

Flood Impact and Risk Assessment (FIRA)

Planning Proposal – Greenvalleys Mountain Bike Park

PREPARED FOR

Nicholas Haertsch – Greenvalleys Mountain Bike Club Inc

SITE ADDRESS

2926 Illawarra Highway (Lot 1 DP 881927), Tongarra

DATE

28/11/2024

PROJECT REFERENCE

130542



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TABLE OF CONTENTS

1.0 – INTRODUCTION	5
2.0 – SITE LOCALITY	5
3.0 – SHELLHARBOUR CITY COUNCIL (SCC) CONSULTATION	10
4.0 – ON-SITE FLOOD IMPACTS	11
4.1 Flood Hazard	11
4.2 Flood Hydraulic Categories	12
4.3 Summary of On-Site Impacts	13
5.0 – OFF-SITE FLOOD IMPACTS	13
5.1 Flood Hazard	13
5.2 Flood Hydraulic Categories	14
5.3 Summary of Off-Site Impacts	14
6.0 – EVACUATION ASSESSMENT	14
6.1 Evacuation Route	14
6.2 Flood Behaviour	15
6.3 Existing Evacuation Route Load	15
6.4 Proposed Evacuation Route Load	15
6.5 Warning Time	16
6.6 Critical Hydrograph Assessment	16
6.7 Evacuation Recommendations	16
7.0 – RECOMMENDATIONS	17
8.0 – LOCAL PLANNING DIRECTION 4.1	17
9.0 – CONCLUSION	19
10.0 – APPENDICES	21
10.1 Appendix 1 – Flood Hazard Maps Per FRMSP	21
10.2 Appendix 2 – Flood Hydraulic Category Maps Per FRMSP	24
10.3 Appendix 3 – Site Plans	27

Table of Revisions.

Initial.	Rev	Date	Details
RH	0	28/11/2024	Original issue



1.0 – INTRODUCTION

The Planning Proposal relates to an existing mountain bike facility (Greenvalleys Mountain Bike Park) located at a property known as “Lothlorien”, Lot 1 DP 881927, 2926 Illawarra Highway, Tongarra (the “subject site”). The site has an area of 125.6 hectares and is owned by Associate Professor Peter Haertsch AM.

The objectives of the Planning Proposal are:

- To amend the Shellharbour Local Environmental Plan 2013 to allow the existing mountain bike facility to operate on a more permanent basis.
- To amend the Shellharbour LEP 2013 to remove conflict between the existing use of the site (part only) as a mountain bike park and the SP2 Infrastructure (Classified Road) zoning that affects the site.

Proposed amendments to LEP provisions to achieve the objectives and intended outcomes are:

- To include the existing mountain bike facility in *Schedule 1 (Allowance Clause)* of the Shellharbour LEP 2013 and thereby permit use of the subject site (southern part) for a “*Recreation Facility (Outdoor)*” being a mountain bike facility pursuant to Clause 2.5 of the Shellharbour LEP 2013.
- To rezone part of the site where the mountain bike park is located from *SP2 Zone (Infrastructure – Classified Roads)* to *RU1 Primary Production* consistent with adjacent land to the south. This process necessitates reducing the width of the underlying Road Widening Order that is associated with the SP2 zoning.

This FIRA has been prepared with consideration to the following reference reports, standards and guidelines:

- *The NSW Flood Prone Land Policy*;
- *The Floodplain Development Manual (FDM) 2005*;
- *The Flood Risk Management Manual 2023*;
- *The Flood Risk Management Guideline LU01 2023*;
- *The Flood Risk Management Guideline FB03 2023*;
- *Considering flooding in land use planning Guideline 2021*;
- *Local Planning Direction 4.1*;
- *Macquarie Rivulet Flood Study (MRFS) 2017*; and
- *Macquarie Rivulet Floodplain Risk Management Study and Plan (FRMSP) 2024*.

2.0 – SITE LOCALITY

The land associated with the Planning Proposal involves the property known as “Lothlorien”, which is Lot 1 DP 881927, 2926 Illawarra Highway, Tongarra (the “subject site”) and is an irregular shaped allotment comprising an area of 125.6 ha. The subject site is located in the lower foothills of the

Illawarra Escarpment approximately 5.5 km to the east of Macquarie Pass and 16 km to the west of Shellharbour – see **Figures 1 and 2**. The relevant zoning of the site is also detailed in **Figure 3**.

The Greenvaleys Mountain Bike Park, the subject of the Planning Proposal, is situated on that part of the subject site located to the south of the Illawarra Highway and north of Lakeview Road – see **Figure 4**. All mountain bike activities are limited to the southern side of the subject site – all on-site flooding impacts considered by this FIRA are limited to this area – with other affected areas of the site not being impacted by the Planning Proposal.

Site layout including location of MTB trails etc can be found in **Appendix 3**.

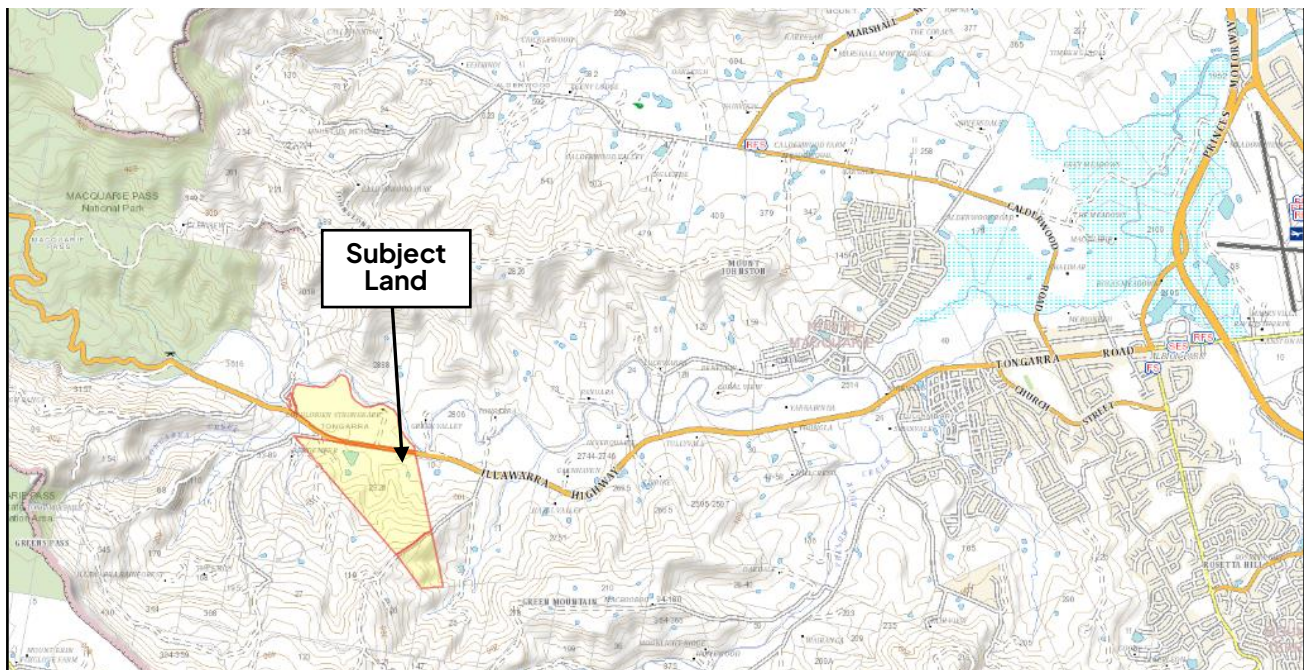


Figure 1: Site locality plan.



Figure 2: Aerial photograph of site

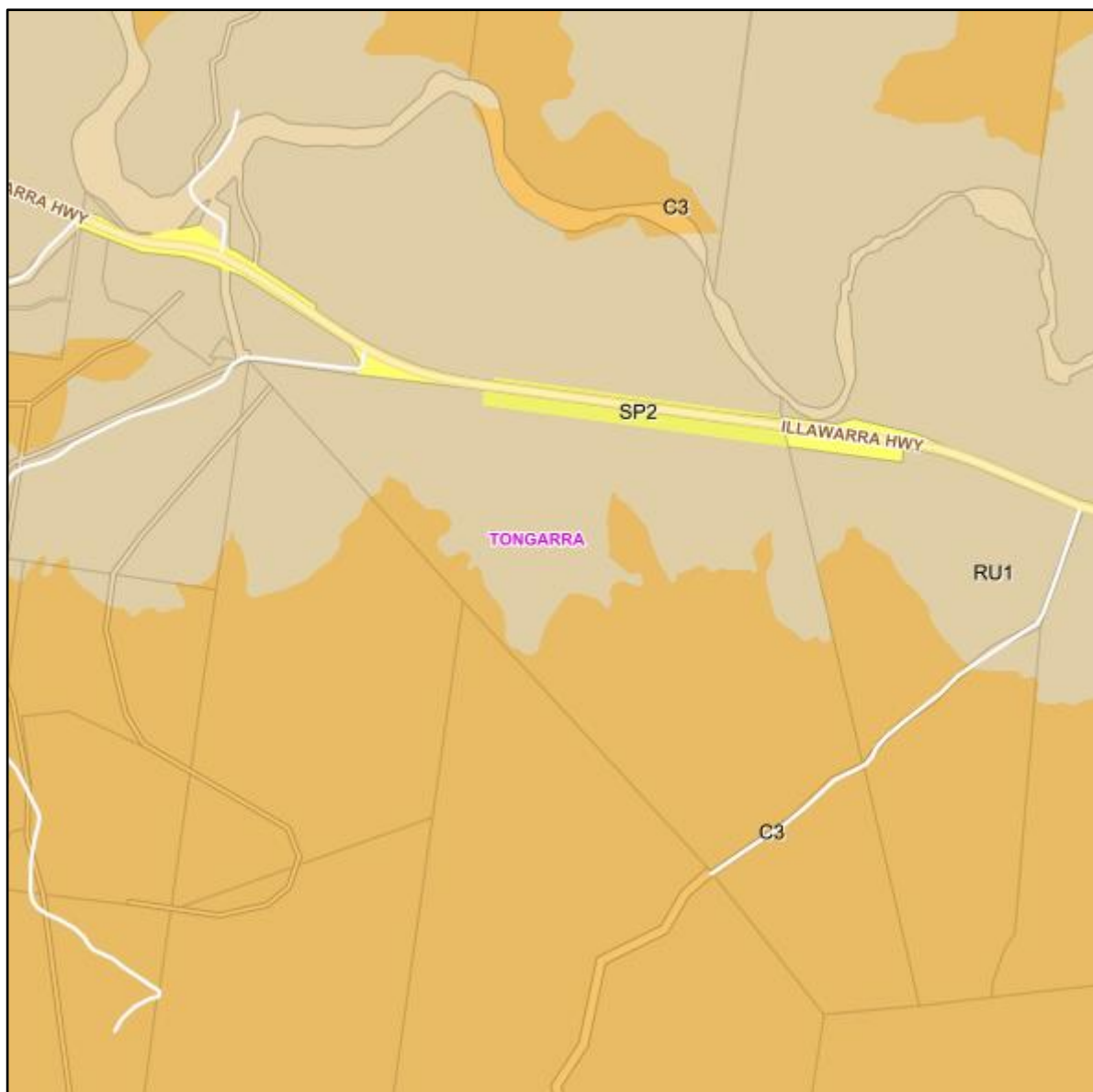


Figure 3: Zoning under Shellharbour LEP 2013

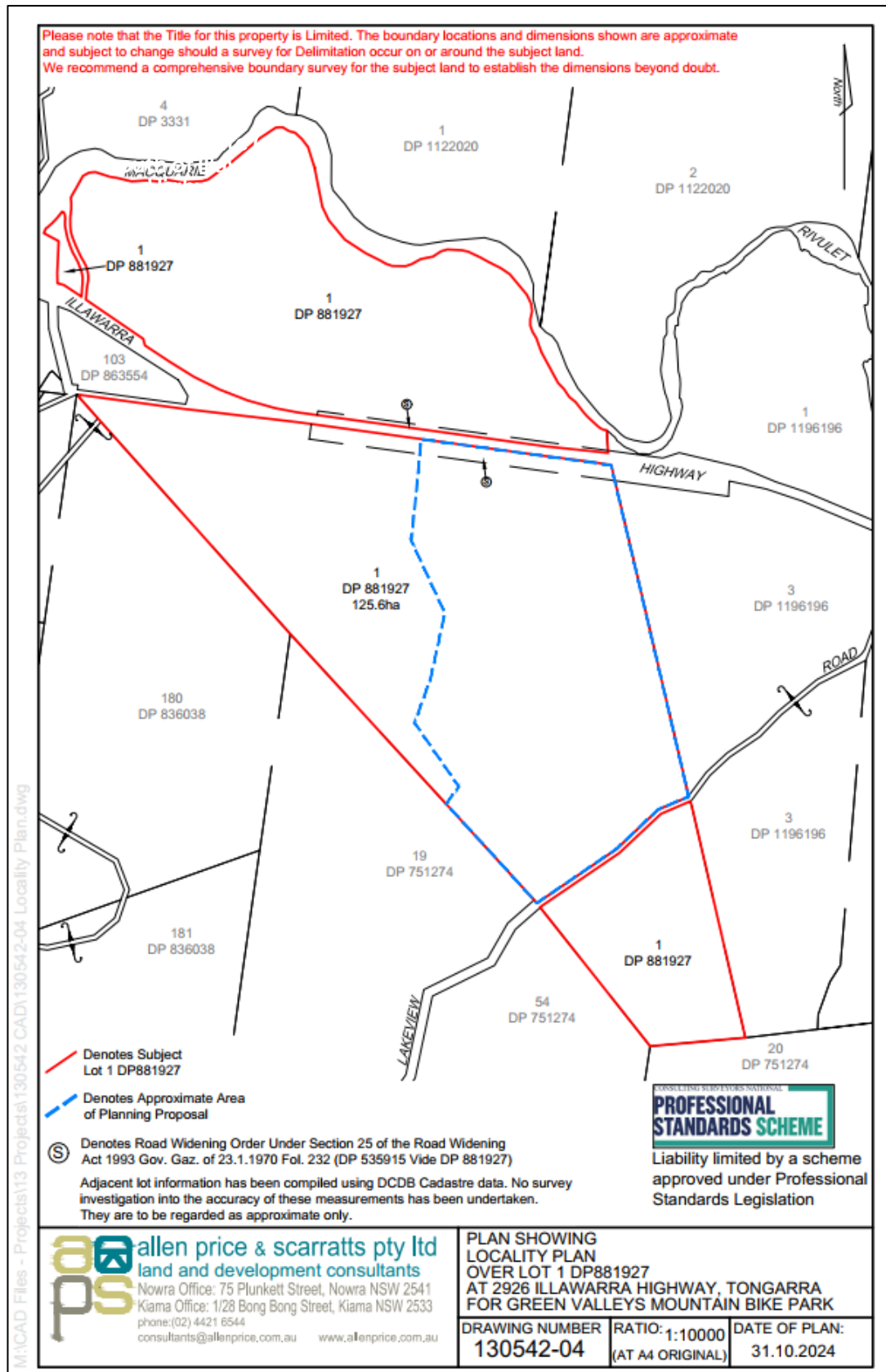


Figure 4: Mountain Bike Park – operational area



3.0 – SHELLHARBOUR CITY COUNCIL (SCC) CONSULTATION

A scoping report was prepared and submitted to SCC with Pre-lodgement advice being received dated 04/03/2024. An excerpt of this pre-lodgement advice is seen below from page 13 under the heading 'Flood impacts':

.....
"Under the current Macquarie Rivulet Flood Study, the property is located outside the 1% Annual Exceedance Probability (AEP) flood extent but within both the Probable Maximum Flood (PMF) extent and the Flood Planning Area (FPA).

The Draft Macquarie Rivulet Floodplain Risk Management Study and Plan (FRMSP) will be placed on public exhibition from 28 February 2024 to 20 March 2024, and updates the previous Macquarie Rivulet Flood Study (2017) with new flood estimation and modelling methods to define flood behaviour for all major tributaries and drainage lines within the catchment.

The Draft Study and Plan indicates that the site will also now be impacted in the 1% AEP and partly classified as floodway (the Draft mapping is available on Council's website during the public exhibition period). This raises issues with respect to storage of materials, elements of the park becoming floating debris, as well as issues around emergency access in floods, as the property will be isolated. These issues need to be addressed as part of any planning proposal.

It is noted that the Draft documents have not yet been adopted by Council, however, the Flood Study has been adopted, and it is considered the potential impacts should be addressed at PP stage in the form of a Flood and Risk Impact Assessment and Emergency Evacuation Plan.

In addition, the planning proposal would need to discuss and justify any inconsistency with **Local Planning Direction 4.1 Flooding** and must include provisions that give effect to and are consistent with:

- a) The NSW Flood Prone Land Policy,
- b) The principles of the Floodplain Development Manual 2005,
- c) The Considering flooding in land use planning guideline 2021, and
- d) Any adopted flood study and/or floodplain risk management plan prepared in accordance with the principles of the Floodplain Development Manual 2005 and adopted by the relevant council.

Consultation with the Department of Environment, Energy and Science (Flood) will be required (to be confirmed at Gateway) specifically with respect to a review of the flood assessments required to be submitted with the planning proposal."

.....
This FIRA has been prepared in response to the above advice with specific consideration to the issues raised therein.

Further consultations with SCC have resulted in access being provided to the Macquarie Rivulet FRMSP Results including time series mapping etc.

4.0 – ON-SITE FLOOD IMPACTS

This section of the FIRA deals with flooding impacts on the site as identified under the existing MRFS and FRMSP. Flood maps produced by these studies are necessarily at a large scale, and so must be reproduced at a finer resolution to be useful for individual site impact assessments.

It is noted that as this proposal does not include any physical changes to the site, there is no need for ‘post-development’ runs of the flood model to assess changes in impact as a result of the proposal. All results are directly extracted from the FRMSP files provided by SCC.

4.1 FLOOD HAZARD

Flood Hazard maps are prepared for the 1% AEP storm event (inclusive of 50% blockage to hydraulic structures) and the PMF storm event (inclusive of 100% blockage to hydraulic structures). These maps are attached in **Appendix 1**.

Hazard classifications are in accordance with the Flood Risk Management Guideline FB03 (2023) and range from H1 to H6 as seen in **Figure 6** below.

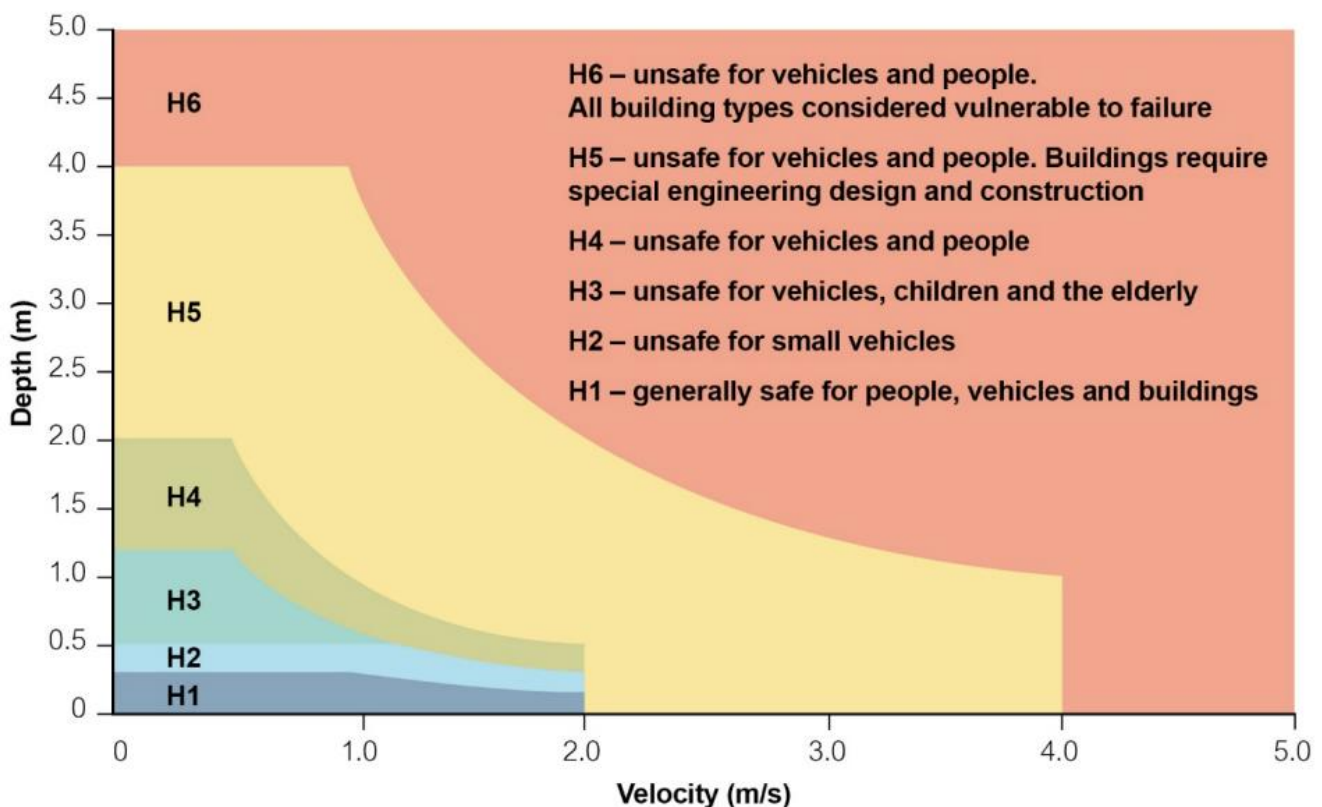


Figure 6: General Flood Hazard Vulnerability Curve

It is further noted within FB03 that the H1 to H4 categories listed above are equivalent to ‘low hazard’ and H5 to H6 equivalent to ‘high hazard’ in the Floodplain Development Manual (2005).



Considering the 1% AEP event, it can be seen from the maps in **Appendix 1** that that impacts to the site are limited to low hazard only. Further, none of the existing structures or parking areas are within the flood impacted area at all.

The site entry/exit and access roads are impacted in the 1% AEP event, but are limited to H1 hazard areas and are therefore considered generally safe for people, vehicles and buildings.

The lowest portion of three of the mountain biking trails are impacted in the 1% event, however as this includes no structures (any jumps impacted are of earthen construction) it is considered there is no risk of debris mobilization in this event. It is noted that hazard on the site reaches as high as H4, however it is anticipated this may be managed through site management controls preventing use of the trails during storm events.

Considering the PMF event, it can be seen from the maps in **Appendix 1** that impacts to the site are generally low hazard, with some high hazard areas.

The majority of parking areas are not impacted at all with some limited impacts to the overflow parking area and entry/exit access roads. Similar to the 1% AEP event however, these are all limited to H1 hazard flows and are therefore generally considered safe for people, vehicles and buildings.

The lowest portion of five of the mountain biking trails are impacted in the PMF event, however as this includes no structures (any jumps impacted are of earthen construction) it is considered there is no risk of debris mobilization in this event. It is noted that hazard on the site reaches as high as H5, however it is anticipated this may be managed through site management controls preventing use of the trails during storm events.

4.2 FLOOD HYDRAULIC CATEGORIES

Flood Hydraulic Category maps are prepared for the 1% AEP storm event (inclusive of 50% blockage to hydraulic structures) and the PMF storm event (inclusive of 100% blockage to hydraulic structures). These maps are attached in **Appendix 2**.

Hydraulic categories are determined in accordance with Table 9 of the FRMSP as seen below.

Category	Floodway Definition Parameters
Floodway	$VD > 0.25 \text{ m}^2/\text{s}$ AND $V > 0.25 \text{ m/s}$; OR $V > 1.0 \text{ m/s}$ AND $D > 0.15 \text{ m}$
Flood Storage	Areas outside floodway where $D > 0.5 \text{ m}$
Flood Fringe	Areas outside floodway where $D < 0.5 \text{ m}$

Considering the 1% AEP event, it can be seen from the maps in **Appendix 2** that impacts to the entry/exit access areas are considered 'flood fringe', while all parking areas (inclusive of overflow) are free from flooding impacts as in Section 4.1 above.

The Floodway impacts to the site are limited to two of the mountain biking trails, with the remainder being flood fringe.

Considering the PMF event, it can be seen from the maps in **Appendix 2** that impacts to the entry/exit access areas are considered 'flood fringe' as well as very limited impacts to the overflow parking area.

The Floodway impacts to the site are limited to three of the mountain biking trails, with the remainder being flood fringe.

4.3 SUMMARY OF ON-SITE IMPACTS

Considering Sections 4.1 and 4.2 above it can be seen in both the 1% and PMF storm scenarios:

- the majority of the site is flood free;
- the majority of the flood impacted areas within the site are Low-Hazard Flood Fringe. This classification generally covers the entry/exit roads and some limited impact to overflow parking areas.
- There is a small presence of High-Hazard Floodway in the north-east portion of the site that impacts some of the lowest elevation areas of mountain biking trails. This does not impact upon ANY structures or trafficable areas.

It is recommended that site management controls be put in place such that the site may not operate during periods of wet weather – it is noted that this is in accordance with the site's current operations practices.

Assuming the above recommendation is put in place, it is considered that the proposal satisfies the objectives of the FDM and other documentation listed under Section 1 as it pertains to flood safety on the site.

5.0 – OFF-SITE FLOOD IMPACTS

This section of the FIRA deals with flooding impacts off the site as a result of changes brought about by the development that influence flood behaviour.

It is noted that as this proposal does not include any physical changes to the site, there is no need for 'post-development' runs of the flood model to assess changes in impact as a result of the proposal. All results are directly extracted from the FRMSP files provided by SCC.

5.1 FLOOD HAZARD

It is considered there is no off-site flood hazard impacts as part of this proposal because:

- There are no physical changes to the site that would influence flood behaviour; and
- The flood affected areas of the site do not contain vehicles or structures that could become debris during a flood event within the assessed hazard categories

5.2 FLOOD HYDRAULIC CATEGORIES

It is considered there is no off-site flood hydraulic category impacts as part of this proposal because:

- There are no physical changes to the site that would influence flood behaviour.

5.3 SUMMARY OF OFF-SITE IMPACTS

Considering Sections 5.1 and 5.2 above it can be seen in both the 1% and PMF storm scenarios:

- the majority of the site is flood free;
- there are no changes to the site as part of the proposal that will influence flood behaviour or impacts to adjoining properties
- there is no structures or vehicles present within hazard categories that would have the potential to create floating debris.

It is considered that the proposal satisfies the objectives of the FDM and other documentation listed under Section 1 as it pertains to flood safety off the site.

6.0 – EVACUATION ASSESSMENT

This assessment has been prepared by a qualified engineer with reference to the following guidelines and documents:

- *Macquarie Rivulet Flood Study (MRFS) 2017; and*
- *Macquarie Rivulet Floodplain Risk Management Study and Plan (FRMSP) 2024;*
- *Illawarra Flood Emergency Sub Plan;*
- *NSW Flood Risk Management Manual (2023);*
- *SES Timeline Evacuation Model;*
- *The Application of Timelines to Evacuation Planning (SES, 2024); and*
- *A Technical Guideline for the use of the SES Timeline Evacuation Model in Flood Evacuation Planning (Molino et al. 2013)*

6.1 EVACUATION ROUTE

The site has frontage and direct access to the Illawarra Highway, however the FRMSP and the Illawarra Flood Emergency Sub Plan identify that Tullimbar becomes isolated in the 1% AEP event due to inundation of the Illawarra Highway. As such, the site is similarly isolated from Albion Park



during these events. Heading west from the site similarly results in H5-H6 affected inundation points prior to heading up Macquarie Pass.

6.2 FLOOD BEHAVIOUR

We note that the Macquarie Rivulet Flood Study (MRFS) dated 2017 was recently superseded with updated modelling as part of the Macquarie Rivulet Floodplain Risk Management Study & Plan (2024). This more recent report by WMA Water is considered critical for 1% AEP and PMF assessment.

The FRMSP identifies that the Illawarra Highway is submerged at several locations during a PMF event, and as such evacuation through to the M1 Motorway is unlikely. It is noted that the FRMSP considers records PMF events for 1 and 2hr scenarios.

The following is an excerpt from the FRMSP:

“Due to the nature of overland flow in the study area, flood warnings are difficult to prepare and disseminate. The quick catchment response time (within hours) does not allow time to interpret recorded rainfall data, construct and disseminate a flash flood warning, with enough time for the community to be able to take meaningful action to prepare... The quick catchment response time typically does not allow time to interpret recorded rainfall data, construct and disseminate a flash flood warning, with enough time for the community to be able to take meaningful action to prepare. In addition, there are currently limited rain gauges in the upper reaches of the local catchment, and the installation and operation of additional gauges would involve significant upfront and ongoing costs.”

It is further recommended by the FRMSP that consideration of severe weather warnings from BoM are the best defence against flooding impacts. To this end and as previously recommended in Sections 4 & 5 it is critical that the site management plan include requirements to not be operating during wet weather periods.

6.3 EXISTING EVACUATION ROUTE LOAD

The relevant evacuation catchment is considered to be the FPA affected lots per the FRMSP. This is estimated as 350-400 lots in the flood affected areas between Albion Park and the Illawarra Highway. This includes a combination of residential, rural and commercial land areas, and as such a conservative allowance of 1.5 vehicles per lot is considered appropriate for assessment – yielding a total of 600 vehicles for evacuation.

6.4 PROPOSED EVACUATION ROUTE LOAD

The Planning Proposal details that the site does not operate during wet weather periods – as such it is considered that no evacuation should be required.

A worst-case scenario would be that this management plan is ignored, and a competition day held despite weather warnings. It is estimated by the site operators that approximately 400 people would attend the site on such days (200 competitors and 200 spectators). It is assumed that most



of the spectators would be travelling with competitors, and as such a rate of 1.5 persons per vehicle is adopted – yielding 267 vehicles for evacuation.

6.5 WARNING TIME

The FRMSP indicates that “...there are currently limited rain gauges in the upper reaches of the local catchment, and the installation and operation of additional gauges would involve significant upfront and ongoing costs”. The study also indicates that as the critical duration for various storm events typically varies in the catchment from 180 to 540 minutes, that warning time is limited. This combined with the lack of rainfall gauges in the upper reaches of the catchment means that a particular warning time cannot be guaranteed.

This combined with the typical 6hr time for SES mobilisation means that any event up to a 6hr critical duration will reach their peak prior evacuation commencing. This further reinforces the need to restrict site operation during periods of wet weather.

6.6 CRITICAL HYDROGRAPH ASSESSMENT

The PMFs assessed for the site are short duration events (1hr and 2hr events) which rise rapidly, but in this catchment also fall equally as quickly. The worst case PMF that inundates the Illawarra highway at the site returns back to pre-flood levels within 3 hours. These sudden storm events are difficult to predict, and so advanced notice for evacuation is not generally possible. However, with a short inundation period it is acceptable for people to shelter on the site (in their vehicles or within the existing site structures)

For longer duration events the inundation time will exceed the recommended 5 hours maximum, and with the lack of warning time available in the catchment it is not anticipated that efficient evacuation would be possible. Again, this points to preventing operation of the site during wet weather periods as the most reliable way to prevent evacuation issues at the site.

6.7 EVACUATION RECOMMENDATIONS

The following outcomes and recommendations are made regarding evacuation at the site:

- It is identified in the FRMSP that the site is isolated by 1% AEP events;
- It is identified within the FRMSP that adequate warning time is not available within the catchment to enable evacuation – this is the existing condition at the site and surrounding areas;
- The planning proposal does not increase use at the site beyond existing levels, as such the proposal does not have a negative impact to existing evacuation performance;
- It is recommended that the site management plan require that the site does not operate within forecast periods of wet weather. This will prevent the need for evacuation in long duration storm events; and



- In the event that the worst-case scenario that the management plan were ignored and an unexpected 'flash' flood occurred, the inundation durations are acceptable for persons to take shelter on the site temporarily.

7.0 – RECOMMENDATIONS

The Summary of recommendations relating to flooding at the site are:

- 1) The site management plan be prepared to restrict site operations during periods of forecast wet weather

The implementation of the above recommendation/s is considered appropriate to address the flood safety requirements of the site in terms of safe occupation and efficient evacuation (if required).

8.0 – LOCAL PLANNING DIRECTION 4.1

Focus area 4: Resilience and Hazards of the Local Planning Directions has the objectives of:

- a) ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005, and
- b) ensure that the provisions of an LEP that apply to flood prone land are commensurate with flood behaviour and includes consideration of the potential flood impacts both on and off the subject land.

To that end, the below table is provided to assess the various components of the Direction.

No.	Direction	Comment
1	A planning proposal must include provisions that give effect to and are consistent with: <ol style="list-style-type: none">a) the NSW Flood Prone Land Policy,b) the principles of the Floodplain Development Manual 2005,c) the Considering flooding in land use planning guideline 2021, andd) any adopted flood study and/or floodplain risk management plan prepared in accordance with the principles of the Floodplain Development Manual 2005 and adopted by the relevant council.	Compliance demonstrated throughout this FIRA Compliance demonstrated in sections 4 and 5 above. Compliance demonstrated throughout this FIRA Complies as per MRFS and FRMSP
2	A planning proposal must not rezone land within the flood planning area from Recreation, Rural, Special Purpose or Conservation Zones to a Residential, Employment, Mixed Use, W4 Working Waterfront or Special Purpose Zones.	Complies – proposal does not rezone land to any of the listed categories
3	A planning proposal must not contain provisions that apply to the flood planning area which:	See below

3a	permit development in floodway areas	No new development is proposed within floodway areas
3b	permit development that will result in significant flood impacts to other properties	No off-site impacts in events up to and including the PMF are anticipated per Sections 4 and 5 of this FIRA
3c	permit development for the purposes of residential accommodation in high hazard areas	No residential accommodation proposed
3d	permit a significant increase in the development and/or dwelling density of that land	No new development or dwellings proposed
3e	permit development for the purpose of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate	None of the restricted development types are proposed
3f	permit development to be carried out without development consent except for the purposes of exempt development or agriculture. Dams, drainage canals, levees, still require development consent	No physical works proposed as part of planning proposal
3g	are likely to result in a significantly increased requirement for government spending on emergency management services, flood mitigation and emergency response measures, which can include but are not limited to the provision of road infrastructure, flood mitigation infrastructure and utilities, or	Planning proposal is compatible with existing FRMSP. No additional cost is anticipated as a result of the Evacuation Assessment in Section 6
3h	permit hazardous industries or hazardous storage establishments where hazardous materials cannot be effectively contained during the occurrence of a flood event.	Site shed containing hazardous materials (fuel, oil, weed spray, batteries etc) is outside flood impacted area
4	A planning proposal must not contain provisions that apply to areas between the flood planning area and probable maximum flood to which Special Flood Considerations apply which:	See below
4a	permit development in floodway areas	No new development is proposed within floodway areas
4b	permit development that will result in significant flood impacts to other properties	No off-site impacts in events up to and including the PMF are anticipated per Sections 4 and 5 of this FIRA
4c	permit a significant increase in the dwelling density of that land	No dwellings proposed as part of planning proposal
4d	permit the development of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care	None of the restricted development types are proposed

	facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate	
4e	are likely to affect the safe occupation of and efficient evacuation of the lot, or	As the proposal does not intensify use, the safe occupation and evacuation of the land remains unaffected
4f	are likely to result in a significantly increased requirement for government spending on emergency management services, and flood mitigation and emergency response measures, which can include but not limited to road infrastructure, flood mitigation infrastructure and utilities	Planning proposal is compatible with existing FRMSP. No additional cost is anticipated as a result of the Evacuation Assessment in Section 6
5	For the purposes of preparing a planning proposal, the flood planning area must be consistent with the principles of the Floodplain Development Manual 2005 or as otherwise determined by a Floodplain Risk Management Study or Plan adopted by the relevant council.	FPA is as defined by the adopted Macquarie Rivulet FRMSP (2024)

9.0 – CONCLUSION

It is demonstrated throughout sections 4 to 7 of this FIRA the Planning Proposal is in accordance with the objectives of:

- The NSW Flood Prone Land Policy;
- The Floodplain Development Manual (FDM) 2005;
- The Flood Risk Management Manual 2023;
- Considering flooding in land use planning Guideline 2021;
- Local Planning Direction 4.1; and
- The Macquarie Rivulet Floodplain Risk Management Study and Plan (FRMSP) 2024.

As such the Planning Proposal is considered acceptable from a Flood Impact and Risk Assessment perspective



Appendices of: Flood Impact and Risk Assessment (FIRA)

Planning Proposal – Greenvalleys Mountain Bike Park

PREPARED FOR

Nicholas Haertsch – Greenvalleys Mountain Bike Club Inc

SITE ADDRESS

2926 Illawarra Highway (Lot 1 DP 881927), Tongarra

DATE

28/11/2024

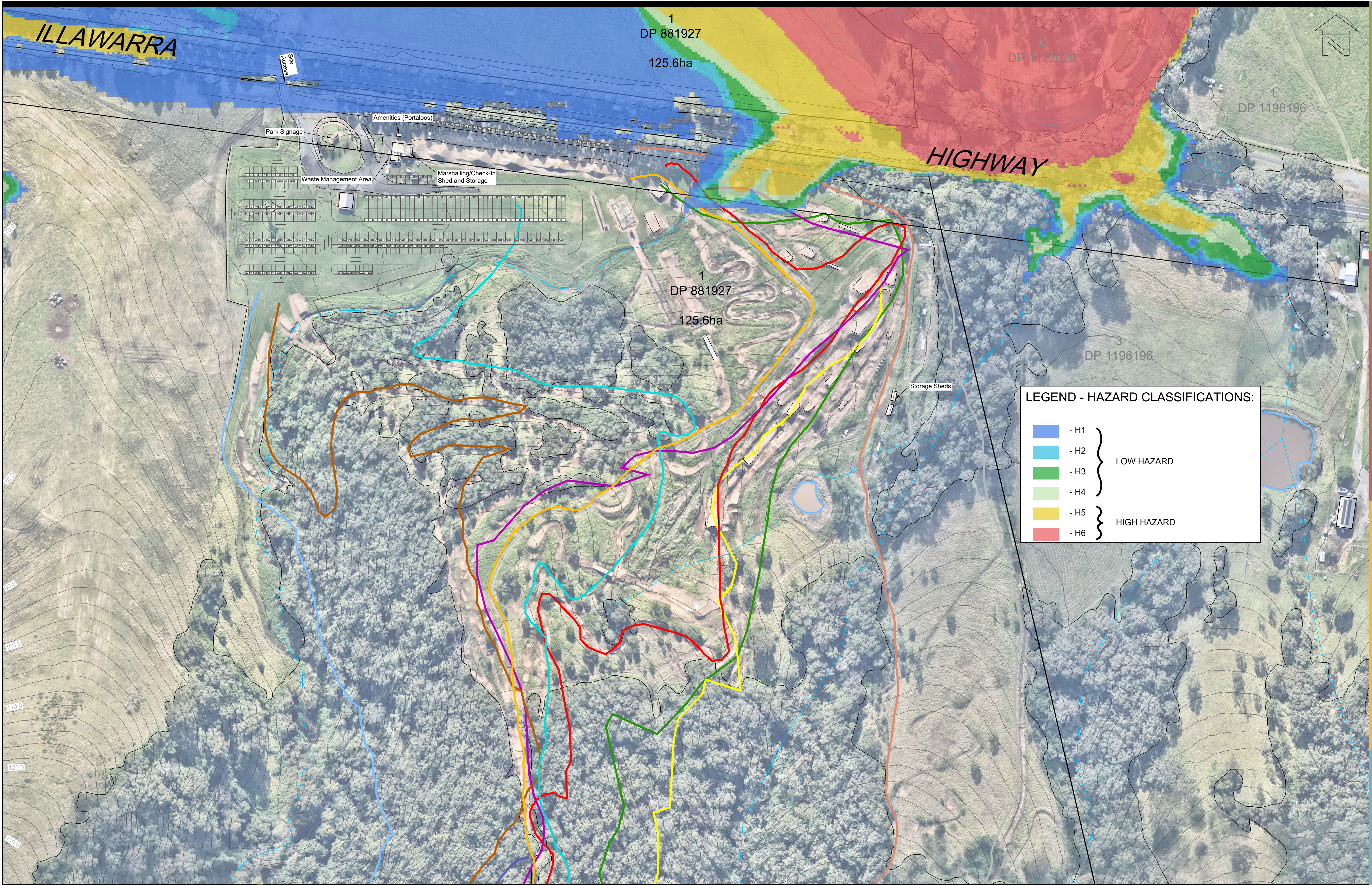
PROJECT REFERENCE

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10.0 – APPENDICES

10.1 APPENDIX 1 – FLOOD HAZARD MAPS PER FRMSP



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PMF HYDRAULIC HAZARD (100% BLOCKAGE) MR FRMSP
PLANNING PROPOSAL
Over Lot 1 DP881927
At 2926 Illawarra Highway, Tongarra
For Green Valleys Mountain Bike Park

BEWARE!

THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL BE RESPONSIBLE, AT THE CONTRACTOR'S EXPENSE, FOR ANY REPAIRS TO DAMAGE CAUSED DURING CONSTRUCTION.

RATIO:

1:1000

(AT A1 ORIGINAL)

DATUM:

AUSTRALIAN HEIGHT DATUM

ORIGIN: BM NAIL IN KERB
RL 58.896 (CORS)

DATE OF PLAN: NOVEMBER 2024



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SURVEY	APS	REV
DESIGN	N/A	0
DRAWN	RMH	
CHECK'D	RMH	

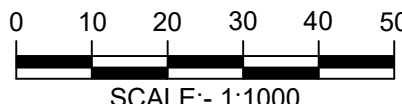
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DESCRIPTION
ISSUED FOR PLANNING PROPOSAL

BY: RMH
DATE: 28/11/2024

SCALE BAR



DRAWING STATUS

FOR INFORMATION
NOT TO BE USED FOR CONSTRUCTION PURPOSES

DRAWING NUMBER

130542-06

SHEET

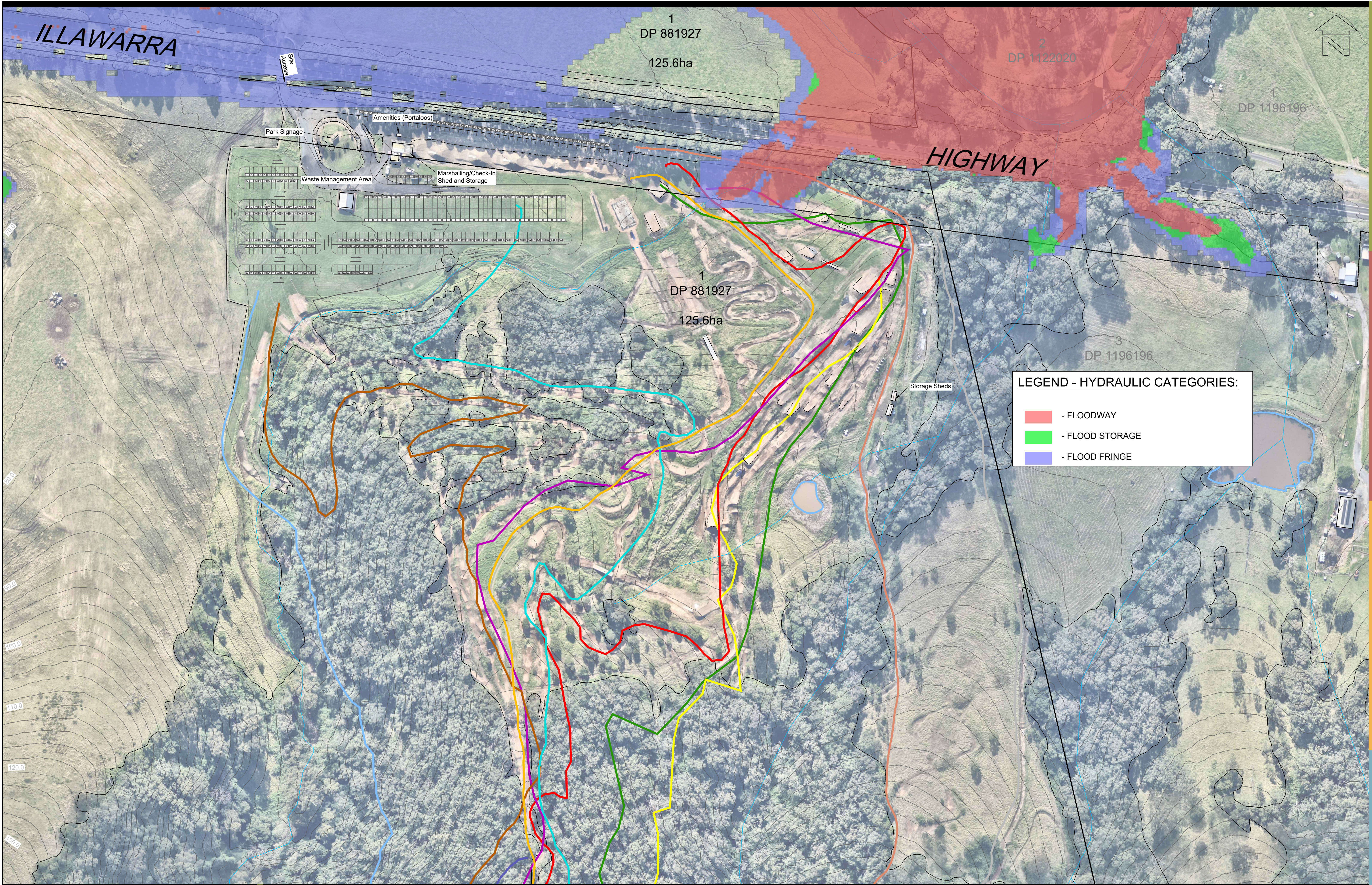
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REVISION

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10.2 APPENDIX 2 – FLOOD HYDRAULIC CATEGORY MAPS PER FRMSP



M:\CAD Files - Projects\13 Projects\130542 CAD\130542-07 1% Flood Hydraulic Category Map.dwg

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1% AEP HYDRAULIC CATEGORY (50% BLOCKAGE) MR FRMSP
PLANNING PROPOSAL
Over Lot 1 DP881927
At 2926 Illawarra Highway, Tongarra
For Green Valleys Mountain Bike Park

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1:1000
(AT A1 ORIGINAL)

DATUM:
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DATE OF PLAN: NOVEMBER 2024

PROFESSIONAL STANDARDS SCHEME
Liability limited by a scheme approved under Professional Standards Legislation

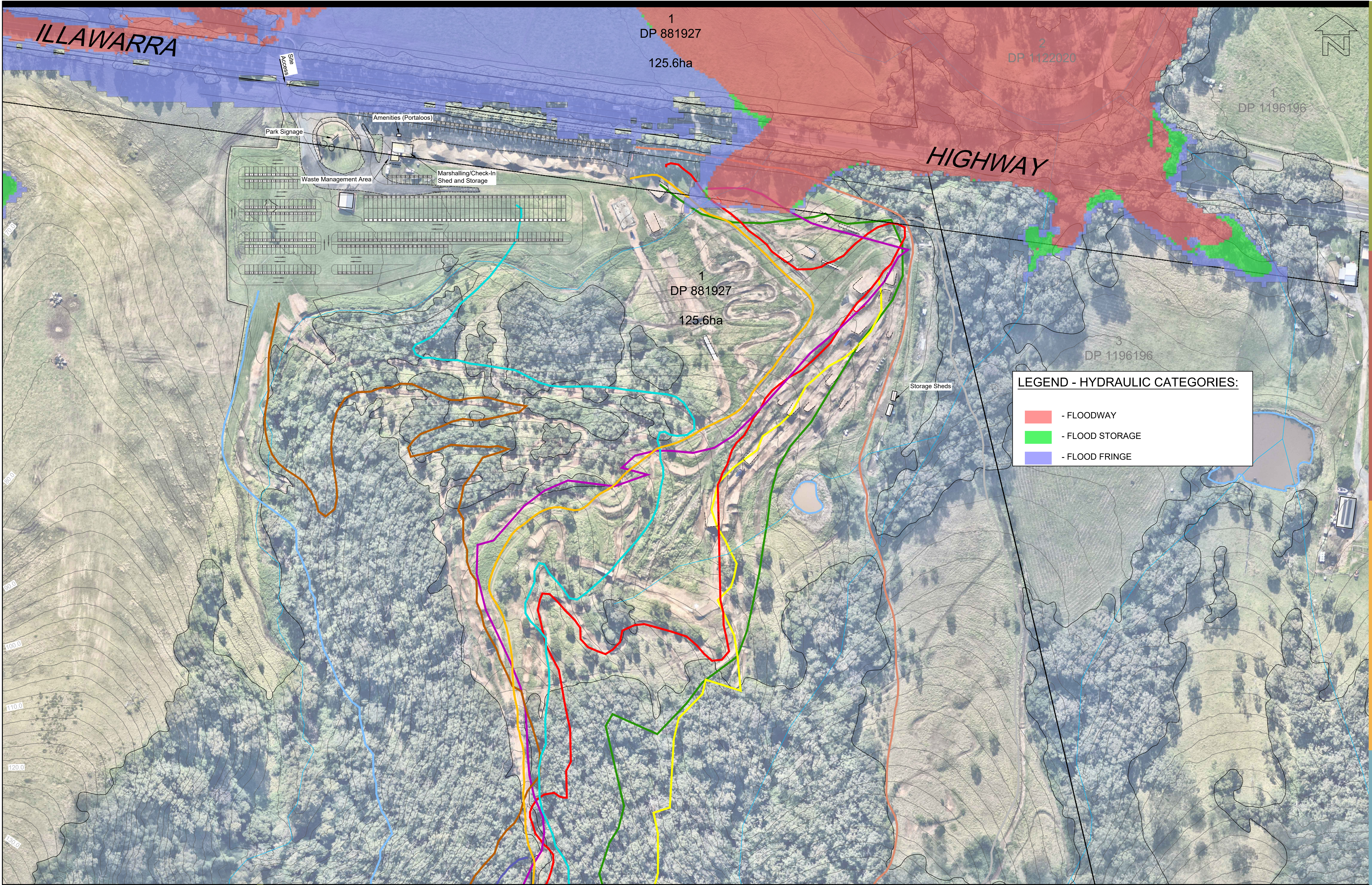
ALLEN PRICE PTY LTD
Nowra Office • 75 Plunkett St, Nowra NSW 2541
Kiama Office • 1/28 Bong Bong St, Kiama NSW 2533
Wollongong Office • Suite 1 Level 2 83-85 Market St, Wollongong NSW 2500
(02) 4421 6544 • consultants@allenprice.com.au • allenprice.com.au

SURVEY	APS	REV
DESIGN	N/A	0
DRAWN	RMH	
CHECK'D	RMH	

DESCRIPTION	BY	DATE
ISSUED FOR PLANNING PROPOSAL	RMH	28/11/2024

SCALE BAR
0 10 20 30 40 50
SCALE:- 1:1000

DRAWING STATUS		
FOR INFORMATION NOT TO BE USED FOR CONSTRUCTION PURPOSES		
DRAWING NUMBER	SHEET	REVISION
130542-07	001	0



AllenPrice

Development Consultants

PMF HYDRAULIC CATEGORY (100% BLOCKAGE) MR FRMSP

PLANNING PROPOSAL

Over Lot 1 DP881927
At 2926 Illawarra Highway, Tongarra

For Green Valleys Mountain Bike Park

BEWARE!

THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL BE RESPONSIBLE, AT THE CONTRACTOR'S EXPENSE, FOR ANY REPAIRS TO DAMAGE CAUSED DURING CONSTRUCTION.

RATIO:

1:1000

(AT A1 ORIGINAL)

DATUM:

AUSTRALIAN HEIGHT DATUM

ORIGIN: BM NAIL IN KERB
RL 58.896 (CORS)

DATE OF PLAN: NOVEMBER 2024

SURVEY	APS	REV
DESIGN	N/A	0
DRAWN	RMH	
CHECK'D	RMH	

PROFESSIONAL STANDARDS SCHEME

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SCALE BAR

0 10 20 30 40 50

SCALE:- 1:1000

DRAWING STATUS

FOR INFORMATION

NOT TO BE USED FOR CONSTRUCTION PURPOSES

DRAWING NUMBER

130542-08

SHEET

001

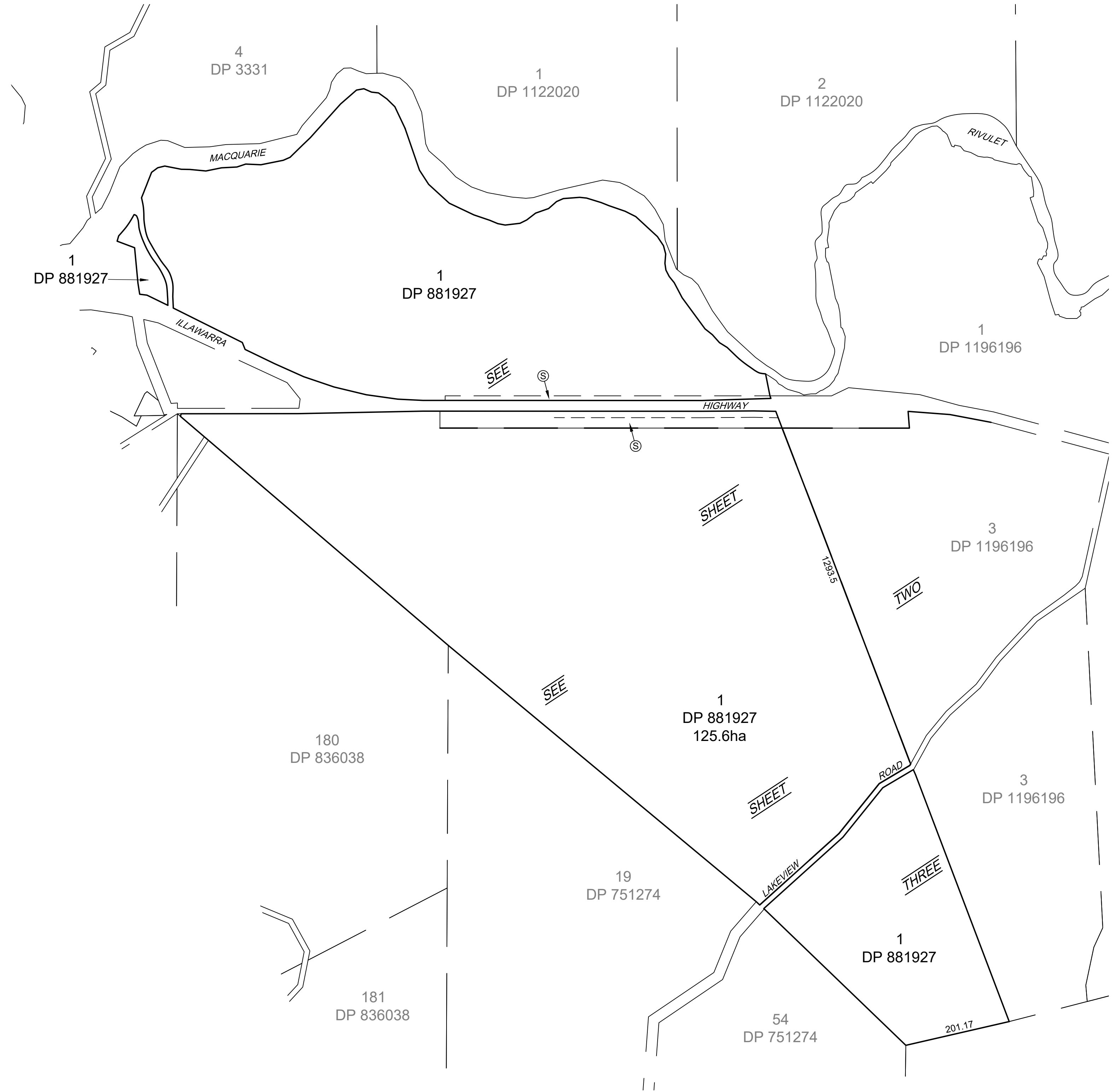
REVISION

0

M:\CAD Files - Projects\13 Projects\130542 CAD\130542-08 PMF Flood Hydraulic Category Map.dwg



10.3 APPENDIX 3 – SITE PLANS



Please note that the Title for this property is Limited. The boundary locations and dimensions shown are approximate and subject to change should a survey for Delimitation occur on or around the subject land.

We recommend a comprehensive boundary survey for the subject land to establish the dimensions beyond doubt.

NOTE:

ADJACENT LOT INFORMATION HAS BEEN COMPILED USING DCDB CADASTRE DATA

CONTOUR INFORMATION HAS BEEN COMPILED USING ELVIS LIDAR DATA

TRACK LINE WORK HAS BEN OBTAINED FROM HANDHELD GPS MEASUREMENTS BY THE LAND OWNER. NO SURVEY INVESTIGATION INTO THE ACCURACY OF THESE MEASUREMENTS HAS BEEN UNDERTAKEN. THEY ARE TO BE REGARDED AS APPROXIMATE ONLY.

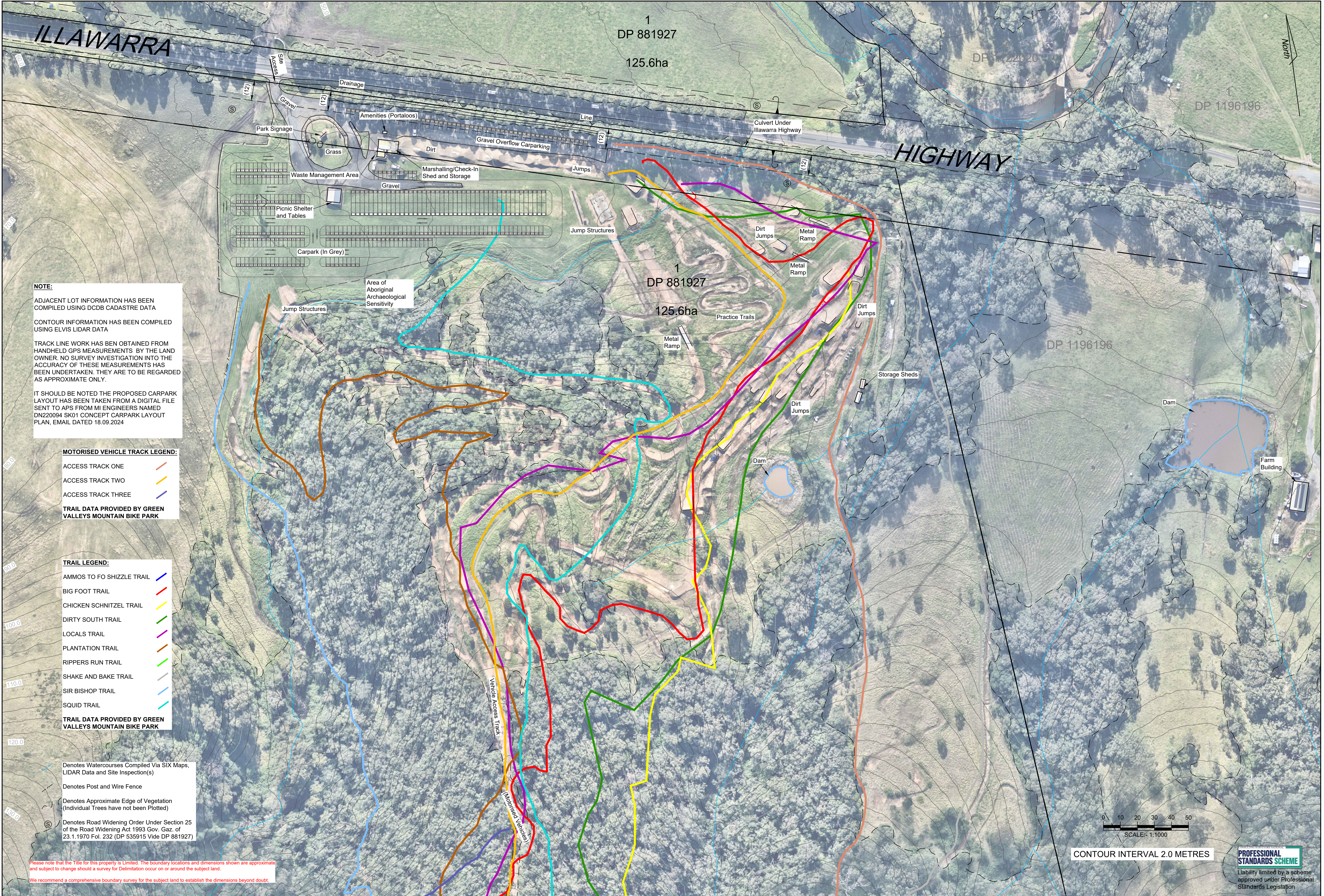


Ⓢ Denotes Road Widening Order Under Section 25 of the Road Widening Act 1993 Gov. Gaz. of 23.1.1970 Fol. 232 (DP 535915 Vide DP 881927)

LOCALITY DIAGRAM
REDUCTION RATIO 1:5000



RATIO: 1:500 (AT A1 ORIGINAL)	DATUM: AUSTRALIAN HEIGHT DATUM	SURVEY	MH	REV	DESCRIPTION	BY	DATE	 allen price & scarratts pty ltd land and development consultants Nowra Office: 75 Plunkett Street, Nowra NSW 2541 Kiama Office: 1/28 Bong Bong Street, Kiama NSW 2533 phone: (02) 4421 6544 consultants@allenprice.com.au www.allenprice.com.au	PLAN SHOWING SITE AND BIKE TRAIL LAYOUT OVER PART OF LOT 1 DP881927 NO. 2926 ILLAWARRA HIGHWAY TONGARRA FOR GREEN VALLEYS MOUNTAIN BIKE PARK			DRAWING STATUS		
	ORIGIN: BM NAIL IN KERB RL 58.896 (AHD)	DESIGN	-	A	12m OFFSET LINE ADDED TO HIGHWAY	BD	27.09.2024					DRAWING NUMBER 130542-02		SHEET 01 OF 03
	DATE OF SURVEY: 19.06.2024	DRAWN	MH/CC											
		CHECK'D	TL											



RATIO: 1:500 (AT A1 ORIGINAL)	DATUM: AUSTRALIAN HEIGHT DATUM	SURVEY	MH	REV	DESCRIPTION	BY	DATE	 allen price & scarratts pty ltd land and development consultants Nowra Office: 75 Plunkett Street, Nowra NSW 2541 Kiama Office: 1/28 Bong Bong Street, Kiama NSW 2533 phone: (02) 4421 6544 consultants@allenprice.com.au www.allenprice.com.au	PLAN SHOWING SITE AND BIKE TRAIL LAYOUT OVER PART OF LOT 1 DP881927 NO. 2926 ILLAWARRA HIGHWAY TONGARRA FOR GREEN VALLEYS MOUNTAIN BIKE PARK	DRAWING STATUS		
	ORIGIN: BM NAIL IN KERB RL 58.896 (AHD)	DESIGN	-	A	12m OFFSET LINE ADDED TO HIGHWAY	BD	27.09.2024			DRAWING NUMBER	SHEET	REVISION
	DATE OF SURVEY: 19.06.2024	DRAWN	CC							130542-02	02	A
		CHECK'D	TL								OF	

