation to the Bargo River Gorge Buffer Analysis are included in Appendix E to this report.

## 4.2. ECOLOGICAL RESPONSE TO PROPOSED SETBACKS

A review of the amended development footprint, accompanied by the indicative subdivision layout, was undertaken by Eco Logical Australia – the project Ecologists – to advise the design team on the ecological adequacy of the proposed setback(s) from the Bargo River Gorge.

The key findings from the review can be directly summarised as follows (please refer to **Appendix D**):



- Vegetation along the top of Bargo Gorge consists primarily of Narrow-leaved Ironbark – Broad-leaved Ironbark – Grey Gum woodland and Red Bloodwood – Grey Gum Woodland. This vegetation is in good condition with native species dominating all strata.
- Following the undertaking of targeted surveys across the study area (including the top of the Gorge), no threatened flora species were reordered.
- Vegetation along the top of the Gorge provides potential habitat for a variety of fauna, although microchiropteran bats were the only threatened species recorded in this area during surveys.
- Notwithstanding the above, the vegetation along the top of the Gorge is still likely to provide habitat (either foraging or breeding) for certain threatened species. (Please refer to **Appendix D** for further discussion on this).
- It is recognised that the land within the ‘corridor’ (i.e. the Bargo Gorge Buffer area) is to be zoned E2 Environmental Conservation. This area will be managed for its conservation values in perpetuity.
- The E2 corridor will be actively managed for weeds and would ensure that recreational impacts do not occur outside of the designed paths.
- Highly mobile fauna such as birds and bats are able to utilise fragmented habitat, but less mobile species such as ground-dwelling or arboreal mammals, reptiles and amphibians can be impacted by loss of connectivity.
- The proposed corridor width, (not counting the adjoining vegetation in the Gorge itself) is considered sufficient to enable threatened fauna to continue to traverse along the Gorge and into adjacent areas. This will not prevent the exchange of genetic material.
- The further protection of vegetation along the key drainage channels that traverse the Cross Street site, will ensure that the potential habitat for all the above mentioned threatened species will be conserved and will not become fragmented as consequence of future proposed development.
- Notwithstanding the above, it is imperative that edge effects and access are managed to ensure impacts on the current corridor are minimised.

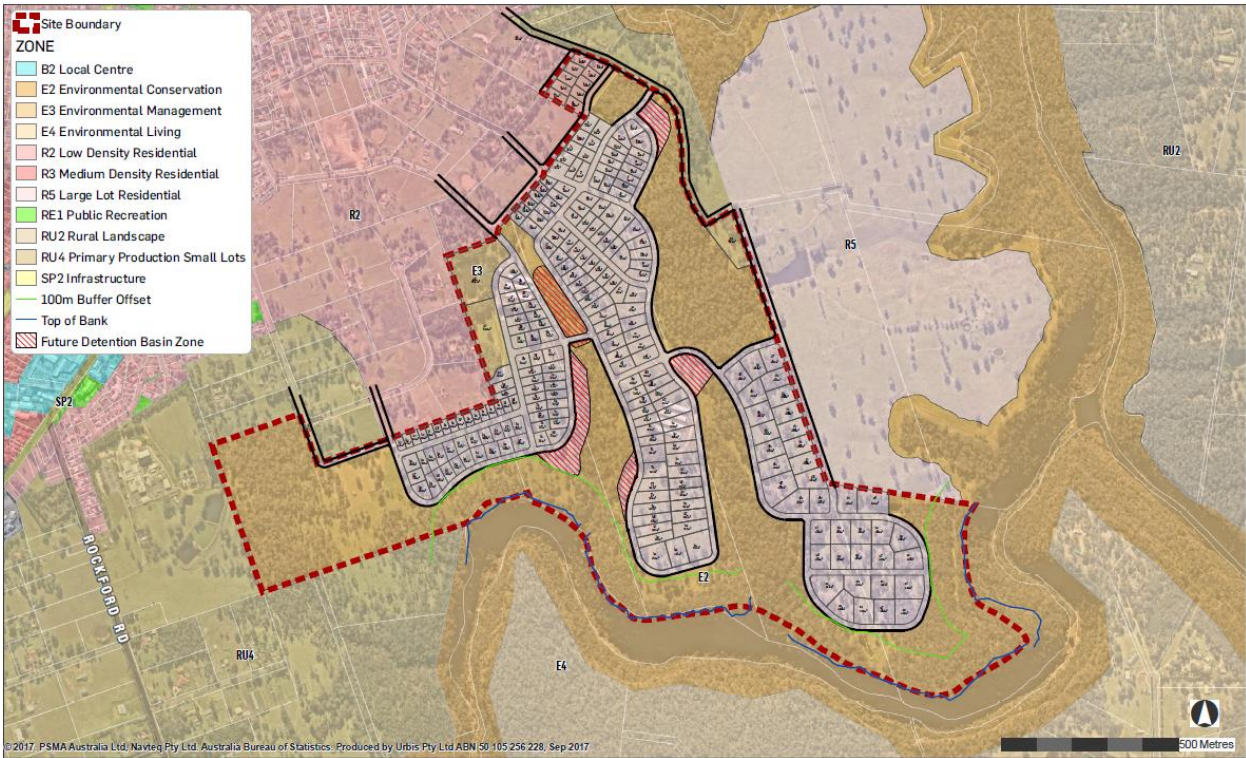
It is the view of Eco Logical Australia that the current proposed development footprint for the Cross Street site *protects the most consolidated stands of vegetation at the site, maintains connectivity between vegetated areas and along the Bargo Gorge and in Eco Logical Australia’s opinion would not compromise the function of the current vegetation along the Bargo Gorge as a corridor for flora and fauna.*

### **4.3. PROPOSED ZONING AND MANAGEMENT**

Following the consideration of the above key technical investigation findings, it is proposed that the Bargo River Gorge buffer will be integrated within the E2 Environmental Conservation zone lands as illustrated in Figure 3 – Proposed Cross Street Site Zoning Map below. Further, it is not envisaged that the proposed E2 zone will preclude the appropriate construction of pathways and/or a viewing platform within the corridor, so long as these are constructed in an environmentally sensitive manner.

This Report acknowledges that the Cross Street Planning Proposal site (inclusive of the proposed Bargo River Gorge buffer) currently form part of a proposed Biodiversity Certification application to ensure conservation and development outcomes are clearly identified as part of the rezoning process, and subsequently therefore streamline biodiversity assessment at the development application phase (please refer to the Biodiversity Certification Strategy included under separate cover).

Figure 3 – Proposed Cross Street Site Zoning Map



As stated in the Biodiversity Certification Strategy, prepared by Eco Logical Australia, the intent of the Planning Proposal is to protect and manage in perpetuity the conservation of 75.26 ha of vegetation, which equates to 66% of all the vegetation mapped within the sites subject Biodiversity Certification Area.

The proposed 'conservation measures' is the establishment of a Biobank site and transfer of land to Council. Management measures will include managing for weeds and feral animals, fencing and fire management.

## 5. CONCLUSION

As this Report has demonstrated, a number of key environmental, engineering and design inputs over the past couple of years have informed the direction and configuration of the proposed development footprint for the Cross Street site.

Therefore, informed by the various key technical inputs, it is the view of the Proponents technical team that a buffer between the top of bank (for the Bargo River Gorge) to any future residential development on the Cross Street site, should ensure that:

- The development footprint maintains (at minimum) a 100 metre setback from the top of bank.

It is recommended that Council considers this report and its findings as part of the finalisation of the Cross Street Planning Proposal.

# DISCLAIMER

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

**APPENDIX A**

**WOLLONDILLY COUNCIL RESOLUTION – 18  
JULY 2016**

Report of Planning and Economy to the Ordinary Meeting of Council held on Monday 18 July 2016

**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

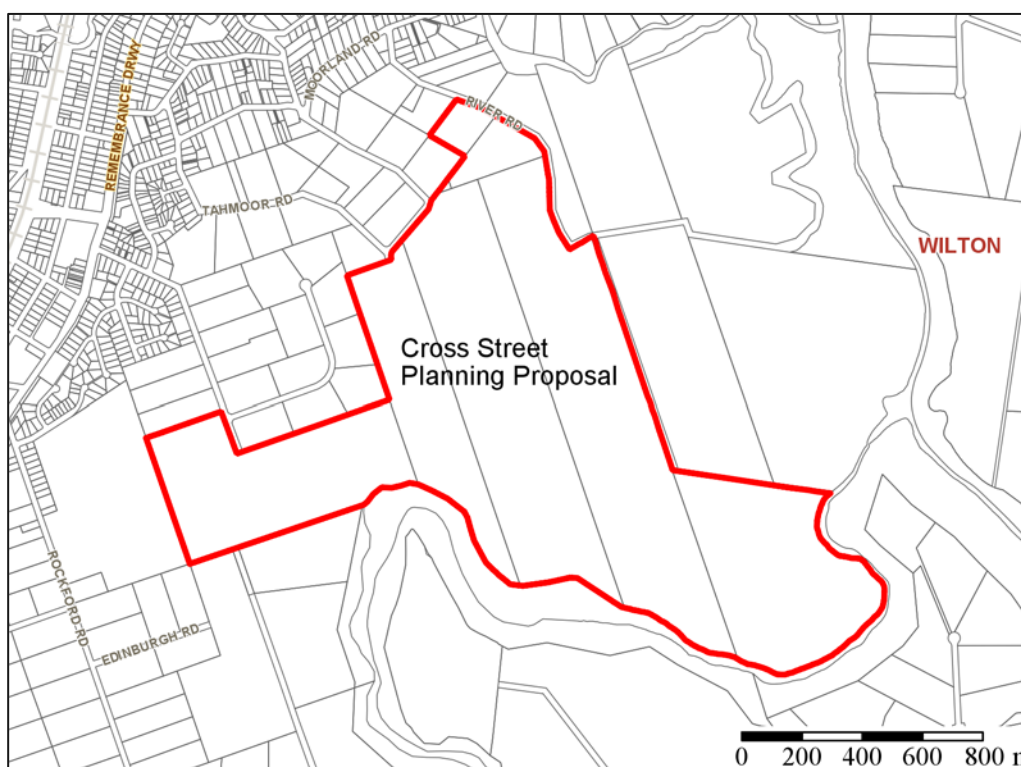
**PE6 Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

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TRIM 7884

**Proponent:** Urbis  
**Owner:** Ingham Property Development Pty Ltd

Planning & Economy



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**LOCATION MAP**

Stage	Completed
Preliminary notification	12 March 2014
Gateway Determination	17 July 2014
Consultation with Public Agencies	July/August 2014
Specialist Studies	Ongoing
Public exhibition/community consultation	Not yet complete
Referred to Minister for Publication	Not yet complete



**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

**EXECUTIVE SUMMARY**

- The purpose of this report is to seek Council support for submission of a Biodiversity Certification Application and exhibition of a proposed buffer from the Bargo River Gorge to facilitate continued assessment of the Cross Street Planning Proposal.
- At its Ordinary Meeting held April 2014, Council resolved to forward the Planning Proposal to the Department of Planning for Gateway Determination. At this meeting, Council requested further detail on the buffer between proposed residential land and the Bargo River Gorge.
- The proposed Biodiversity Certification Application seeks to ensure the site's biodiversity values are 'improved or maintained' whilst providing a mechanism to offset the land proposed for development.
- Under legislation, a person who makes a relevant planning application or public submission is required to disclose any reportable political donations. The disclosure requirements extend to any person with a financial interest in the application or any associate of the person making a public submission. No disclosure of political donation has been made in association with this application.
- It is recommended that:
  - Council support the proposed buffer to the Bargo River Gorge and the submission of a Biodiversity certification application by the Council; and;
  - Council request the proponent to provide a Biocertification Strategy that would result in permanently funded and managed conservation measures for the land propose to be conserved.
  - Council delegate authority to the General Manager to sign the Biocertification Application; and
  - The Bargo River Gorge buffer proposal, Biodiversity Certification application and supporting documents be placed on public exhibition.

**REPORT**

**1.1 BACKGROUND TO PLANNING PROPOSAL**

The Cross Street Planning Proposal aims to rezone rural land at East Tahmoor for the purpose of low density and large lot residential, environmental conservation and management purposes.

The rezoning would enable creation of approximately 240 lots with access from Cross Street and River Road and the residential land would include minimum lot sizes of 700, 975, 1500 and 4,000 square metres with the majority being 1500 square metres.

**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

The proposed residential component of the Planning Proposal is in accordance with the Structure Plan for Tahmoor which forms part of the Wollondilly Growth Management Strategy 2011.

At the April 2014 Ordinary Meeting, Council resolved to forward the Cross Street Planning Proposal to the Department of Planning for Gateway Determination. It was also resolved (in part):

2. *That the future development of the land within the Cross Street Planning Proposal incorporate a buffer of at least 100 metres from the top of the bank of the Bargo River Gorge to any residential building. That the applicant be advised that the studies prepared and submitted during the rezoning process will need to demonstrate how this will be achieved and what mechanisms (eg zoning, restrictions on title) will be used to provide certainty of this outcome. To enable the public to understand what is proposed in respect of this buffer the proponent shall also submit a typical cross section drawn to an appropriate scale showing the gorge, the proposed E2 zone, the asset protection zone required for bushfire protection, the area required for waste water disposal (if the lots are not connected to a reticulated sewerage system) and the location of residential buildings.*

*Additionally a management plan shall be prepared to outline how the buffer area will be maintained and managed. Both the cross section and the management plan shall be placed on exhibition with the proposal should it receive a positive gateway determination.*

This issue was addressed in a report to the November 2014 Ordinary Meeting. It was resolved at that meeting to defer the matter for a further report once additional environmental studies into bushfire and biodiversity were completed. These studies have now been completed and submitted to Council.

**1.2 BARGO RIVER GORGE BUFFER**

The proponent has provided a report which details the proposed buffer arrangements to the Bargo River Gorge.

The submitted report illustrates, by way of a cross section, the proposed setbacks for the E2 Environmental Conservation land use zone, residential land use zones, the lot boundary, asset protection zone, internal roads and future dwellings.

The area required for waste water disposal has not been detailed in the cross section as Sydney Water has indicated that there is capacity for lots to be connected to their reticulated sewerage system.



**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

A plan of the proposed Bargo River Gorge Buffer is provided at Attachment 1 and cross section plan of the buffer is provided at Attachment 2 to this report.

The key features of the proposed buffer and concept subdivision layout are as follows:

- All residential lots will be located (at minimum) 100 metres from the top of bank to the nearest property boundary. Any future residential dwelling will be located greater than 100 metres from the top of bank.
- A perimeter road is proposed to be located within the 100 metre buffer referred to above and will be zoned for residential purposes. This effectively means that at its narrowest, the E2 Environmental Conservation zoned land will be 84 metres in width measured from the top of bank to the road. According to the site's ecologist, this width is sufficient to provide connectivity and enable threatened fauna to continue to traverse along the Gorge and into adjacent areas. The vegetation along the top of the Gorge is generally in good condition and provides potential habitat for a variety of fauna and certain threatened species.
- The perimeter road will form part of the Asset Protection Zone which is in accordance with the requirements outlined in the NSW Rural Fire Service guidelines for bushfire hazard management, *Planning for Bushfire Protection (PFBP)*. Asset Protection Zones will not encroach on the proposed E2 Environmental Conservation land use zones.
- The perimeter road would also provide effective vehicular access for fire fighting purposes, in accordance with PFBP and provide opportunity for general access and casual surveillance of the future Bargo River Gorge conservation area.
- The E2 Environmental Conservation zoned land alongside the Gorge and throughout the site protects the most consolidated stands of vegetation and will form a connected corridor. This land will be managed for its conservation values in perpetuity as discussed elsewhere in this report. Any biocertification strategy developed for the site will include strategies for management of weeds, recreational impacts, edge effects and access.

**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

**BARGO RIVER GORGE LANDSCAPE CONSERVATION AREA**

In March 2015, the National Trust listed a corridor on either side of the Bargo River Gorge as Landscape Conservation Area. The National Trust is a community based non-government organisation hence the listing has no legal force. However it does highlight the Trust's opinion in terms of the scenic and ecological value of the land. The Trust promotes the use of development controls to permit land uses which respect the character of the place.

**JR STUD BUFFER COMPARISON**

The JR Stud E2 Environmental Conservation Zoned land (E2 land) will adjoin the Cross Street E2 land in the south eastern corner of the site. On the JR Stud site the E2 land at this point is approximately 85m from the top of the Gorge. The Cross Street E2 land including a road will be a minimum of 100m from the top of the Gorge.

Council has required the dwellings within the JR Stud site to be setback a minimum of 150m from the lip of the Gorge, as per its resolution from the February 2013 Ordinary Meeting.

To maintain consistency in terms of any future buffer, the same provision requiring dwellings to be setback a minimum of 150m from the top of the Gorge should be applied to the Cross Street Planning Proposal. This can be a requirement of any future development control plan for the site. In doing so however the current concept plan may require amendment to accommodate dwellings in the south western corner of the site.

**1.3 BIODIVERSITY CERTIFICATION**

**LEGISLATIVE FRAMEWORK**

Legislation for biodiversity certification is provided under Part 7AA of the *Threatened Species Conservation Act 1995* (TSC Act).

Biodiversity certification is a process which aims to ensure that biodiversity values are 'improved or maintained', so that losses from clearing are offset by achieving real gains in the condition and habitat value of vegetation.

**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

There are a number of benefits to biodiversity certification, including;

- Better environmental outcomes from urban development, at lower cost
- By ensuring that conservation issues are considered early in the planning process, new urban areas will 'improve or maintain' biodiversity values
- Areas of high conservation value are identified and protected, and, any clearing or loss of other habitat is offset
- Where certification is conferred for development areas, it 'switches off' the requirement for Development Applications to address biodiversity issues. This can save time and money for landowners and local government. It speeds up land release, and improves housing affordability.

The legislation stipulates that only planning authorities can apply to the Minister for the Environment to have biodiversity certification conferred over an area of land.

If the Council agrees to apply to have biodiversity certification, it would be responsible for duties associated with being the applicant. These include facilitating a public exhibition and preparing a post exhibition submissions report and then submitting the final signed biodiversity certification application, biodiversity certification strategy, supporting documentation and post-exhibition submission report to the Minister.

The proponent, is also required to sign the biodiversity certification application form and will be responsible for the preparation of studies for the biodiversity certification application and, if biocertification is conferred on the land, for the preparation, implementation, monitoring, reporting and review of the management plan.

If biocertification is conferred on the land, the ongoing reporting and review obligations and enforcement will be the responsibility of the Office of Environment and Heritage.

**BIODIVERSITY CERTIFICATION PROPOSAL**

Approximately 78.24 ha of the 166.52 ha site is proposed for residential related development.

The site contains approximately 114.94 ha of native vegetation and the proposed residential development would involve the removal of 35.88 ha of native vegetation. This includes 9.15 ha of Cumberland Plain Woodland (CPW) and Shale Sandstone Transition Forest (SSTF) vegetation which are critically endangered ecological communities (CEECs) and listed as having high conservation value.

**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

In addition, some of the vegetation within the site along the Bargo River is within an area mapped as Priority Conservation Lands (PCL) within the Cumberland Plain Recovery Plan (2011).

PCL's are land identified as the best remaining opportunity to secure long-term biodiversity benefits for the recovery of threatened species, populations and ecological communities on the Cumberland Plain.

To address this issue the proponent, would like to pursue a biodiversity certification application and to this end have engaged consultants to prepare the required studies and documentation to support such an application.

In this regard Council has received a Biocertification Inventory Report which details a biocertification assessment for the site and options for achieving conservation measures. The Report considers the loss of biodiversity values associated with vegetation clearance on the Planning Proposal site and the biodiversity gains that would be achieved as a result of offsets and mitigation measures on land within the Planning Proposal site. A copy of the Plan of Biodiversity Certification proposal is provided at Attachment 3 to this report.

It is proposed to permanently protect and manage 88.28 ha of land located within the site including 45.27 ha of moderate to good condition SSTF and 2.18 ha of moderate to good condition CPW. Approximately 78.24 ha of land within the Planning Proposal site is proposed for development including 9.15 ha of SSTF and CPW.

The biodiversity inventory report details two options for permanent conservation being:

1. A permanently managed and funded conservation measure such as registration of a Biobank site under Part 7A of the *Threatened Species Act 1995*, or
2. A permanently managed conservation measure such as classification of land as Community Land under the Local Government Act 1993 which is managed as a 'natural area'.

Funding for permanent protection and management of the land could be achieved either through:

- biobanking the areas to be conserved which would provide funding to manage the land and then its management by either the proponent, a third party or Council or
- by dedication of the land to Council with a funding arrangement as detailed in the Dedication of Lands Policy and management of Community Land as a 'natural area'.

**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and  
Biodiversity Certification Application**

**CONSULTATION**

**2.1 FORMAL CONSULTATION WITH COUNCIL STAFF THAT PROVIDE SPECIALIST  
COMMENT**

The Strategic Planning team has been working closely with Environmental Services to progress biodiversity certification opportunities associated with the site.

Environmental Services have reviewed the draft Biodiversity Certification Assessment Report & Biocertification Strategy and are largely in support of its direction.

**2.2 CONSULTATION WITH PUBLIC AGENCIES**

The Office of Environment & Heritage (OEH) have been consulted regarding the proposal for Biocertification and have advised that early liaison with them is recommended to discuss key points. They have provided details as to the preparation of the documentation and formal lodgement of the application.

**2.3 COMMUNITY CONSULTATION**

As part of the Biodiversity Certification application process the application and supporting documentation will be publicly exhibited with the planning proposal during the community consultation period.

**RELEVANT POLICIES & LEGISLATION**

- *Environmental Planning and Assessment Act, 1979 (EP&A Act, 1979)*
- *Environmental Planning and Assessment Regulation, 2000 (EP&A Regs, 2000)*
- *Local Government Act, 1993*
- *Threatened Species Conservation Act 1995 (TSC Act).*

**FINANCIAL IMPLICATIONS**

There is no application fee associated with submitting a Biodiversity certification application. Staff time costs are covered within the existing budget. The Biocertification application will be exhibited during the community consultation undertaken for the planning proposal.

The proponent will be responsible for costs associated with the preparation, implementation, monitoring, reporting and review of the management plan and all associated costs.

**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

**CONCLUSION**

The proposed buffer area to the Bargo River Gorge and environmentally significant land will provide an important future environmental asset while also being available for passive recreational use by the wider community. It is considered that Biocertification is the most pragmatic approach to achieving land for future residential growth while also conserving land with high biodiversity value.

It is recommended that a Biodiversity certification application be submitted to the Minister for the Environment.

**ATTACHMENTS**

1. Bargo River Gorge Buffer
2. Cross Section Plan of Buffer
3. Plan of Biodiversity Certification Proposal

**RECOMMENDATION**

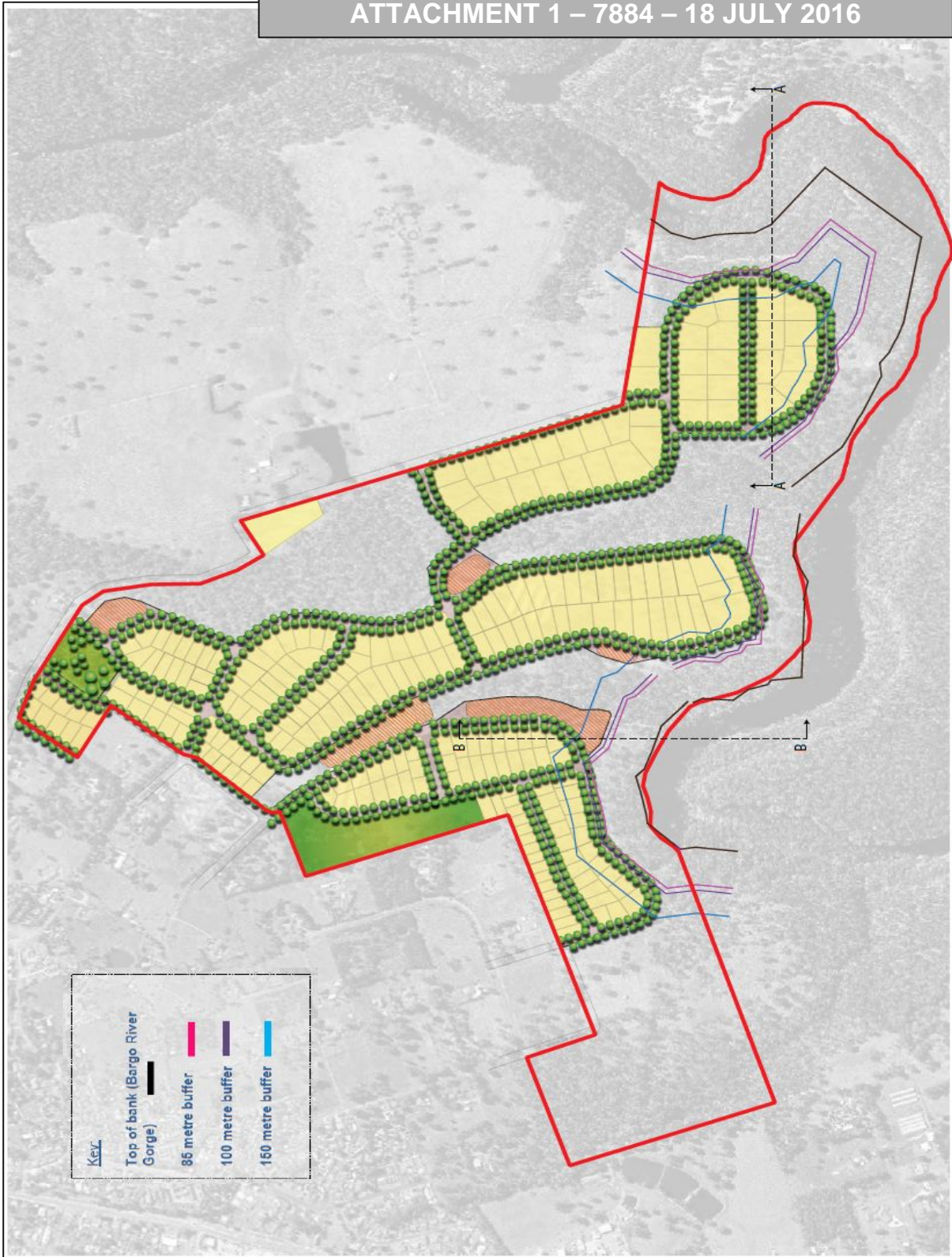
1. That Council support the proposed buffer to the Bargo River Gorge for exhibition purposes and submission of a Biodiversity certification application to the Minister for the Environment.
2. That Council request the proponent to provide a Biocertification Strategy that would result in permanently funded and managed conservation measures for the land propose to be conserved.
3. That Council delegate the General Manager to sign the Biodiversity Certification Application.
4. That the proposed buffer to the Bargo River Gorge and Biodiversity Certification Application with supporting document be placed on public exhibition during community consultation for the Planning Proposal.



Report of Planning and Economy to the Ordinary Meeting of Council held on Monday 18 July 2016

**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

**ATTACHMENT 1 – 7884 – 18 JULY 2016**

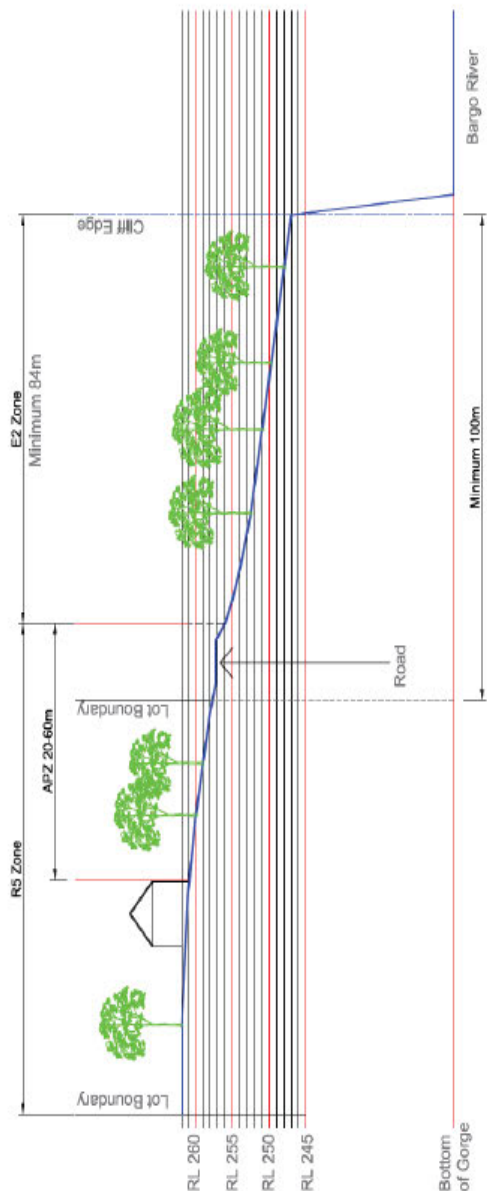


**Planning & Economy**

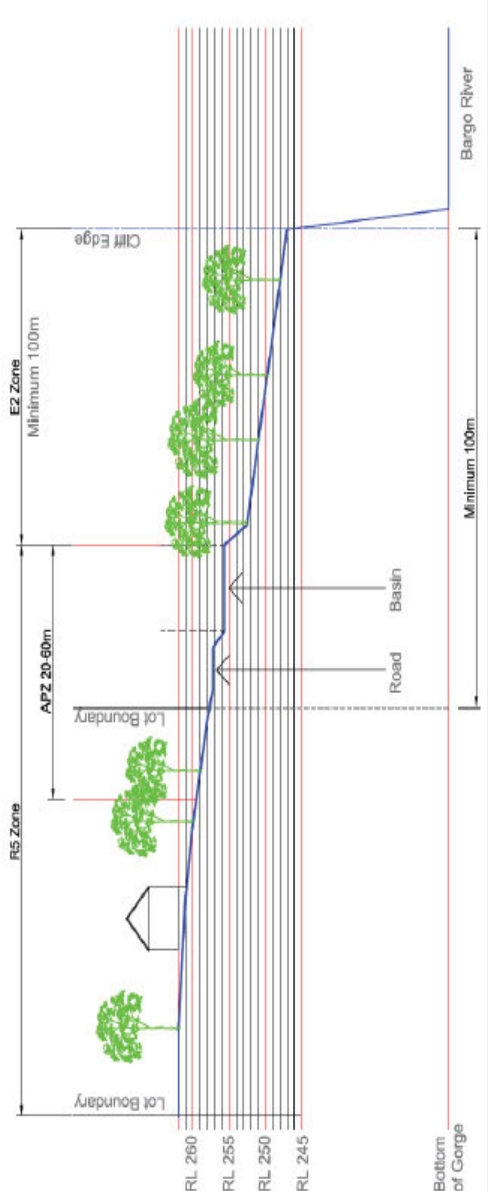
**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

**ATTACHMENT 2 – 7884 – 18 JULY 2016**

FIGURE 3 – TYPICAL SECTIONS FOR BARGO RIVER GORGE BUFFER (SOURCE, AE DESIGN PARTNERSHIP)



PICTURE 1 – SECTION AA



PICTURE 2 – SECTION BB



Report of Planning and Economy to the Ordinary Meeting of Council held on Monday 18 July 2016

**PE6 – Cross Street Planning Proposal – Bargo River Gorge Buffer and Biodiversity Certification Application**

**ATTACHMENT 3 – 7884 – 18 JULY 2016**

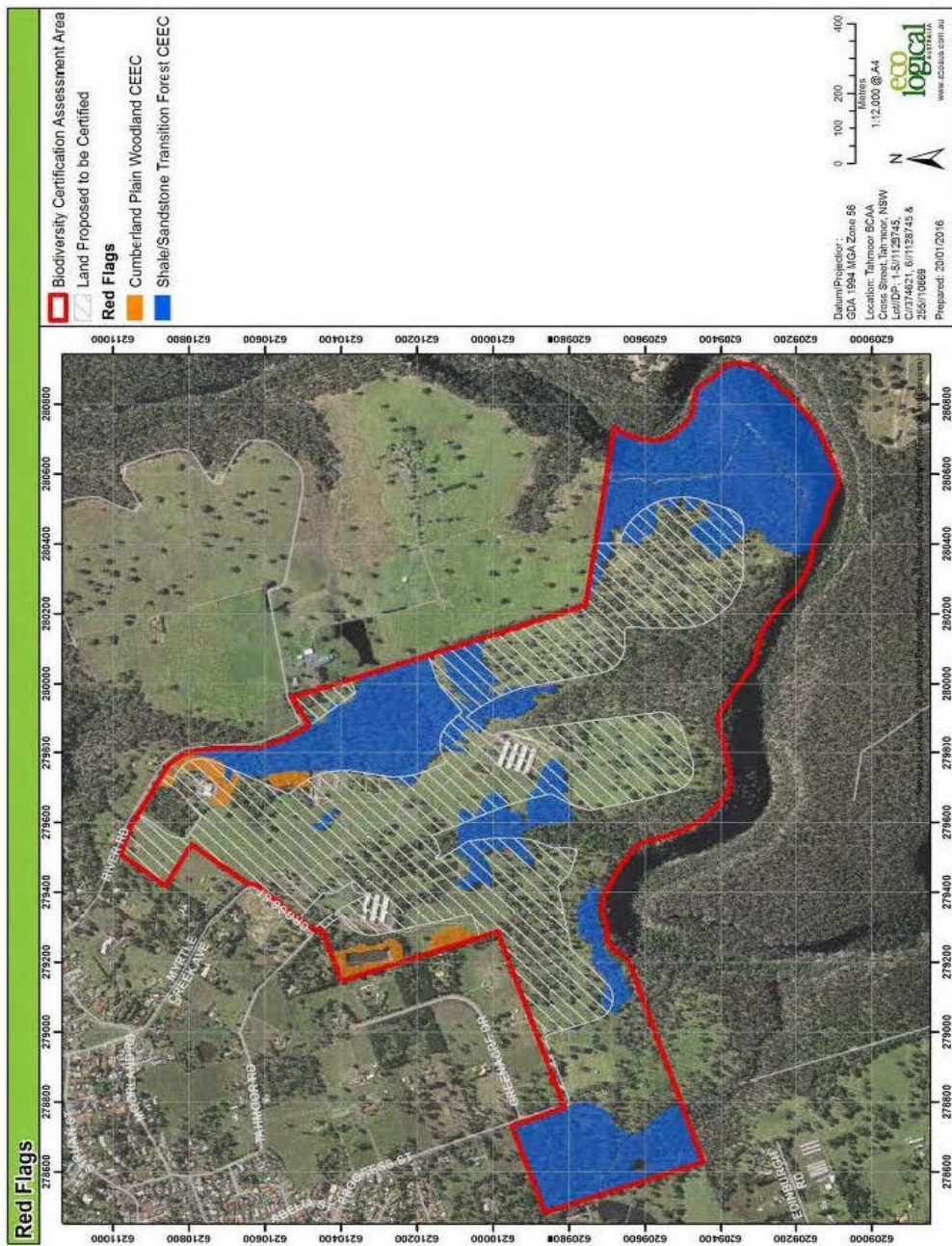


Figure 10: Red-flagged Vegetation

Planning & Economy

**APPENDIX B**

**LETTER TO COUNCILLORS – 10 NOVEMBER  
2014**



Ingham Property Development Pty Limited

ABN 36 160 339 864

PO Box 35

Casula Mall NSW 2170

10 November 2014

**Wollondilly Shire Council, Community Forum Monday 10 November 2014**

Planning and Economy

PE2 Planning Proposal – Cross Street, Tahmoor – Response to Notice of Motion

**1. INTRODUCTION**

Firstly, we kindly thank Wollondilly Council for the opportunity to provide the following Statement in relation to Item 'PE2' of the upcoming Ordinary Meeting of Council to be held on Monday 17 November 2014. This Item relates to the *Cross Street Planning Proposal, Tahmoor – Response to Notice of Motion*. Ingham Property Development Pty Ltd is the Proponent for this Planning Proposal.

Following a review of the Agenda for Council's upcoming Ordinary Meeting to be held on Monday 17 November 2014, in particular the report and accompanying recommendations in relation to the Bargo River Gorge buffer, Ingham Property Development Pty Ltd (Ingham's) wish to raise concerns in relation to the suggested wording of 'Recommendation 1' for the reasons subsequently discussed below.

Subsequently, it is recommend that a resolution on Item PE2 **be deferred** until such time that the additional environmental investigations (in particular biodiversity and conservation) are completed in response to the Government Agency Submissions and submitted to Council for review and consideration.

**2. BACKGROUND**

At the Ordinary Meeting of Council held on Monday 15 September 2014, a Notice of Motion was tabled in relation to the proposed buffer around the Bargo River Gorge on land within the Cross Street Planning Proposal. It is recognised that Council elected to defer this Notice of Motion until such time that a further report was prepared to inform Council of its previous resolution at its Ordinary Meeting held on Tuesday 22 April 2014.

We note that Council's resolution on Tuesday 22 April 2014, in relation to the Cross Street Planning Proposal and the Bargo River Gorge buffer resolved the following:

- (2) *“That the future development of the land within the Cross Street Planning Proposal incorporate a buffer of at least 100 metres from the top of the bank of the Bargo River Gorge to any residential building. That the applicant be advised that the studies prepared and submitted during the rezoning process will need to demonstrate how this will be achieved and what mechanisms (eg zoning, restrictions on title) will be used to provide certainty of this outcome. To enable the public to understand what is proposed in respect of this buffer the proponent shall also submit a typical cross section drawn to an appropriate scale showing the gorge, the proposed E2 zone, the asset protection zone required for bushfire protection, the area required for waste water disposal (if the lots are not connected to a reticulated sewerage system) and the location of residential buildings”.* [Extract. Underlining added]

Following Council’s resolution of 22 April 2014, the Cross Street Planning Proposal was forwarded to the Minister for Planning and Environment for a Gateway Determination. Council received a Gateway Determination for the Planning Proposal to proceed on the 17 July 2014. As reported in Council’s report in relation to PE2, Consultation with Government Agencies has been undertaken and submissions have been received. A copy of the submissions have been forwarded to Ingham’s, and the Ingham’s technical consultant team are currently reviewing and responding to the relevant matters raised by the Government Agencies.

Subsequently, the recent Notice of Motion tabled at Council’s Ordinary Meeting held on Monday 15 September 2014 proposed that the above resolution be changed as follows:

*“That the future development of the land within the Cross Street Planning Proposal incorporate a buffer of at least 100 metres from the top of the bank of the Bargo River Gorge to the rear of any property boundary. That the applicant be advised that the studies prepared and submitted during the rezoning process will need to demonstrate how this will be achieved and what mechanisms (eg zoning, restrictions on title) will be used to provide certainty of this outcome. To enable the public to understand what is proposed in respect of this buffer the proponent shall also submit a typical cross section drawn to an appropriate scale showing the gorge, the proposed E2 zone, the asset protection zone required for bushfire protection, the area required for waste water disposal (if the lots are not connected to a reticulated sewerage system) and the location of residential buildings.* [Extract. Underlining added]

*Additionally, a management plan shall be prepared to outline how the buffer area will be maintained and managed. Both the cross section and the management plan shall be placed on exhibition with the proposal should it receive a positive gateway determination.”*

In late September 2014, Ingham’s met with Council’s Strategic Planning Officers to discuss the Government Agency feedback following consultation post Gateway Determination. A key area of discussion was the Bargo River Gorge buffer and wider biodiversity conservation across the Cross Street site. Ingham’s confirmed its support for achieving an appropriate buffer distance along the sites interface with the Bargo Gorge, and that it will further work closely with its ecology consultant and urban design team to consider and assess the impact of the above Notice of Motion.

### 3. NEXT STEPS

Ingham's Developments acknowledge the ecological values of the site and in particular the importance of the Bargo Gorge. Preliminary studies have been undertaken regarding vegetation communities on the land, with further threatened species survey being undertaken in the coming weeks. This information will be used to further define the development and conservation footprints (post gateway determination), including a buffer to the Bargo Gorge.

Further, to secure conservation and development outcomes for the long term Ingham's are considering the preparation of a Biodiversity Certification Strategy under the *Threatened Species Conservation Act 1995*. The preparation of such a strategy would include discussions with Council and the NPWS regarding the merits of dedicating conservation lands to a public authority for their long term security.

Therefore, in light of the above and an upcoming scheduled meeting with the National Parks Association, which is to be held on Tuesday 11 November 2014, we feel that resolving to change the Bargo Gorge buffer from "*...at least 100 meters from top of the bank of the Bargo River Gorge to any residential building*" TO "*...at least 100 meters from top of the bank of the Bargo River Gorge to any property boundary within a single landholding (excluding parts of the buffer dedicated as public road*" is premature.

### 4. Conclusion

Due to the importance of ensuring that an appropriate buffer distance is implemented in order to preserve the significance of the Bargo River Gorge and achieve an appropriate urban planning outcome for the Cross Street Planning Proposal, **it is recommend that a resolution on Item PE2 be deferred until such time that additional environmental investigations (in particular biodiversity and conservation) are completed in response to the Government Agency Submissions and submitted to Council for review and consideration.**

We thank you once again for the opportunity to provide the above Statement in relation to Item 'PE2 Planning Proposal – Cross Street, Tahmoor – Response to Notice of Motion'.

In the meantime, please do not hesitate to contact the undersigned on 02 9826 4525.

Kindest regards



Michael Parkinson  
For and on behalf of  
Ingham Property Development Pty Limited

**APPENDIX C**

**ADDITIONAL INFORMATION TO  
COUNCILLORS – 14 NOVEMBER 2014**



Ingham Property Development Pty Limited

ABN 36 160 339 864

PO Box 35

Casula Mall NSW 2170

14 November 2014

The General Manager  
Wollondilly Shire Council  
Frank McKay Building  
62-64 Menangle Street  
PICTON NSW 2571

Attention: Ms Kitty Carter, Senior Strategic Planner

Dear Kitty,

**Cross Street Planning Proposal: Item PE2 on Council's Ordinary Meeting Agenda for Monday 17 November 2014.**

Following our opportunity to deliver a Statement at the Wollondilly Shire Council Community Forum held on Monday 10 November 2014 in relation to Item *PE2 Cross Street Planning Proposal, Tahmoor – Response to Notice of Motion*, we Ingham Property Development Pty Ltd ('the Proponent') wish to take this opportunity to provide the following additional information to Councillors and Council Officers for their consideration.

Further to our Statement of 10 November 2014 in relation to the above matter, we informed Council that Ingham's will be meeting with the *National Parks Association* and Council's Strategic Planning Staff on Tuesday 11 November 2014. We report that a very informative and positive meeting was held at Council's offices on this day, and it was mutually agreed that the Cross Street Planning Proposal is certainly moving in the right direction in relation to planning for a buffer at the interface with the Bargo River Gorge.

Subsequently, Ingham's received support from the National Parks Association to request that any further determination in relation to Item PE2 should be **deferred** by Council until such time that the additional environmental investigations (in particular biodiversity and conservation) are completed and submitted to Council for review and consideration.

We trust that the above information, read in conjunction with our Statement of 10 November 2014, will be considered by Councillors and Council Officers prior to making a decision in relation to Item PE2 at Councils Ordinary Meeting on Monday 17 November 2014.



We thank Council once again for this opportunity to provide this additional information. In the meantime, please do not hesitate to contact the undersigned should you wish to discuss any of the above.

Yours faithfully



Michael Parkinson

CC **Wollondilly Shire Councillors**  
**The General Manager**



# APPENDIX D

# BARGO GORGE SURVEY PLAN



# LEAN LACKENBY & HAYWARD

L'POOL PTY LTD  
ABN 61 003 107 971

CONSULTANTS IN SURVEYING, ENGINEERING & LAND DEVELOPMENT

1ST FLOOR, 209 NORTHUMBERLAND STREET, LIVERPOOL PO BOX 160, LIVERPOOL 1871

PHONE: (02) 9602 1200 FAX: (02) 9600 6609 EMAIL: llhlpool@tpg.com.au

31 August 2017

Our Ref: 60004-1

Ingham Property Development  
2 Old Kurrajong Road  
CASULA NSW 2170

**Attn: Michael Parkinson**

**Re: Cross Street Planning Proposal**

The following information is taken from and is to be viewed in conjunction with our plan of partial levels and detail drawing number 60004LD Revision E.

The legal description of the land is Lots 1, 2, 3, 4, 5 & 6 in DP 1128745, Lot C in DP 374621 & Lot 255 in DP 10669.

The site area of the land is 151.8ha by title, 155.6ha (calculated by DP 374621 & DP 10669).

This plan shows the site boundary (as surveyed by DP 374621 & DP 10669) and should be used for the purposes of finalising the Cross Street Planning Proposal and any subsequent agreements.

Yours faithfully

**LEAN LACKENBY & HAYWARD L'POOL PTY LTD**

AARON HAWKE

Registered Land Surveyor  
under the Surveying and Spatial  
Information Act 2002

AMH/jh

**DISCLAIMER**  
 THE TITLE BOUNDARIES AS SHOWN HEREON HAVE NOT BEEN MARKED. BOUNDARY DIMENSIONS HAVE BEEN TAKEN FROM TITLE DIAGRAM/S AND ADJOINING PLANS. FINAL BOUNDARY LOCATIONS TO BE DETERMINED FROM FURTHER SURVEY WORK. THIS DETAIL SURVEY IS NOT A SURVEY AS DEFINED BY THE SURVEYING ACT 2002.

IF ANY CONSTRUCTION IS PLANNED ESPECIALLY ON OR NEAR BOUNDARIES IT WOULD BE ADVISABLE TO HAVE FURTHER SURVEY WORK CARRIED OUT TO DETERMINE AVAILABLE BOUNDARY DIMENSIONS. SERVICES SHOWN HEREON HAVE BEEN LOCATED BY SURVEY. RECORDS OF RELEVANT AUTHORITIES HAVE NOT BEEN SEARCHED.

PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE RELEVANT AUTHORITIES SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES.

PROOF OF EXISTENCE OF ALL SERVICES IS THE CONTRACTOR'S RESPONSIBILITY. CURRENT "DIAL BEFORE YOU DIG" SERVICES PLANS MUST BE OBTAINED PRIOR TO COMMENCING ANY EXCAVATION.



**NOTE:**  
 THE LOCATION OF THE BARGO RIVER BOUNDARY HAS BEEN PLOTTED FROM DP374621 & DP10669 WHICH CONTAIN THE MOST RECENT SURVEYS OF THIS BOUNDARY ON PUBLIC RECORD. THE TITLE PLAN DP1128745 IS A DEPARTMENTAL PLAN WHICH IS PREPARED AS A UNIQUE IDENTITY FOR THE LAND IN THE CERTIFICATE OF TITLE. IT IS NOT A CURRENT PLAN IN THE TERMS OF 7A OF THE CONVEYANCING ACT, 1919. THIS BOUNDARY LOCATION SHOULD BE TREATED AS BROADLY INDICATIVE ONLY SUBJECT TO FURTHER INVESTIGATION

- D DENOTES DAM
- BD DENOTES BREACHED DAM/POND
- C DENOTES CONCRETE
- DENOTES APPROXIMATE EDGE OF TREE CANOPY
- ⊗ DENOTES AREA OF TREES
- - - DENOTES GULLY
- F DENOTES REMAINS OF FOUNDATIONS

**LEGEND**

DESCRIPTION	EXISTING
ELECTRICITY (AERIAL), POWER POLE, POWER POLE & LIGHT, LIGHT POLE	PP ● E ● ELP ● Eu - EP - E
ELECTRICITY (UNDERGROUND), PILLAR, PIT	PP ● E ● ELP ● Eu - EP - E
TELECOMMUNICATION CABLE (UNDERGROUND), PIT, ACCESS PIT, PILLAR, EQUIPMENT HOUSING	Tu ● TEL ●
TELECOMMUNICATION CABLE (AERIAL), POLE	Tu ● TEL ●
SHARED TELECOMMUNICATION/ELECTRICITY	TE
WATER MAIN, METER, HYDRANT, STOP VALVE	WM ● HYD ● SV
GAS MAIN, METER, MARKER, VALVE	G ●
SEWER MAIN, ACCESS CHAMBER, INSPECTION POINT, MAINTENANCE SHAFT	S ● AC ● S ● IP ● S ● MS ●
DRAINAGE PIPE, KERB INLET PIT, SEALED PIT, GRATED PIT, DOWN PIPE, GUTTER OVERFLOW	SW ● PIT ●
SIGN (GENERAL), TRAFFIC LIGHT, TRAFFIC LIGHT CONTROL BOX	SIGN ●
FENCE	- - -
WATERCOURSE/TABLE DRAIN	→
EMBANKMENT/BATTER	▾
CONTOURS	58.6 58.6 58.6
LEVELS, TOP OF KERB LEVEL	58.6 58.6 58.6



SHORT LINE BOUNDARY				
No	BEARING	DISTANCE	ARC	RADIUS
1	317°53'20"	3.675		
2	4°57'40"	27.735	28.805	30.48
3	359°54'40"	20.91		
4	101°24'20"	91.975		
5	136°00'	54.68		
6	162°11'	96.685		
7	178°09'	101.525		
8	148°57'	80.695		
9	139°02'	62.605		
10	51°17'	91.44		
11	71°46'	0.22		

TITLE AREA 151.8ha  
 CALCULATED AREA 155.6ha (BY DP374621 & DP10669)  
 PROPERTY DESCRIPTION  
 LOTS 1, 2, 3, 4, 5 & 6 IN DP1128745  
 LOT C IN DP374621 & LOT 255 IN DP10669

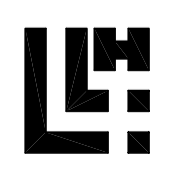
**LEAN LACKENBY & HAYWARD** L'POOL PTY LTD.  
 CONSULTANTS IN SURVEYING, ENGINEERING & LAND DEVELOPMENT  
 151 FL 209 NORTHUMBERLAND ST, LIVERPOOL PH:(02) 9602 1200 FAX:(02) 9600 6609  
 PO BOX 160 LIVERPOOL BC NSW 1871 EMAIL: llhpool@ltpg.com.au

AMENDMENT	DATE	APPRD
E 100m BUFFER AMENDED	5/9/17	AMH
D CLIFF EDGE AND 100m BUFFER AMENDED	5/9/17	AMH
C CLIFF EDGE LINE TYPE AMENDED	31/8/17	AMH
B CALCULATED SITE AREA ADDED	22/8/17	AMH
A CLIFF 100m SETBACK AMENDED AND BARGO RIVER BOUNDARY ADDED	12/7/17	AMH

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L.G.A:	WOLLONDILLY	SCALE	1:4000	A1
LOCALITY:	TAHMOOR	PROPERTY DESCRIPTION:	SEE ABOVE	
SURVEY	AMH / CGL	DRAWN	BG	DATUM & ORIGIN OF LEVELS
DESIGN	APPROVED	AMH	AHD	CORSNET (MENANGLE BASE STATION)

DATE	21/05/2015	SHEET	01/01	DRAWING NUMBER	60004LD	AMEND	E	FILE No:	60004
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**APPENDIX E**

**ECO LOGICAL AUSTRALIA STATEMENT**

Mr Michael Parkinson  
Inghams Property Developments Pty Limited  
c/o Adrian Vilella  
Urbis Pty Ltd  
Level 21, 321 Kent Street  
SYDNEY NSW 2000

14SYD-670

18 January 2018

Dear Mr Parkinson,

**Re: Bargo Gorge setback.**

Eco Logical Australia is currently engaged to undertake a biodiversity assessment of the Cross Street Tahmoor Planning Proposal. It is understood that a critical issue for Wollondilly Council and the community is the setback of development from the top of Bargo Gorge. As requested, Eco logical Australia provides this specific advice in relation to the biodiversity values of the top of the Bargo Gorge as an assessment of ecological adequacy of the setback.

**Ecological values of the top of Bargo Gorge**

The majority of the study area has undergone historical disturbance with the current largest stands of vegetation located along the drainage lines and in the south – eastern corner of the site. A vegetated corridor runs east to west in the south of the site along the Nepean River (Bargo Gorge) and smaller corridors of vegetation connect drainage lines across the site to this main corridor.

Four vegetation communities have been recorded across the study area, two of which are listed as a Threatened Ecological Community under both the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and NSW *Threatened Species Conservation Act 1995* (TSC Act) (Figure 1). Vegetation communities mapped within the study area include:

- Grey Box – Forest Red Gum grassy woodland (Cumberland Plain Woodland – EPBC Act / TSC Act)
- Narrow-leaved Ironbark – Broad-leaved Ironbark – Grey Gum woodland (Shale Sandstone Transition Forest – EPBC / TSC Act)
- Red Bloodwood – Grey Gum woodland
- Smooth-barked Apple – Red Bloodwood – Sydney Peppermint heathy open forest

Vegetation along the top of Bargo Gorge consists primarily of Narrow-leaved Ironbark – Broad-leaved Ironbark – Grey Gum woodland and Red Bloodwood – Grey Gum Woodland. This vegetation is in good condition with native species dominating all strata.

Targeted surveys were undertaken across the study area and including along the top of the Gorge, however no threatened flora species were recorded. Vegetation along the top of the Gorge provides potential habitat for a variety of fauna such as:

- Large-eared Pied Bat (*Chalinolobus dwyeri*) – recorded on site
- Southern Myotis (*Myotis macropus*) – recorded on site

- Squirrel Glider (*Petaurus norfolcensis*) – unlikely to use site
- Koala (*Phascolarctos cinereus*) – unlikely to use site
- Red-crowned Toadlet (*Pseudophryne australis*) – marginal habitat
- Giant Burrowing Frog (*Heleioporus australiacus*) – marginal habitat
- Rosenberg's Goanna (*Varanus rosenbergi*)
- Cumberland Plain Land Snail (*Meridolum corneovirens*) – recorded on site
- Regent Honeyeater (*Anthochaera phrygia*) – marginal habitat

### Proposed landuse in the vicinity of the Gorge

Ingham Property Developments Pty Ltd and Urbis have designed a development footprint as shown in Figure 2. The layout provides for a minimum development setback from the top of the Bargo Gorge of 100m.

Land within the corridor is to be zoned E2 Environmental Conservation and will be managed for its conservation values in perpetuity via a BioBanking Agreement. The land is likely to be placed in public ownership. Recreation infrastructure such as footpaths and a viewing platform may be constructed within the corridor, but if so, any footpaths would be designed and constructed in an environmentally sensitive manner.

### Assessment of adequacy

Highly mobile fauna such as birds and bats are able to utilise fragmented habitat, but less mobile species such as ground-dwelling or arboreal mammals, reptiles and amphibians can be impacted by loss of connectivity. Scientific literature on the necessary width of corridors for mammals varies widely. The use of a corridor can depend on factors such as the quality of the habitat, the threat from predators as well as abiotic factors such as light and noise. Squirrel gliders are known to use corridors of a single tree width. Koala will also move through disconnected habitat.

The proposed corridor width of at least 100 metres (not counting the adjoining vegetation in the Gorge itself) is considered sufficient to enable all of the aforementioned threatened fauna to continue to move along the Gorge and into adjacent areas and will not prevent the exchange of genetic material. Further, the protection of the vegetation along the drainage channels across the study area, and in the west and north east of the site, ensures potential habitat for all of the aforementioned threatened species will be conserved and will not become fragmented as a consequence of the proposal.

It is imperative that edge effects and access are managed to ensure impacts on the current corridor are minimised as weed invasion is currently minimal and important fauna habitat features need to be protected.

The proposed layout protects the most consolidated stands of vegetation at the site, maintains connectivity between vegetated areas and along Bargo Gorge and in Eco Logical Australia's opinion would not compromise the function of the current vegetation along Bargo Gorge as a corridor for flora and fauna.

Should you require any further advice, please do not hesitate to contact me on 0405 910 839.

Yours sincerely



David Bonjer

Senior consultant



## Vegetation Zones and Plots

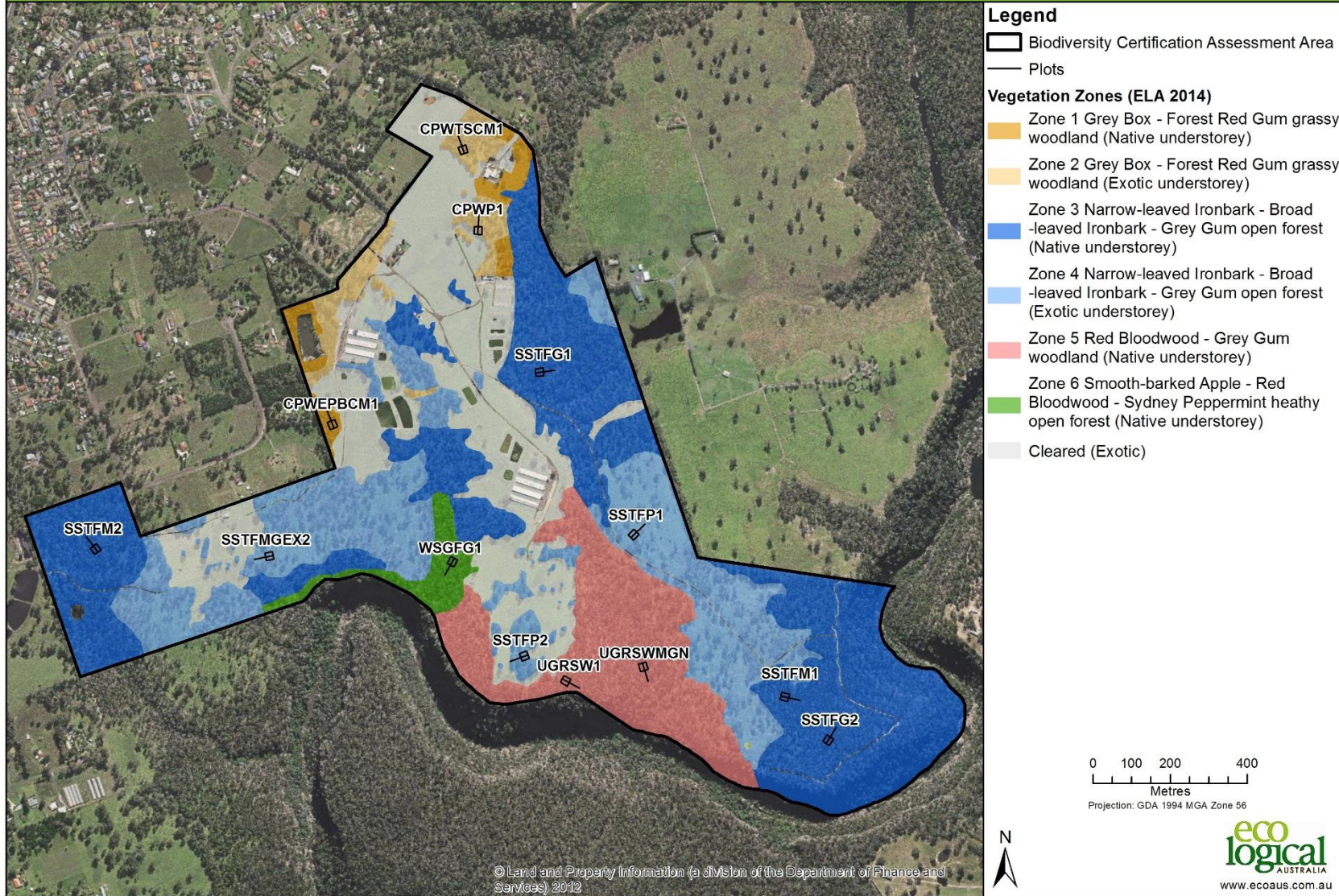
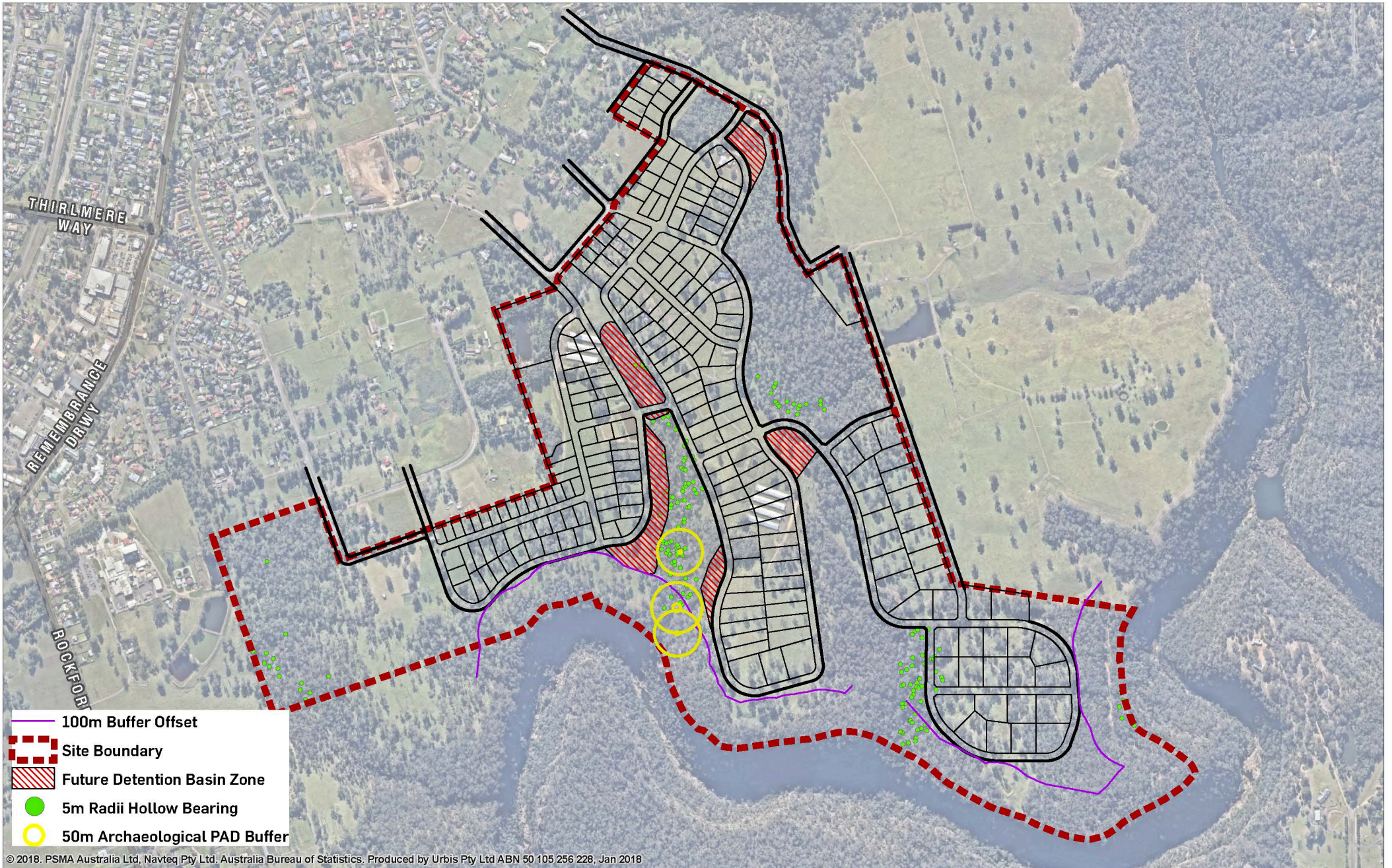


Figure 1 Vegetation communities





# CROSS STREET TAHMOOR

## BUFFER ZONE APZ / LOT LAYOUT



500 Metres



**APPENDIX F**

**BARGO RIVER GORGE BUFFER ANALYSIS**



# Cross Street, Tahmoor

## BARGO RIVER GORGE BUFFER ANALYSIS

PREPARED FOR:  
Ingham Property Development Pty Ltd

JANUARY 2018  
PLANNING PROPOSAL





## Introduction

The purpose of this analysis report is to demonstrate the appropriateness of the proposed buffer between future residential development and the Bargo River Gorge as it relates to the Cross Street Planning Proposal Site.

This analysis has been informed by the ongoing discussions and communication between the Proponent (Ingham Property Development), Wollondilly Shire Council, the National Park Association and Eco Logical Australia. The analysis has considered the current indicative concept layout for the future large lot residential subdivision of the subject site, post rezoning gazettal, and the concepts integration of significant vegetation and riparian corridor zones.



## Methodology

The following methodology was adopted for the purposes of informing this analysis:

1. Lean Lackenby & Hayward were engaged by Ingham Property Development to undertake a detailed survey of the existing top of gorge (the Bargo Gorge). A copy of this survey is included under Figure 1.
2. The indicative subdivision concept for the subject site was then overlaid to enable an assessment of the Bargo Gorge buffer to be undertaken. (Please refer to Figure 2).
3. A site inspection was carried out on Tuesday 3 November 2015.
4. A detailed assessment, by review of the land survey, was carried out to assess the relationship of the interface between the subdivision concept and the Bargo Gorge.
5. Careful consideration in the analysis was then given to the opportunity for public accessibility to appreciate the Bargo Gorge and its view expansive view corridors. (Please refer to Figure 3).

The proceeding sections of this analysis present and discuss the findings of the above.

It is understood that this analysis will form part of a consolidated response on the Bargo Gorge buffer as relevant to the Cross Street Planning Proposal.

As the planning proposal has progressed, the project team has sought to clarify the site boundary and lot areas.

The deposited plans do not show where the Bargo River boundary of Lots 1, 2, 3, 4, in DP 1128745 and Lot C in DP 374621 are.

Cadastral/current Departmental information is broadly indicative and not a true representation of the site boundary (it is ambiguous whether the boundary is the centre, top of bank, cliff face or cliff edge of the Bargo River).

To 'ground truth' the work to date, and noting the Planning Proposal is occurring concurrently to VPA and Biobanking agreements, the proponent has (using the survey data available) estimated the site boundary as the location of the cliff edge along the Bargo River.

The 100m buffer line ensures that at each point, the development footprint is not within 100m of the 'top of bank' measured perpendicularly. This is consistent with Council's Bargo River Gorge resolution.

**DISCLAIMER**  
 THE TITLE BOUNDARIES AS SHOWN HEREON HAVE NOT BEEN MARKED. BOUNDARY DIMENSIONS HAVE BEEN TAKEN FROM TITLE DIAGRAMS AND ADJOINING PLANS. FINAL BOUNDARY LOCATIONS TO BE DETERMINED FROM FURTHER SURVEY WORK. THIS DETAIL SURVEY IS NOT A SURVEY AS DEFINED BY THE SURVEYING ACT 2002.

IF ANY CONSTRUCTION IS PLANNED ESPECIALLY ON OR NEAR BOUNDARIES IT WOULD BE ADVISABLE TO HAVE FURTHER SURVEY WORK CARRIED OUT TO DETERMINE AVAILABLE BOUNDARY DIMENSIONS. SERVICES SHOWN HEREON HAVE BEEN LOCATED BY SURVEY. RECORDS OF RELEVANT AUTHORITIES HAVE NOT BEEN SEARCHED.

PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE RELEVANT AUTHORITIES SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES.

PROOF OF EXISTENCE OF ALL SERVICES IS THE CONTRACTOR'S RESPONSIBILITY. CURRENT "DIAL BEFORE YOU DIG" SERVICES PLANS MUST BE OBTAINED PRIOR TO COMMENCING ANY EXCAVATION.



NOTE:  
 THE LOCATION OF THE BARGO RIVER BOUNDARY HAS BEEN PLOTTED FROM DP374621 & DP10669 WHICH CONTAIN THE MOST RECENT SURVEYS OF THIS BOUNDARY ON PUBLIC RECORD. THE TITLE PLAN DP1128745 IS A DEPARTMENTAL PLAN WHICH IS PREPARED AS A UNIQUE IDENTITY FOR THE LAND IN THE CERTIFICATE OF TITLE. IT IS NOT A CURRENT PLAN IN THE TERMS OF 7A OF THE CONVEYANCING ACT, 1919. THIS BOUNDARY LOCATION SHOULD BE TREATED AS BROADLY INDICATIVE ONLY SUBJECT TO FURTHER INVESTIGATION

- D DENOTES DAM
- BD DENOTES BREACHED DAM/POND
- C DENOTES CONCRETE
- DENOTES APPROXIMATE EDGE OF TREE CANOPY
- ⊗ DENOTES AREA OF TREES
- DENOTES GULLY
- F DENOTES REMAINS OF FOUNDATIONS

**LEGEND**

DESCRIPTION	EXISTING
ELECTRICITY (AERIAL), POWER POLE, POWER POLE & LIGHT, LIGHT POLE	PP ● PPA ● ELP ●
ELECTRICITY (UNDERGROUND), PILLAR, PIT	Eu — EP ●
TELECOMMUNICATION CABLE (UNDERGROUND), PIT, ACCESS PIT, PILLAR, EQUIPMENT HOUSING	Tu — TEL ●
TELECOMMUNICATION CABLE (AERIAL), POLE	TEL ●
SHARED TELECOMMUNICATION/ELECTRICITY	TE —
WATER MAIN, METER, HYDRANT, STOP VALVE	WM — HYD ● SV ●
GAS MAIN, METER, MARKER, VALVE	G — ●
SEWER MAIN, ACCESS CHAMBER, INSPECTION POINT, MAINTENANCE SHAFT	S — S ● IP ● MS ●
DRAINAGE PIPE, KERB INLET PIT, SEALED PIT, GRATED PIT, DOWN PIPE, GUTTER OVERFLOW	DP — PIT ● SW ●
SIGN (GENERAL), TRAFFIC LIGHT, TRAFFIC LIGHT CONTROL BOX	Sign ● ●
FENCE	— — — — —
WATERCOURSE/TABLE DRAIN	— — — — —
EMBANKMENT/BATTER	— — — — —
CONTOURS	58.4 59.4 60.4
LEVELS, TOP OF KERB LEVEL	+25.95 +142.86

Figure 1



No	BEARING	DISTANCE	ARC	RADIUS
1	317°53'20"	3.675		
2	4°57'44"	27.135	28.805	30.48
3	359°54'40"	20.91		
4	101°24'20"	91.975		
5	136°00'	54.68		
6	162°11'	96.685		
7	170°09'	101.525		
8	148°57'	80.695		
9	139°02'	62.605		
10	51°17'	91.44		
11	71°46'	0.22		

TITLE AREA 151.8ha  
 CALCULATED AREA 155.6ha (BY DP374621 & DP10669)  
 PROPERTY DESCRIPTION  
 LOTS 1, 2, 3, 4, 5 & 6 IN DP1128745  
 LOT C IN DP374621 & LOT 255 IN DP10669

**LEAN LACKENBY & HAYWARD** L'POOL PTY LTD.  
 ABN 61 003 107 971  
 CONSULTANTS IN SURVEYING, ENGINEERING & LAND DEVELOPMENT  
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AMENDMENT	DATE	APPRD
E	5/9/17	AMH
D	5/9/17	AMH
C	31/8/17	AMH
B	22/8/17	AMH
A	12/7/17	AMH

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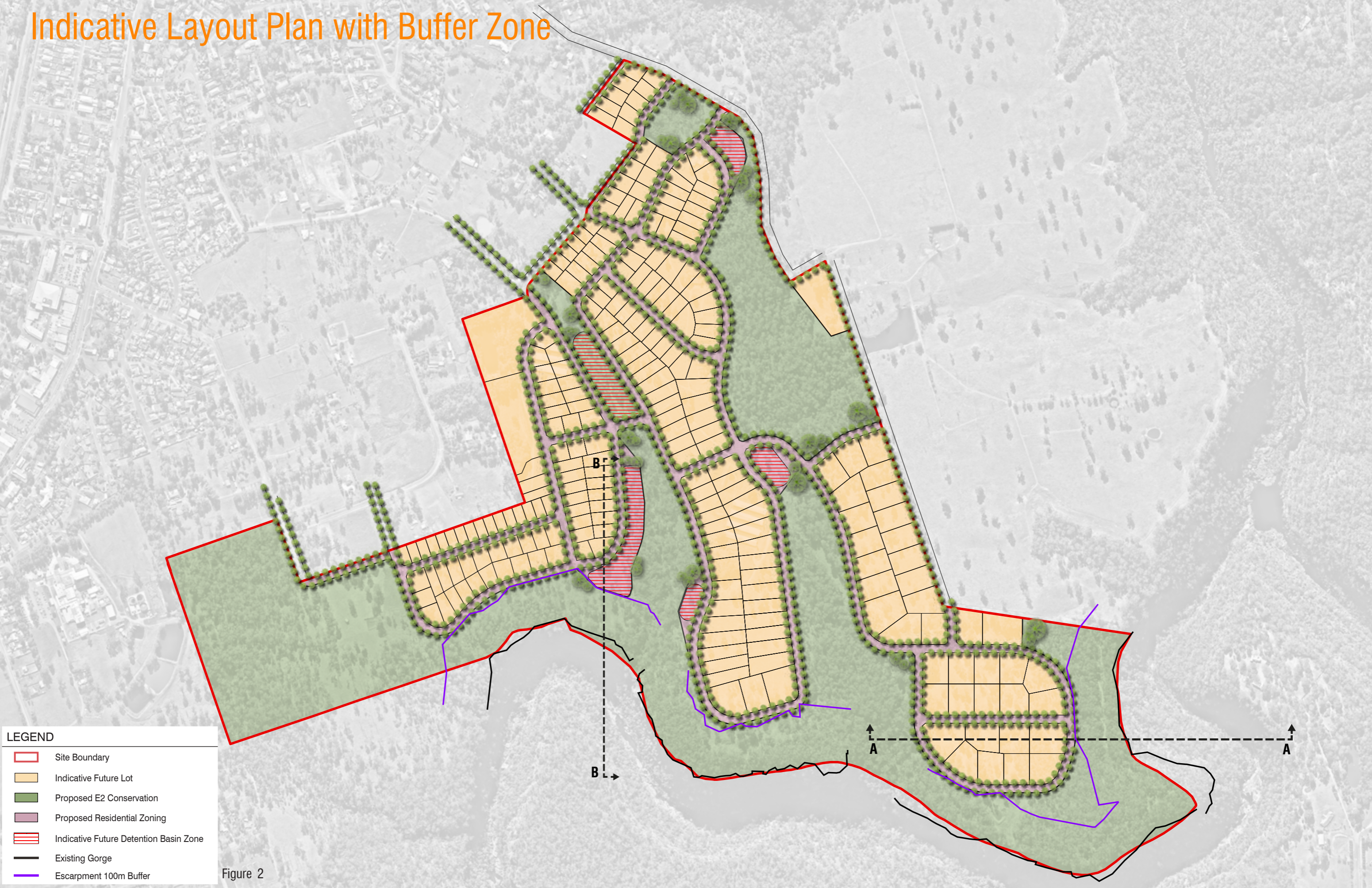
L.G.A:	WOLLONDILLY	SCALE	1:4000	A1
LOCALITY:	TAHMOOR	PROPERTY DESCRIPTION:	SEE ABOVE	
SURVEY	AMH / CGL	DRAWN	BG	DATUM & ORIGIN OF LEVELS
DESIGN	APPROVED	AMH	AHD	CORSNET (MENANGLE BASE STATION)

<b>PLAN OF PARTIAL LEVELS &amp; DETAIL</b>				
DATE	SHEET	DRAWING NUMBER	AMEND	FILE:
21/05/2015	01/01	60004LD	E	No: 60004





# Indicative Layout Plan with Buffer Zone



**LEGEND**

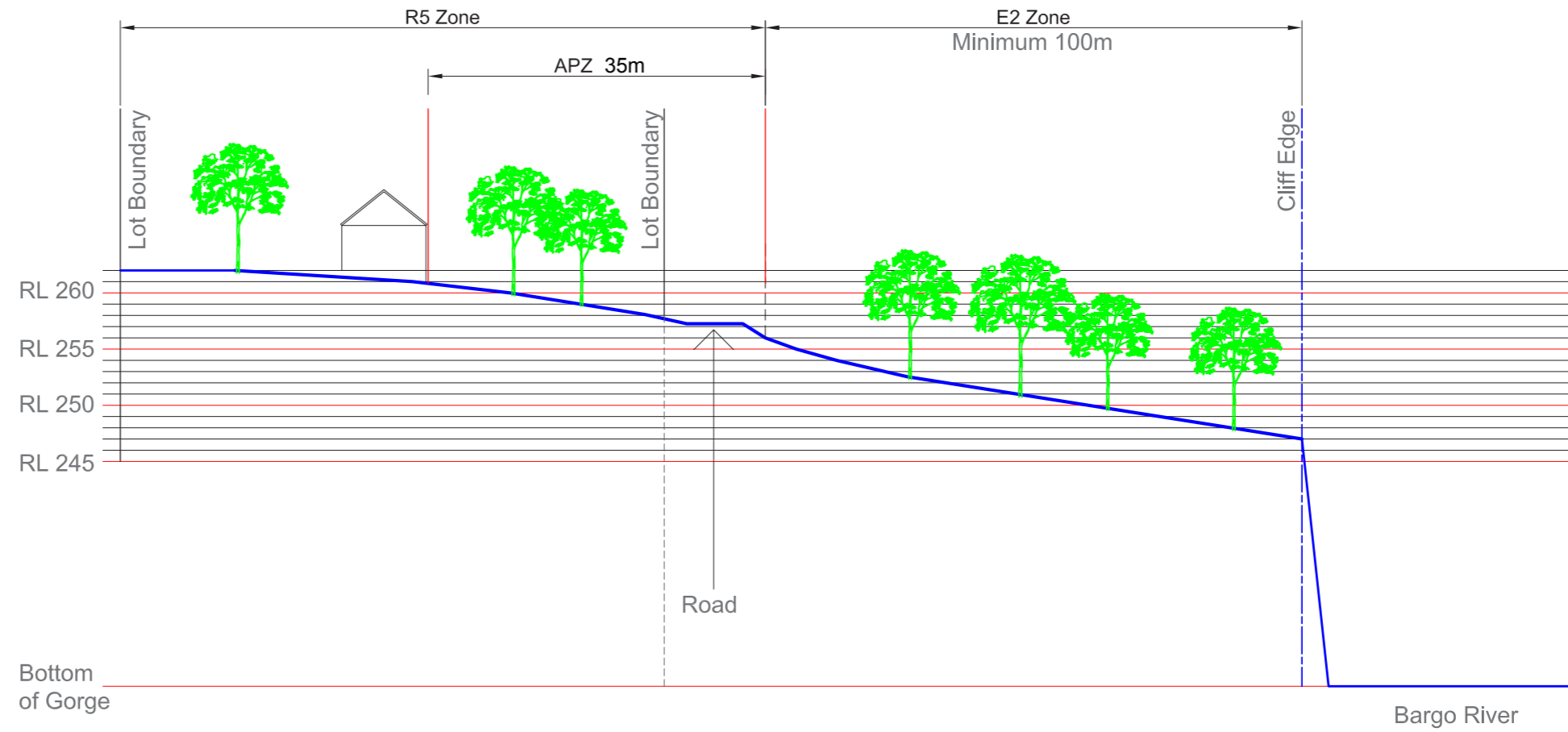
- Site Boundary
- Indicative Future Lot
- Proposed E2 Conservation
- Proposed Residential Zoning
- Indicative Future Detention Basin Zone
- Existing Gorge
- Escarpment 100m Buffer

Figure 2

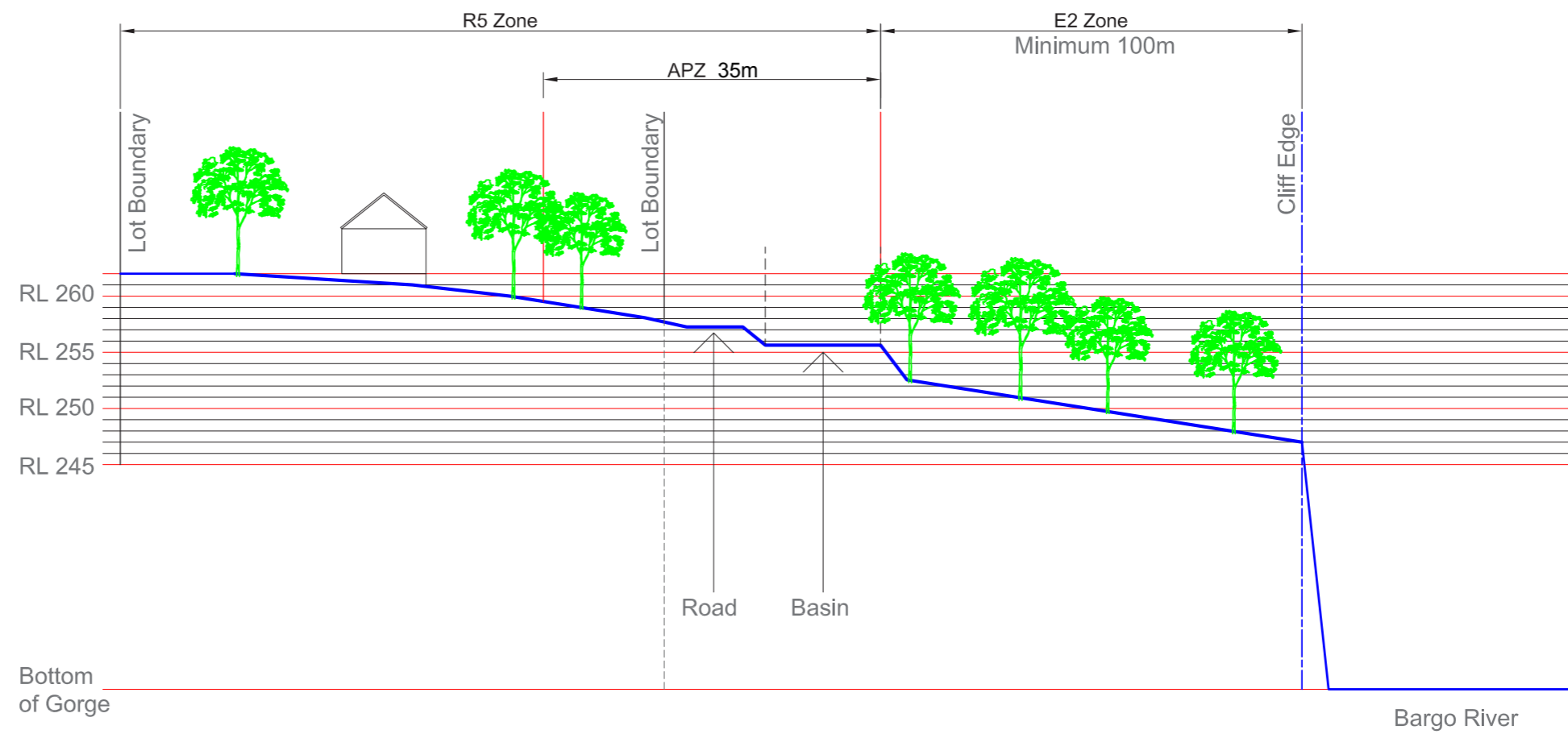


# Typical Buffer Zone Sections

## SECTION AA

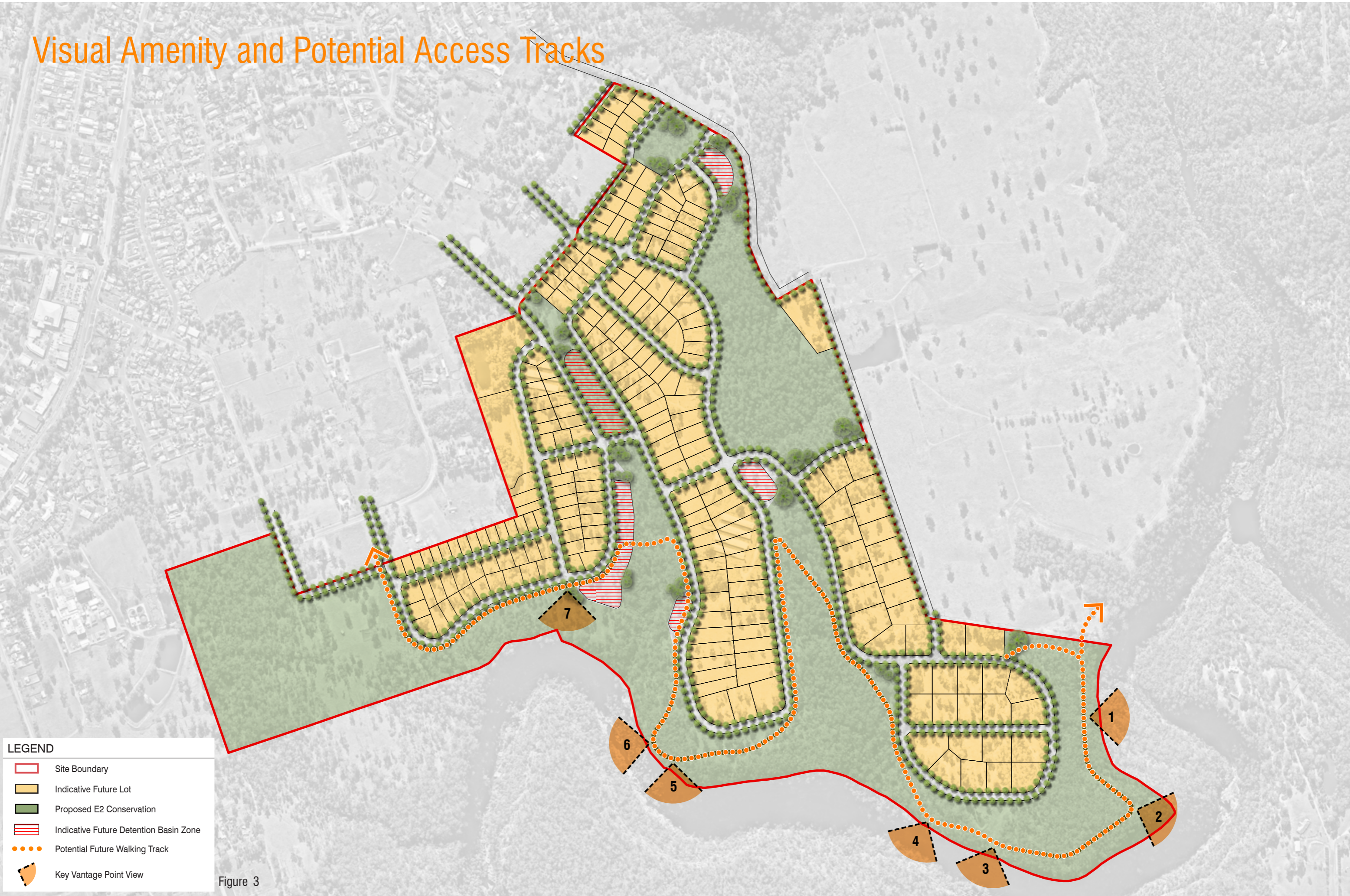


## SECTION BB





# Visual Amenity and Potential Access Tracks



**LEGEND**

- Site Boundary
- Indicative Future Lot
- Proposed E2 Conservation
- Indicative Future Detention Basin Zone
- Potential Future Walking Track
- Key Vantage Point View

Figure 3





View 1



View 3



View 2



View 4





View 5



View 7



View 8



## Summary

Lean Lackenby & Hayward Liverpool ammended the surveyed Bargo Gorge line in September 2017.

Visual analysis of the surrounding landform and the interface with the Bargo Gorge has informed the revised subdivision layout. The Bargo Gorge has been a key urban design consideration throughout the revised subdivision layout.

Consultation with local Council, the National Parks Association and Eco-Logical Australia took place throughout the design process. The feedback recieved from these bodies regarding the site and the interface with Bargo Gorge has played a key role in the concept layout for the site.

The development footprint is located at least 100m from the Bargo River Gorge.



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