

## **Bushfire Assessment**

Proposed subdivision of 3660 The Escort Way, Cudal NSW

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## Executive summary

### Background

A planning proposal is proposed for 3660 The Escort Way, Cudal NSW to rezone the eastern area of the lot to an employment zone. The proposed indicative development plan will include fourteen industrial lots and one general industrial lot. The development requires assessment for bushfire management and asset protection.

A desktop study, site inspection and site assessment was undertaken of the subdivision to determine compliance with Planning for Bushfire Protection (2019).

### Objectives of the investigation

A site assessment was conducted in accordance with the procedures detailed in *Planning for Bushfire Protection* (NSW Rural Fire Service 2019) to determine compliance of the subdivision with acceptable solutions provided in the guideline.

### Summary of the assessment

An inspection of the site was made on 4 September 2023.

The site has a historical land-use of grazing and cropping. Vegetation on the site comprised cultivated crops and remnant woodland.

The site is the proposed development area and is surrounded by woodland, grazed grassland, a managed tree windbreak to the north, managed grassland as part of an industrial lot to the east and Boree Creek to the west. Slopes range between 0 to 5° within the development area. A maximum slope of >5 to 10° occurs within 140m of the development area and off-site to the west.

The subdivision includes fifteen industrial lots ranging in size from approximately 4,000m<sup>2</sup> up to 6ha. Lot 1 includes an existing concrete batching facility on-site where no additional development is proposed.

The subdivision plan complies with the acceptable solutions provided within *Planning for Bushfire Protection*. Suitable asset protection zones are available in the form of road reserves and building setbacks.

The main access road will be two lane and unsealed with a dead end less than 200m in length. An alternative access has been designed to connect to the existing northern internal road via a laneway. The engineering design of the roads has not been finalised but is recommended to be in accordance with *Planning for Bushfire Protection*. Management of other requirements for property access roads will be undertaken by future lot owners. No fire trails are proposed.

A reticulated water supply will be available on the site. The engineering design of the water supply has not been finalised but is recommended to be in accordance with *Planning for Bushfire Protection*.

Electricity will be underground. No underground gas services will be available to the site.

No significant environmental features impact on the development.

A bushfire management plan (including an emergency and evacuation plan) in accordance with *Planning for Bushfire Protection* (2019) should be prepared on a site-specific basis prior to building construction. Implementation of bushfire plans will require that future landholders are familiar with *Planning for Bushfire Protection* which is available for viewing on the NSW Rural Fire Service website, [www.rfs.nsw.gov.au](http://www.rfs.nsw.gov.au).

The site investigation and vegetation survey indicate that the site is suitable for the development subject to conditions in this report. Bushfire attack levels (BAL) and asset protection zones (APZ) of the site are based on the surrounding vegetation.

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## 1. Introduction

A planning proposal is proposed for 3660 The Escort Way, Cudal NSW to rezone the eastern area of the lot to an employment zone. The proposed indicative development plan will include fifteen industrial lots, access roads and underground infrastructure. The site comprises Lots 2 to 15 and is approximately 10 hectares in size. The development requires assessment for compliance with NSW Rural Fire Service *Planning for Bushfire Protection* (NSW Rural Fire Service 2019).

## 2. Scope of work

Envirowest Consulting Pty Ltd was commissioned by iPlan Projects to undertake an assessment of the development area in a proposed industrial subdivision at 3660 The Escort Way, Cudal for compliance with *Planning for Bushfire Protection* (NSW Rural Fire Service 2019).

## 3. Site assessment

### 3.1 Site identification

The site under assessment is Lots 2 to 15 in the proposed industrial subdivision at 3660 The Escort Way, Cudal NSW (Figure 1). The total lot size is approximately 16 hectares. The subdivision will create fifteen industrial lots and access roads.

### 3.2 Site description

A description of the site was made from a desktop study and field inspection. Information for the desktop study was obtained from topographic maps, aerial photographs and soil and geological maps. A site inspection and assessment was undertaken on 4 September 2023. Detailed landscape and vegetation descriptions were made across the site.

The current land-use for the site is cropping with industrial use and surrounding areas are grazed grassland, industrial, residential and Boree Creek to the west.

### 3.3 Topography

The site consists of very gently inclined slopes of 0° to 5° in the proposed development area. Site aspect is to the west. A maximum slope of >5 to 10° occurs within 140m of the development area and off-site to the west.

### 3.4 Soils and geology

The site is located within the Cudal and Canowindra Soil Landscapes. The Cudal Soil Landscape comprises the undulating rises, undulating low hills and dissected plateaux around Cudal, with a small area northeast of Molong and to the south of Cowra. The dominant soils are Euchrozems, with Non-calcic Brown Soils on lower slopes. The geological unit is tertiary basalt. The parent rock is Basalt. The parent material is in situ deposits of parent rock.

The Canowindra Soil Landscape comprises undulating rises to undulating low hills southwest of Cudal and around Canowindra. The main soils are Non-calcic Brown Soils. Yellow and Brown Solodic Soils occur in some drainage lines, especially to the west, with shallow Red Podzolic Soils sometimes found on crests and upper slopes. Red Earths also occur on the higher crests, with depositional sands in some valleys. The geological unit is undifferentiated, Canowindra Porphyry, alluvial and Kenyu Formation. The parent rock Quartz feldspar porphyry with sparse garnets, shale, limestone, and alluvium. The soil parent material is made up of *in situ* and colluvial-alluvial deposits of above parent rock (eSPADE v2.2).

### 3.5 Vegetation

Vegetation on the site consisted of cultivated grasslands dominated by common oat and exotic crop weeds including common fumitory and henbit. Ruderal and wasteland weeds including plantain and milk

thistle surround the existing infrastructure on Lots 2 and 3. An isolated stand of remnant grey box eucalypts exists on Lot 14 and 15 to the east of the site. Neighbouring vegetation comprised grassland, open woodland and managed land.

#### 4. Bushfire Assessment

The bushfire assessment is designed to identify provisions to be considered when a development, subdivision or rural dwelling is proposed. The plan is to comply with S10.3 of the *Environmental Planning and Assessment Act 1979*.

The provisions to be applied depending on the vegetation formation are:

- Development and maintenance of Asset Protection Zones on the hazard side of the development;
- Provision and maintenance of adequate access;
- Design, staging and siting of the development;
- Provision of appropriate water supply and availability during times of bushfire emergency.

The following information should be read in conjunction with *Planning for Bushfire Protection* which is produced by the NSW Rural Bushfire Service and Planning NSW (2019). The reference is a guide for homeowners for effective bushfire protection strategies.

##### 4.1 Site description

<b>Lot and DP</b>	Lot 27 DP750137		
<b>Address</b>	3660 The Escort Way, Cudal NSW (Figure 1)		
<b>Location of site (UTM)</b>	Zone 55H	E 663752 m	N 6316699 m
<b>Zoning</b>	RU1 Primary Production		
<b>Area</b>	Approximately 16ha		
<b>Aerial photograph</b>	Figure 3		
<b>Ground photographs</b>	Figure 7		
<b>Development</b>	Industrial subdivision		

##### 4.2 Vegetation formation

The predominant vegetation formation on the site was cultivated grasslands of common oat. It is expected the crop will be removed to enable development and reclassified as managed land following construction of buildings and industrial use of the lots.

**Woodland** is located to the west of Lots 2 to 15 and on adjacent land to the north and south. Planning for Bushfire Protection (NSW Rural Fire Service 2019) considers woodland as a hazard.

**Grasslands** occur in all directions from the site and are used for apparent grazing and cropping. Planning for Bushfire Protection (NSW Rural Fire Service 2019) considers grassland as a hazard.

##### 4.3 Effective slope

Effective slope within the development area on Lots 2 and 15 is 0° to 5°. Maximum effective slope within 140m of the development area is >5 to 10° to the west.

#### **4.4 Significant environmental feature**

##### **4.4.1 Riparian corridors**

None identified within 140m of the proposed subdivision area.

##### **4.4.2 State Environmental Planning Policy (Coastal Management) 2018**

None identified within 140m of the proposed subdivision area.

##### **4.4.3 State Environmental Planning Policy (Koala Habitat Protection) 2021**

No koalas are recorded within 500m of the proposed subdivision according to a search of the NSW Bionet database (13 October 2023).

##### **4.4.4 Areas of geological interest**

None identified within 140m of the proposed subdivision area.

##### **4.4.5 Environmental protection zones or steep lands (>18°)**

None identified within 140m of the proposed subdivision area.

##### **4.4.6 Land slip or flood prone areas**

None identified within 140m of the proposed subdivision area.

##### **4.4.7 National parks estate or various other reserves**

None identified within 140m of the proposed subdivision area.

#### **4.5 Threatened species, populations, endangered ecological communities and critical habitat**

A preliminary flora and fauna assessment has been undertaken of the proposed development area and is reported separately (Envirowest Consulting report R16134ff).

Vegetation management will change at the development area following the removal of cultivated grassland and introduction of landscaped areas. No impact on threatened species, populations, endangered ecological communities or critical habitat will occur from the development. Threatened species, populations, endangered ecological communities or critical habitat are not constraints to development.

#### **4.6 Aboriginal heritage**

The owner was not aware of any details of Aboriginal heritage on the site. An AHIMS search of the site has not identified any mapped areas of aboriginal significance. Aboriginal heritage is not expected to be a constraint to development.

#### **4.7 Bushfire assessment**

##### **4.7.1 Asset protection zones**

A bushfire hazard exists to the north, west and south from the development area. The predominant vegetation formation to the west is woodland and has an effective slope of >5 to 10°. The site has an FFDI rating of 80. A 17m asset protection zone (APZ) is required to the west on Lots 2 and 11. It is recommended that the setback distance for buildings from the western boundary is 17m to allow for the required APZ.

The predominant vegetation formation to the south is woodland and has an effective slope of >0 to 5°. The site has an FFDI rating of 80. A 13m asset protection zone (APZ) is required to the south on Lots 11, 12, 13, 14 and 15. It is recommended that the setback distance for buildings on the lots from the southern boundary is 13m to allow for the required APZ.

The predominant vegetation formation to the north is woodland and has an effective slope of >0 to 5°. The site has an FFDI rating of 80. A 13m asset protection zone (APZ) is required to the north on Lots 2, 3, 4, 5, 6, 7, 8, 9 and 10. Ten metres of this APZ is provided by the existing north perimeter road, therefore a 3m setback distance is recommended from the north boundary for the lots to allow for the required APZ. The two existing industrial sheds on proposed Lots 2 and 3 have a setback distance consistent with the recommended setback distance.

Acceptable solution	Comment	Compliance (Yes/No/NA/TBD)
<ul style="list-style-type: none"> <li>An APZ is provided in accordance with Appendix 2 of PBP</li> </ul>	APZ are provided in the form of road reserves and building setbacks.	Yes
<ul style="list-style-type: none"> <li>The APZ is wholly within the boundaries of the development site.</li> </ul>	APZ are available within the development area. APZ for individual lots will be a combination of on-lot in the form of building setbacks and off-lot in the form of road reserves.	Yes
<ul style="list-style-type: none"> <li>APZs are managed in accordance with the requirements of Standards for Asset Protection Zones.</li> </ul>	The APZs on individual lots will be managed by future landowners.	NA
<ul style="list-style-type: none"> <li>The APZ is located on lands with a slope less than 18 degrees.</li> </ul>	Slopes greater than 18 degrees were not identified on the site.	Yes

TBD – To be designed

#### 4.7.2 Water supply

A reticulated water supply is proposed for the subdivision. The engineering design of the reticulated system has not been finalised.

Acceptable solution	Comment	Compliance (Yes/No/NA/TBD)
<b>Reticulated water supplies</b>		
<ul style="list-style-type: none"> <li>Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.</li> </ul>	The reticulated water system is recommended to be designed in accordance with PBP.	TBD
<ul style="list-style-type: none"> <li>Fire hydrant spacing, sizing and pressures comply with AS2419.1-2005.</li> </ul>	Fire hydrants are recommended to be designed in accordance with Council requirements.	TBD
<ul style="list-style-type: none"> <li>Hydrants are not located within any road carriageway.</li> </ul>	Fire hydrant locations will be outside the road carriageway.	TBD
<ul style="list-style-type: none"> <li>All above ground water and gas service pipes external to the building are metal.</li> </ul>	Above ground water and gas service pipes on individual lots are recommended to be managed by future landowners. Management should be in accordance with PBP.	NA
<ul style="list-style-type: none"> <li>The provisions of parking on public roads are met.</li> </ul>	Provision of parking on public roads will be in accordance with Section 4.7.4.	Yes
<b>Non-reticulated water supply areas</b>		
<ul style="list-style-type: none"> <li>The minimum dedicated water supply required for firefighting purposes for each occupied</li> </ul>	The development will be serviced by reticulated water.	NA

building excluding drenching systems is 10,000L/lot.	
<ul style="list-style-type: none"> <li>A suitable connection for firefighting purposes is made available and located within the IPA and away from the structure. A 65mm Storz outlet with a gate or ball valve is provided.</li> </ul>	The development will be serviced by NA reticulated water.
<ul style="list-style-type: none"> <li>Gate or Ball valve and pipes are adequate for water flow and are metal rather than plastic.</li> </ul>	The development will be serviced by NA reticulated water.
<ul style="list-style-type: none"> <li>Underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank. A hardened ground surface for truck access is supplied within 4m of the access hole.</li> </ul>	The development will be serviced by NA reticulated water.
<ul style="list-style-type: none"> <li>Above ground tanks are manufactured of concrete or metal and raised tanks have their stands protected. Plastic tanks are not used. Tanks on the hazard side of a building are provided with adequate shielding for the protection of fire fighters.</li> </ul>	The development will be serviced by NA reticulated water.
<ul style="list-style-type: none"> <li>All above ground water pipes external to the building are metal including and up to any taps. Pumps are shielded.</li> </ul>	The development will be serviced by NA reticulated water.
TBD – To be designed	

#### 4.7.3 Electrical and gas services

Underground electricity is proposed for the subdivision. No changes to the existing 132kV power transmission line are proposed.

Acceptable solution	Comment	Compliance (Yes/No/NA/TBD)
<b>Electricity services</b>		
<ul style="list-style-type: none"> <li>Where practicable, electricity transmission lines are underground.</li> </ul>	Electricity transmission lines installed as part of the development will be underground. The existing 132kV power transmission line will not be modified.	Yes
<ul style="list-style-type: none"> <li>Where overhead electrical transmission lines are proposed:               <ul style="list-style-type: none"> <li>Lines are installed with a short pole spacing (30m) unless crossing gullies, gorges or riparian areas</li> <li>No part of a tree is closer to a power line than the distance set out in accordance with the specifications in <i>ISSC3 Guidelines for Managing Vegetation near Power Lines</i></li> </ul> </li> </ul>	Underground electricity lines are proposed.	NA
<b>Gas services</b>		
<ul style="list-style-type: none"> <li>Reticulated or bottle gas is installed and maintained in accordance with AS1596 and the requirements of relevant authorities. Metal piping is to be used.</li> </ul>	Bottled gas is recommended to be installed and maintained in accordance with AS1596.	TBD
<ul style="list-style-type: none"> <li>All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side of the installation.</li> </ul>	Fixed gas cylinders on individual lots will be managed by future landowners. Management should be in accordance with PBP.	NA

<ul style="list-style-type: none"> <li>If gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2m away from any combustible material, so that they do not act as a catalyst to combustion. Connection to and from gas cylinders are metal.</li> <li>Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not used.</li> </ul>	<p>Gas cylinders on individual lots will be managed by future landowners. Management should be in accordance with PBP.</p> <p>Underground as supply lines are not proposed.</p>	<p>NA</p> <p>NA</p>
<b>Hazardous Materials</b>		
<ul style="list-style-type: none"> <li>Provide for the storage of hazardous materials away from the hazard wherever possible.</li> </ul>	<p>Hazardous materials on individual lots will be managed by future landowners. Hazardous materials should be stored appropriately and away from the hazard in a designated storage area as determined by the Australian Standard that relates to the class of dangerous goods. Vegetation should not grow near chemical stores and hazardous material inventory should be kept to minimum necessary levels with regular chemical waste removal services.</p>	<p>TBD</p>

TBD – To be designed

#### 4.7.4 Public roads

The internal access road will be two lane with a dead end less than 200m in length. The engineering design of the roads has not been finalised but is recommended to be in accordance with *Planning for Bushfire Protection*.

Acceptable solution	Comment	Compliance (Yes/No/NA/TBD)
<ul style="list-style-type: none"> <li>Public roads are two-wheel drive, all weather roads</li> </ul>	<p>Public roads are recommended to be two-wheel drive, all weather roads and are sufficient to carry fully loaded firefighting vehicles and bridges and causeways are to clearly indicated load rating.</p>	<p>TBD</p>
<ul style="list-style-type: none"> <li>Urban perimeter roads are two way. Non-perimeter roads comply with Table 5.3 of PBP</li> </ul>	<p>The internal access road is a through road with no overhanging obstructions. Hydrants are recommended to be located clear of parking areas and parking is provided outside the carriageway width. A minimum 5.5m carriageway width kerb to kerb is recommended for non-perimeter roads.</p>	<p>TBD</p>
<ul style="list-style-type: none"> <li>The perimeter road is linked to the internal road system at an interval of less than 500m</li> </ul>	<p>The internal road system is linked at intervals less than 500m.</p>	<p>Yes</p>
<ul style="list-style-type: none"> <li>Traffic management devices are constructed to facilitate access by emergency services</li> </ul>	<p>Traffic management devices are recommended to be installed in accordance with Cabonne Council requirements.</p>	<p>TBD</p>
<ul style="list-style-type: none"> <li>Public roads have a cross fall not exceeding 3 degrees</li> </ul>	<p>Public roads are recommended to be designed with cross falls of less than 3 degrees.</p>	<p>TBD</p>
<ul style="list-style-type: none"> <li>All roads are through roads. Dead ends are not more than 200m in length, incorporate a minimum 12m outer radius turning circle, are clearly signposted as a dead end and direct traffic away from the hazard.</li> </ul>	<p>The internal access road is a through road with a dead-end located in the western section of the development. The dead-end is less than 200m in length with a 12m outer radius turning circle.</p>	<p>Yes</p>

<ul style="list-style-type: none"> <li>Curves of roads (other than perimeter roads) are a minimum inner radius of 6m and minimal in number.</li> </ul>	Public roads are recommended to be designed with a minimum inner radius of 6m.	TBD
<ul style="list-style-type: none"> <li>The minimum distance between inner and outer curves is 6m.</li> </ul>	Public roads are recommended to be designed to ensure the distance between inner and outer curves is greater than 6m.	TBD
<ul style="list-style-type: none"> <li>Maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards</li> </ul>	Grades of public roads are recommended to be in accordance with PBP.	TBD
<ul style="list-style-type: none"> <li>Minimum vertical clearance to a height of 4m above the road at all times.</li> </ul>	Vertical clearance above roads is recommended to be in accordance with PBP.	TBD
<ul style="list-style-type: none"> <li>The capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles. Bridges clearly indicate load rating.</li> </ul>	Road surfaces are recommended to be designed to carry firefighting trucks weighing 15 tonnes.	TBD
<ul style="list-style-type: none"> <li>Public roads greater than 6.5m wide to locate hydrants outside of parking reserves to ensure accessibility to reticulated water for fire suppression.</li> </ul>	Location of fire hydrants are recommended to be in accordance with PBP.	TBD
<ul style="list-style-type: none"> <li>Public roads between 6.5m and 8m wide are No Parking on one side with the services (hydrants) located on this side.</li> </ul>	The main access road will be 12m wide. The alternative access road has not been designed and is recommended to adhere to requirements for no parking on the side where hydrants are proposed to be located.	TBD
<ul style="list-style-type: none"> <li>Public roads up to 6.5m wide provide parking within parking bays and locate services outside of the parking bays to ensure accessibility to reticulated water for fire suppression.</li> </ul>	The main access road will be 12m wide.	NA
<ul style="list-style-type: none"> <li>One way only public access roads are no less than 3.5m wide and provide parking within parking bays and located services outside the parking bays to ensure accessibility to reticulated water for fire suppression.</li> </ul>	One way only public access roads are recommended to be designed in accordance with PBP.	TBD
<ul style="list-style-type: none"> <li>Parking bays are a minimum of 2.6m wide from kerb edge to road pavement. No services or hydrants are located within the parking bays.</li> </ul>	Parking bays are recommended to be designed in accordance with PBP.	TBD
<ul style="list-style-type: none"> <li>Public roads directly interfacing the bush fire hazard vegetation provide roll top kerbing to the hazard side of the road.</li> </ul>	Bushfire hazard vegetation does not directly interface with roads.	NA

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TBD – To be designed

#### 4.7.5 Fire Trails

No fire trails are proposed as part of the development.

#### 4.7.6 Property access

Property access roads will be less than 200m in length and an alternative access will not be required. Management of other requirements for property access roads will be undertaken by future lot owners.

Acceptable solution	Comment	Compliance (Yes/No/NA/TBD)
<ul style="list-style-type: none"> <li>At least one alternative property access road is provided for individual buildings (or groups of buildings) that are located more than 200m from a public through road.</li> </ul>	All building envelopes are less than 200m from a public through road and alternative access is not required.	Yes
<ul style="list-style-type: none"> <li>Bridges clearly indicate load rating and pavements and bridges are capable of carrying a load of 15 tonnes.</li> </ul>	Construction of bridges and roads on individual lots will be managed by future landowners. Management should be in accordance with PBP.	TBD
<ul style="list-style-type: none"> <li>Roads do not traverse a wetland or other land potentially subject to periodic inundation.</li> </ul>	Wetlands or land subject to periodic inundation was not identified on the site.	NA
<ul style="list-style-type: none"> <li>A minimum carriageway width of 4m for rural-residential areas, rural landholdings or urban areas with a distance of greater than 70m from the nearest hydrant point to the most external part of a proposed building.</li> </ul>	Construction of roads on individual lots will be managed by future landowners. Management should be in accordance with PBP.	NA
<ul style="list-style-type: none"> <li>In forest, woodland and heath situations, rural property access roads have passing bays every 200m.</li> </ul>	Access roads are generally located in grasslands and less than 200m in length.	NA
<ul style="list-style-type: none"> <li>A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches.</li> </ul>	Vertical clearance will be managed by future landowners. Management should be in accordance with PBP.	NA
<ul style="list-style-type: none"> <li>Internal roads for rural properties provide a loop road around any dwelling or incorporate a turning circle with a minimum 12m outer radius.</li> </ul>	The development is industrial.	NA
<ul style="list-style-type: none"> <li>The minimum distance between inner and outer curves is 6m.</li> </ul>	Construction of roads on individual lots will be managed by future landowners. Management should be in accordance with PBP.	NA
<ul style="list-style-type: none"> <li>The cross fall is not more than 10 degrees.</li> </ul>	Construction of roads on individual lots will be managed by future landowners. Management should be in accordance with PBP.	NA
<ul style="list-style-type: none"> <li>Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.</li> </ul>	Construction of roads on individual lots will be managed by future landowners. Management should be in accordance with PBP.	NA
<ul style="list-style-type: none"> <li>Access to a development comprising more than three dwellings have formalised access by dedication of a road and not by right of way.</li> </ul>	The development is industrial. Each lot will have a unique access. Future landowners proposing to construct more than three buildings will need to manage access in accordance with PBP.	NA

TBD – To be designed

#### 4.7.7 Maintenance plans and emergency procedures

Future landowners will require maintenance plans and emergency procedures in accordance with Planning for Bushfire Protection (NSW Rural Fire Service 2006).

#### 4.7.8 Construction standards

AS3959-2009 *Construction of buildings in bushfire-prone areas* describes the bushfire attack level for a building exposed to a bushfire hazard. The bushfire attack level is based on vegetation formation, distance to hazard, effective slope and FDI rating.

Bushfire attack levels for buildings constructed on the site are expected to range from 12.5 to 40 following implementation of recommended asset protection zones. A bushfire management plan including

construction standards in accordance with Planning for Bushfire Protection (2006) should be undertaken on a site-specific basis prior to buildings construction.

## **5. Conclusions**

The current design of the development complies with the acceptable solutions outlined in *Planning for Bushfire Protection* (2019). The engineering design of roads and services have not been finalised but it is recommended the design comply with Planning for Bushfire Protection. Some of the acceptable solutions are not relevant at this stage but will be relevant once the individual lots are purchased.

A bushfire management plan (including an emergency and evacuation plan) in accordance with Planning for Bushfire Protection (2006) should be undertaken on a site-specific basis prior to construction.

## 5. References

AS3959 *Construction of buildings in bushfire-prone areas*

AUSLIG (1990) *Atlas of Australian Resources, Third Series, Volume 6, Vegetation* (Commonwealth of Australia)

NSW Rural Fire Service (2019) *Planning for Bushfire Protection* (Planning & Environment Services: Sydney NSW)

OEH (2023) *OEH Bionet database* (New South Wales Office of Environment and Heritage)

OEH (2019) eSPADE v2.0 accessed 4 October 2023  
(<https://www.environment.nsw.gov.au/eSpadeWebApp#>)

## **6. Report limitations and intellectual property**

This report has been prepared for the use of the client to achieve the objectives given the clients requirements. The Australian Standard 3959, *Construction of buildings in bushfire prone areas*, and the NSW Rural Fire Service, *Planning for bushfire protection* (2019) have been used as guidelines in this report. Where limitations or uncertainties are known, they are identified in the report. No liability can be accepted for failure to identify conditions or issues which arise in the future and which could not reasonably have been predicted using the scope of the investigation and the information obtained.

This report including data contained, its findings and conclusions remain the intellectual property of Envirowest Consulting Pty Ltd. A licence to use the report for the specific purpose identified is granted after full payment for the services involved in preparation of the report. This report should not be used by persons or for purposes other than those stated, and not reproduced without the permission of Envirowest Consulting Pty Ltd.

## **Figures**

**Figure 1.** Site locality map

**Figure 2.** Proposed subdivision plan

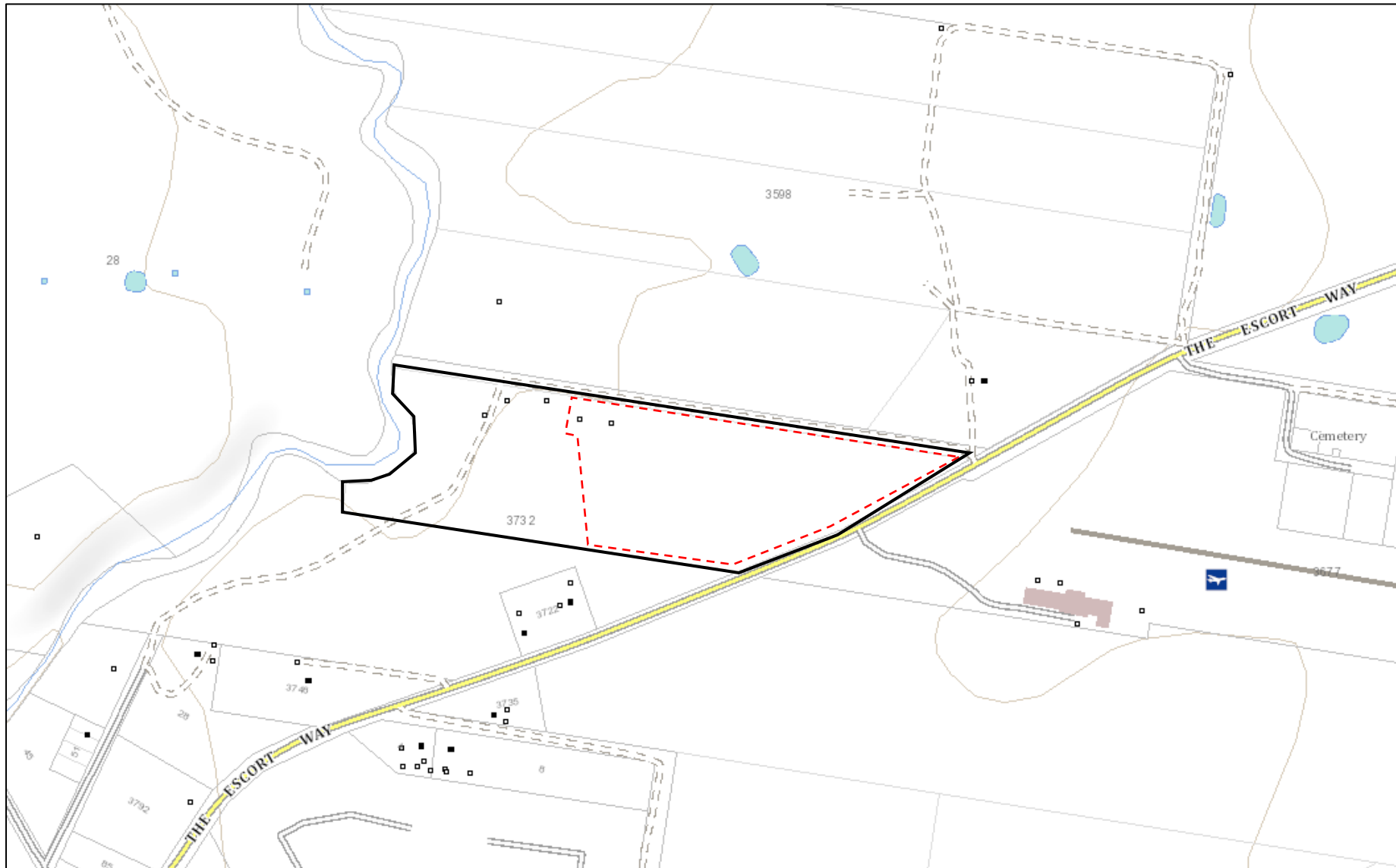
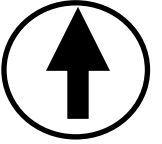
**Figure 3.** Aerial photograph and proposed subdivision plan

**Figure 4.** Vegetation classification

**Figure 5.** Effective slope

**Figure 6.** Asset protection zones

**Figure 7.** Ground photographs of the site



### Legend

- Site under assessment
- Lot boundary

Approximate Scale 1:9,000  
0 90 180 360m

Figure 1: Site locality map

3660 The Escort Way, Cudal NSW

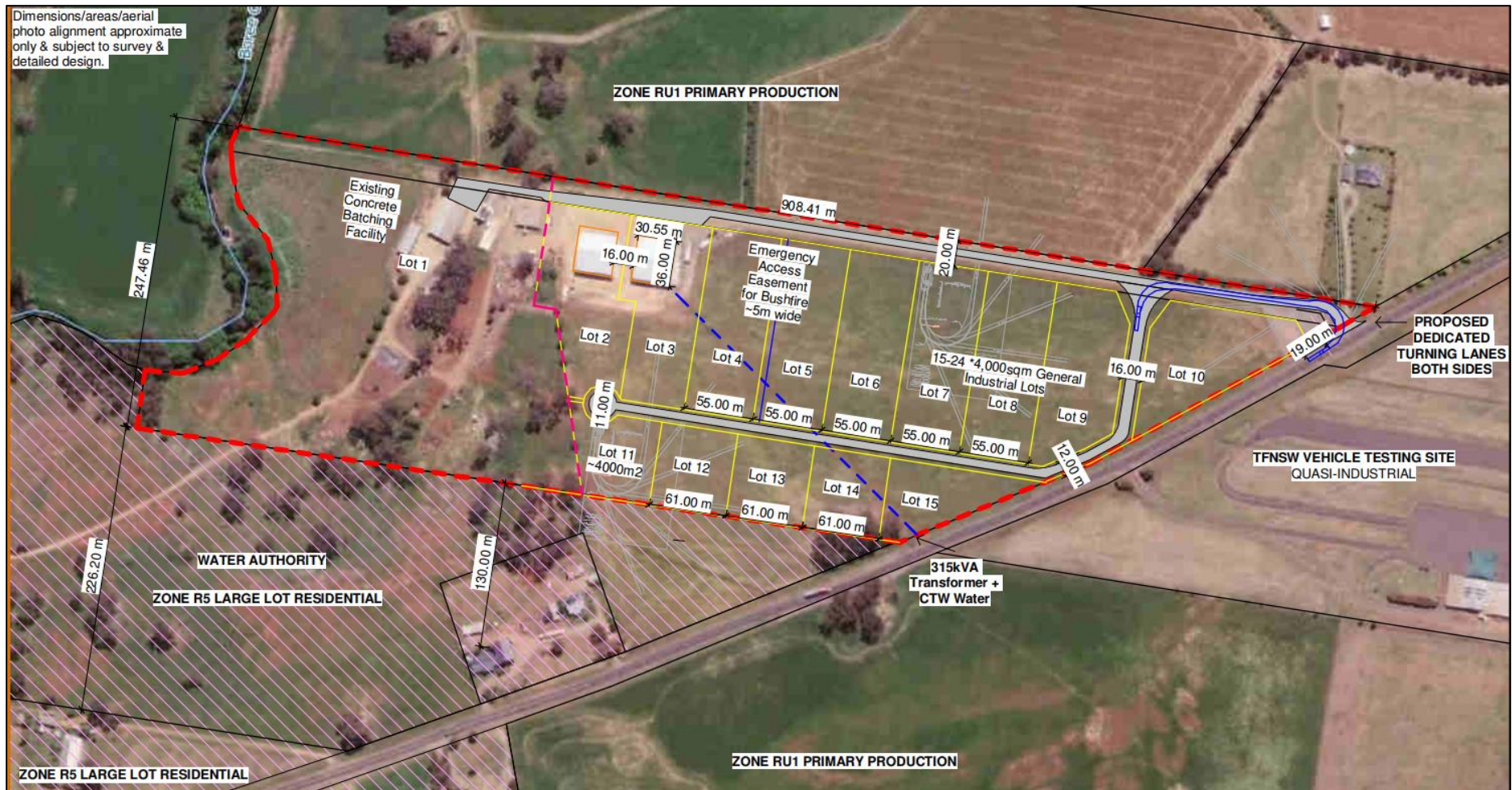
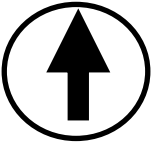


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Date: 13/10/2023



**Figure 2:** Subdivision plan

3660 The Escort Way, Cudal NSW

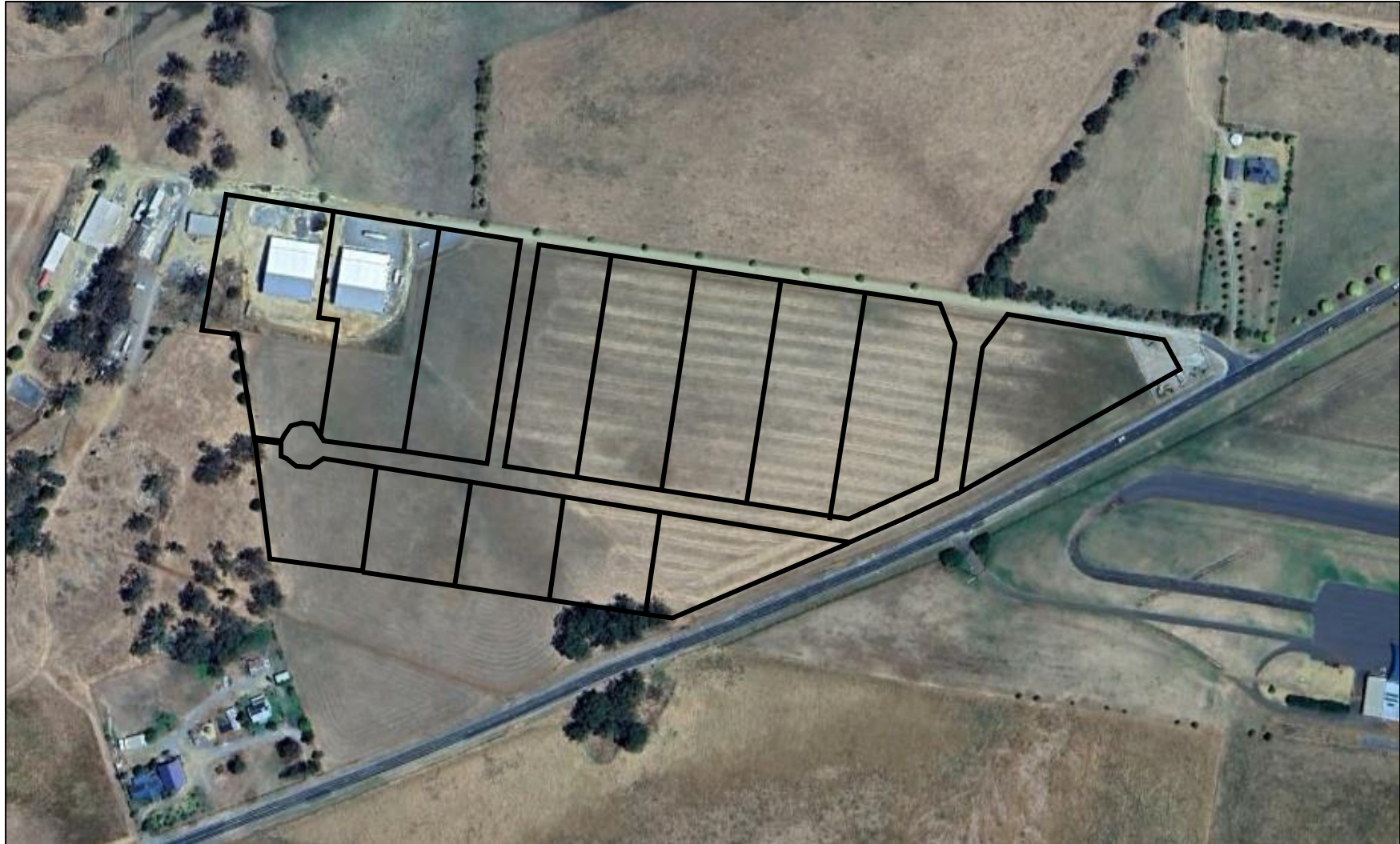
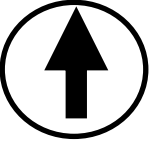


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Date: -



### Legend

— Proposed lot boundary

Approximate Scale 1:3,500  
0 35 70 140m

**Figure 3:** Aerial photograph and subdivision plan

3660 The Escort Way, Cudal NSW

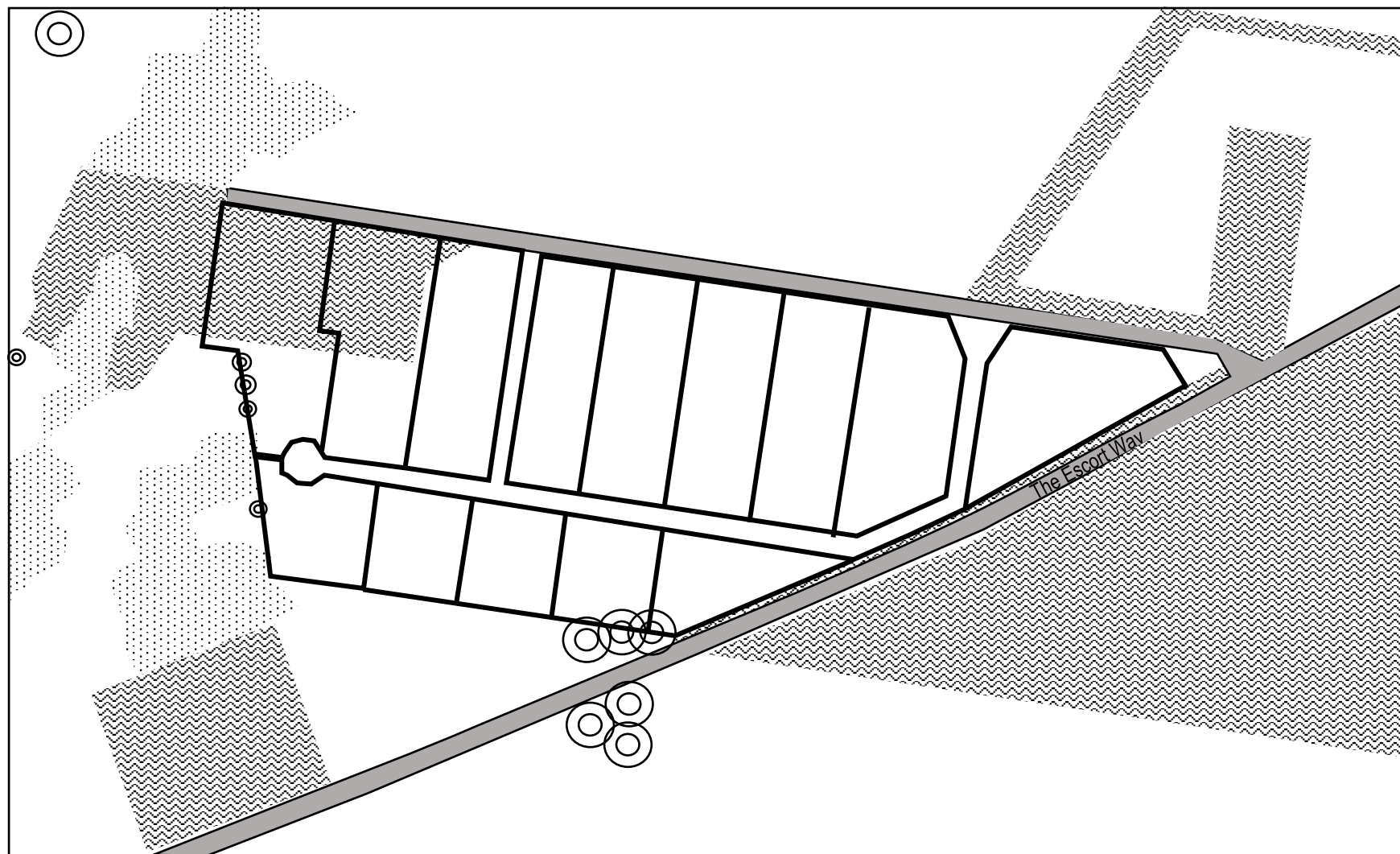


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Date: 13/10/2023



# **Legend**

- Proposed lot boundary
- ▨ Woodland
- Grassland
- ▤ Managed land
- ▬ Road
- Tree

Approximate Scale 1:3,500



**Figure 4: Vegetation classification**

3660 The Escort Way, Cudal NSW

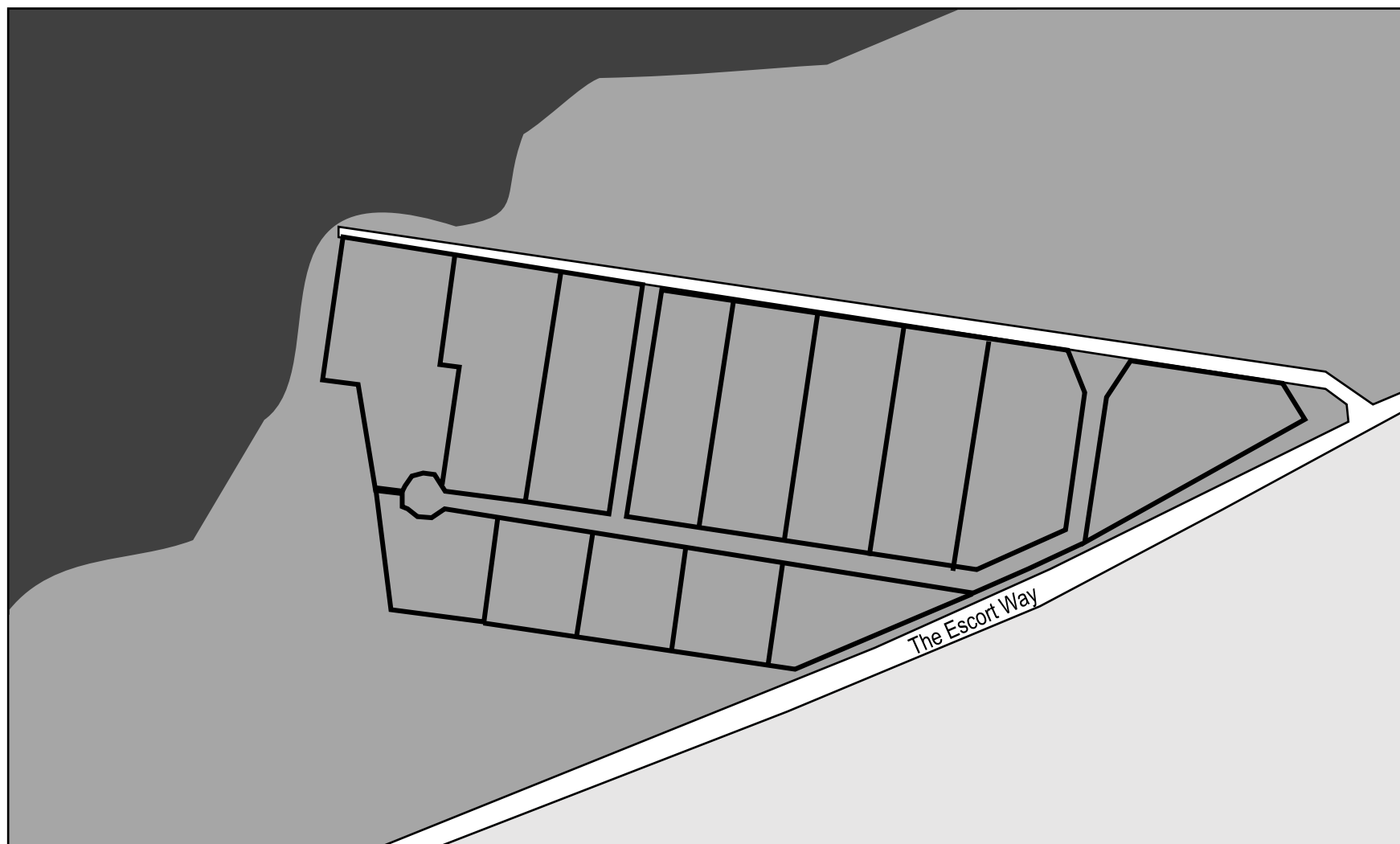


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Date: 16/10/2023



**Legend**

- Proposed lot boundary
- Upslope and flat
- Road
- >0 to 5°
- >5 to 10°

Approximate Scale 1:3,500



**Figure 5: Effective slope**

3660 The Escort Way, Cudal NSW

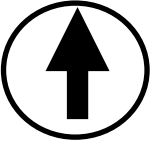
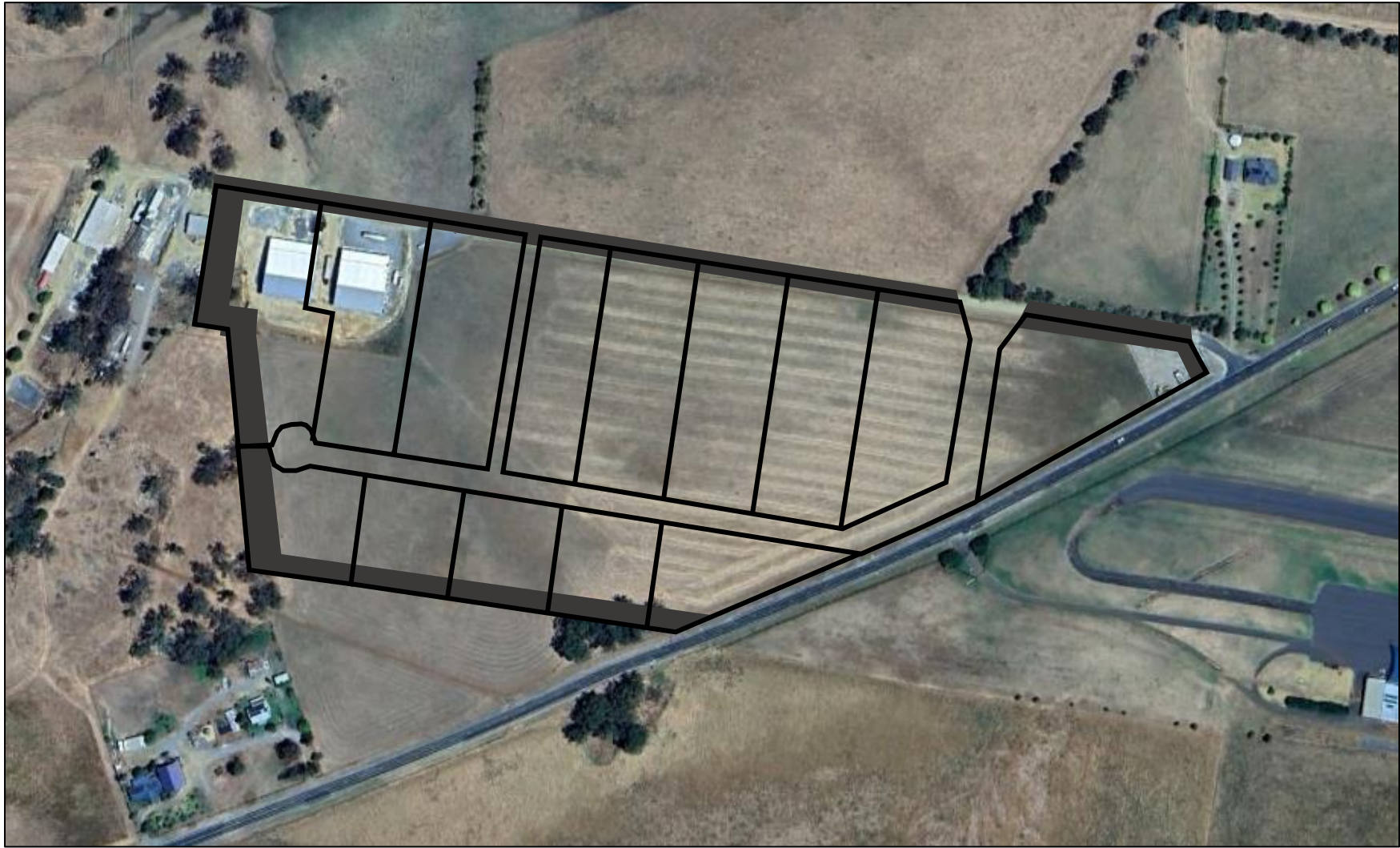


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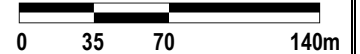
Date: 16/10/2023



# **Legend**

- Proposed lot boundary
- Asset Protection Zone

Approximate Scale 1:3,500



**Figure 6: Asset protection zones**

3660 The Escort Way, Cudal NSW



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Drawn by: EH

Date: 16/10/2023

**Figure 7.** Ground photographs of the site



Northwest from the subdivision



South from the subdivision



East from the subdivision



West from the subdivision