

**Planning Proposal**  
**Rezoning of Lake Macquarie Memorial Park at 405 Cessnock Road,**  
**Ryhope**  
**Draft Amendment No. XX to Lake Macquarie Local Environmental Plan**  
**2014**

Pre-Gateway version

<b>Local Government Area:</b>	Lake Macquarie City Council (LMCC)
<b>Name of Draft LEP:</b>	Lake Macquarie Local Environmental Plan (LMLEP) 2014 (Draft Amendment No. XX)
<b>Subject Land:</b>	405 Cessnock Road Ryhope (Lot 1 DP 833614)
<b>Land Owner:</b>	InvoCare Pty Ltd
<b>Applicant:</b>	InvoCare c/o KDC Pty Ltd
<b>Folder Number:</b>	RZ/6/2019
<b>Date:</b>	18 February 2020
<b>Author:</b>	Adam Kennedy - Strategic Landuse Planner

**Figures:**

Figure No	Details
1	Native vegetation mapping (2019)
2	Archaeological analysis map (Source: Umwelt)

**Maps:**

Map No	Details
1	Locality
2	Aerial Photograph
3	Current Land Use Zones
4	Current Height of Building
5	Current Minimum Lot Size
6	Proposed Land Use Zones
7	Proposed Height of Building
8	Proposed Minimum Lot Size

**Other Attachments:**

<b>Attachment No.</b>	<b>Details</b>
1	Ecological and Bushfire Assessment prepared by Anderson Environmental and Planning
2	Archaeological Due Diligence Report prepared by Umwelt Pty Ltd
3	Traffic Impact Assessment prepared by Intersect Traffic Pty Ltd
4	Hydro-Geology Study for Proposed Lawn Cemetery – Ryhope (1993) prepared by Coffey Partners International
5	Initial Contamination Evaluation Checklist

## Part 1 – OBJECTIVES OR INTENDED OUTCOMES

The objective of the Planning Proposal is to amend *Lake Macquarie Local Environmental Plan 2014* (LMLEP 2014) to rezone part of 405 Cessnock Road Ryhope from E3 Environmental Management to RU2 Rural Landscape to ensure there is adequate supply of land for cemetery uses at the Lake Macquarie Memorial Park into the long-term.

## Part 2 – EXPLANATION OF PROVISIONS

The proposed objective will be achieved by amending the LMLEP 2014 by:

Amendment Applies to	Explanation of provision
Land Use Zone Map	Rezone 405 Cessnock Road, Ryhope from E3 Environmental Management to RU2 Rural Landscape.
Lot Size Map	Amend the Lot Size Map from 40ha to 20ha applying to the site.
Height of Building Map	Amend the Height of Building Map from 5.5m to 8.5m applying to the site.

## Part 3 – JUSTIFICATION

### Section A – Need for the Planning Proposal

#### 1. *Is the planning proposal a result of any strategic study or report?*

The Planning Proposal is not the result of a strategic study or report.

The purpose of the Planning Proposal is to ensure there is adequate supply of land for cemetery uses at the Lake Macquarie Memorial Park into the long-term and the continued operation of the cemetery.

405 Cessnock Road, Ryhope ('the subject property') is currently a split zone of E3 Environmental Management and RU2 Rural Landscape under LMLEP 2014 and has been occupied by Invocare (known as Lake Macquarie Memorial Park) since 1991.

Although the uses of cemetery, crematorium and mortuary are permissible with consent within the western portion of RU2 Rural Landscape zoned land, these uses are prohibited within the eastern portion of E3 Environmental Management zoned land.

The Planning Proposal will rezone the eastern portion of the property to RU2 Rural Landscape zone, while retaining the E3 Environmental Management zone to protect remnant native vegetation to the southern boundary.

#### 2. *Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?*

In order to achieve the intended outcome, the following options were considered:

##### Option 1 – Develop a new cemetery elsewhere within the City

A review of developable land found limitations for suitable alternative site locations due to cemetery and/or crematorium uses only being permissible in industrial or rural zones. A suitable site would also require the provision of existing road and stormwater infrastructure, while mitigating potential environmental and social impacts such as visual amenity, vegetation clearing, stormwater, potential contamination and operational maintenance into perpetuity.

Additionally, Invocare operates several memorial parks within the State, with two in the Greater Newcastle area being the Newcastle Memorial Park and Lake Macquarie Memorial Park (the subject property). The desire for the proponent to develop and operate another

Memorial Park in such close proximity to existing operations would not be a long-term feasible outcome.

It is considered that the subject property is an appropriate strategic location for the proposed rezoning as it is:

- Located on a site with adequate land to expand existing cemetery based services and facilities;
- Serviced by existing infrastructure with close connections to major road networks; and
- Existing rural uses undertaken on the property reducing environmental impacts.

#### Option 2- Allow additional permitted uses

Allowing additional permissible uses for a cemetery were considered for the eastern portion of E3 Environmental Management zoned land. This option would allow uses to be permissible with consent across the entirety of the property. However, it was determined that the objectives of the E3 Environmental Management zone may limit the range and scale of development on the eastern portion of the property. Furthermore, the existing ecological and aesthetic values of the cleared and pastured land were considered to be more reflective of a rural landscape character defined under the RU2 Rural Landscape zone.

#### Option 3 – Rezone all the property to RU2 Rural Landscape

This option was considered within a preliminary planning proposal prepared by KDC Pty Ltd. The property would have been rezoned entirely to RU2 Rural Landscape to enable a consistent land zone across the site and to allow cemetery and crematorium uses. Supporting studies also broadly recommended a RU2 Rural Landscape zone at Attachment 1-3.

Council's Rezoning Advisory Panel raised concern with applying the RU2 Rural Landscape zone to land with mature remnant native vegetation strips to the southern boundary. It was highlighted that this native vegetation contained hollow bearing trees that fostered habitat for a number of threatened species. Also, the native vegetation contributed to the interface with the Sugarloaf State Conservation Area to the south and more broadly to the City's green grid network. Therefore, due to these ecological values, it was determined to retain the E3 Environmental Management Zone on part of the subject land.

Retention of the E3 Environmental Management zone would also be consistent with the Ecological and Bushfire Assessment Report's (Attachment 1) recommendation to retain good quality vegetation on the southern and eastern boundaries of the land to allow for both beneficial environmental conservation and visual amenity outcomes.

## **Section B – Relationship to Strategic Planning Framework**

### **3. *Is the planning proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft strategies)?***

#### Hunter Regional Plan (HRP) 2036

The HRP sets out a vision for the Hunter Region to connect communities through a range of housing choices, employment, amenities and services. The HRP includes overarching directions, goals and actions, as well as specific priorities for each Local Government Area.

The Planning Proposal is consistent with the following directions and actions:

- Direction 26: Deliver infrastructure to support growth and communities
  - 26.2 Enable the delivery of health facilities, education, emergency services, energy production and supply, water and waste water, waste disposal areas, cemeteries and crematoria, in partnership with infrastructure providers.

The Planning Proposal aims to expand an existing cemetery known as Lake Macquarie Memorial Park. This will equate to an increase in cemetery supply up to a 100-year

timeframe. This increase in supply will support the needs of a growing, ageing and diversifying population expanding an important health facility and infrastructure.

#### Cemeteries and Crematoria NSW Strategic Plan 2015-2020

Cemeteries and Crematoria NSW (CCNSW) released its *Strategic Plan 2015-2020* and subsequent *Metropolitan Sydney Cemetery Capacity Report (2017)*, which identified the urgent need for future cemetery and crematorium land to meet projected demand of 2.2 million deaths in the Sydney, Hunter and Illawarra regions by 2056. The reports predict that Sydney's cemetery land would be exhausted by 2051, while service demand in the Hunter in 2056 would be 20% for burial land and 80% for cremation.

The Planning Proposal is consistent with this Strategy as it will cater for regional supply, while achieving the Strategic Plan's prioritisation of undertaking land use planning to facilitate land availability to allow new cemeteries and crematoria.

#### Greater Newcastle Metropolitan Plan (GNMP) 2036

The GNMP sets goals and strategies to deliver on the vision of the Hunter Regional Plan 2036 for the Greater Newcastle Metropolitan Area. Although the GNMP does not specifically address provision for cemeteries or crematorium development, the Planning Proposal is broadly consistent with the following outcomes and strategies of the GNMP.

- Outcome 1 – Strategy 4: Growth health precincts and connect the health network; and
- Outcome 2 – Strategy 13: Protect rural amenity outside urban areas.

The Planning Proposal will increase cemetery land supply within 7km of health facilities at the Toronto economic centre. Additionally, the Planning Proposal will maintain the rural character of the locality by continuing the Lake Macquarie Memorial Park aesthetic which incorporates and reflects the existing vernacular rural landscape.

#### **4. Is the planning proposal consistent with a council's local strategy or other local strategic plan?**

##### Lake Macquarie City Community Strategic Plan 2017-2027

The Lake Macquarie City Community Strategic Plan 2017-2027 has been developed with the people of Lake Macquarie outlining the vision and values of the community and providing clear strategies to achieve this.

The Planning Proposal is consistent with the vision and values as it ensures the community has access to adaptable and inclusive community and health services, while natural and rural environments are protected and enhanced.

##### Draft Lake Macquarie Local Strategic Planning Statement

The draft Lake Macquarie Local Strategic Planning Statement aims to guide future development within the City and complements the aspirations within the Imagine Lake Mac Strategy. It sets seven planning priorities that articulate the special characteristics of the City supported by strategies and action to deliver these priorities.

The most relevant of these planning priorities which align with the Planning Proposal include:

- Planning priority 3: A city of prosperity – that attracts investment, creates jobs, and fosters innovation;
- Planning priority 6: A city with a vast natural environment – That is valued, protected and enhanced; and
- Planning priority 7: A city of resilience – where the people and places are responsive and proactive to change.

The Planning Proposal is consistent with these planning priorities as the future expansion of the Lake Macquarie Memorial Park will allow for the continued long-term operation of the cemetery within the City, which will create localised jobs. The Planning Proposal will also protect the existing rural and environmental amenity and respond to an ageing and diversifying population which will equate to changes in consumer choice within the industry.

Imagine Lake Mac Strategy

Imagine Lake Mac contains a number of aspirations for the City to guide future development which reflect the planning priorities within the draft Lake Macquarie Local Strategic Planning Statement. The most relevant of these aspirations, which align with the Planning Proposal include “A city of prosperity – that attracts investment, creates jobs, and fosters innovation”, “A city with a vast natural environment - that is valued, protected and enhanced”, and “A city of resilience – where the people and places are responsive and proactive to change”.

The Planning Proposal will allow for a minor increase in short- and long-term employment during the construction and operational phase, provide long-term cemetery supply, protect and enhance rural amenity, and retain environmental zoning to conserve native vegetation.

**5. Is the planning proposal consistent with applicable State Environmental Planning Policies?**

The Planning Proposal is consistent with the following relevant State Environmental Planning Policies (SEPPs) outlined in Table 1 below.

**Table 1: Assessment of the Planning Proposal against relevant SEPPs**

SEPP	Relevance	Implications
State Environmental Planning Policy No. 19 – Bushland in Urban Areas	The aim of this policy is to protect and preserve bushland within urban areas.	<p>The proposal is <b>consistent</b> with this SEPP.</p> <p>The Planning Proposal seeks to conserve areas containing native vegetation by retaining the E3 Environmental Management zone on identified remnant native vegetation to the southern boundary of the property.</p> <p>This retention will also be consistent with the recommendations of the Ecological and Bushfire Assessment Report at Attachment 1.</p> <p>Additionally, any future development of the site to facilitate a cemetery use will require further ecological assessment to determine the extent (if any) of native vegetation to be removed or altered.</p>
State Environmental Planning Policy No. 55 – Remediation of Land	The aim of this policy is to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.	<p>The Planning Proposal is generally <b>consistent</b> with this SEPP.</p> <p>Pursuant to Clause 6(4)(a), the properties were not identified as contaminated land within Council mapping. Nevertheless, an adjoining property not subject to this Planning Proposal 25 Cozzie Lane, Ryhope was identified as contaminated land containing hydrocarbons and heavy metals. A Remediation Action Plan is approved for the site with remediation works ongoing (Council ref: D08260848).</p> <p>Additionally, as per Clause 6(4)(b), the property subject to this rezoning (405 Cessnock Road, Ryhope) was identified as a class of land that may potentially cause contamination as it underwent decades of agricultural activities, specifically horse keeping. The likely impacts are considered negligible due to ongoing maintenance of the property by Invocare. Refer to Attachment 5 for an Initial Contamination Evaluation Checklist.</p> <p>Any future development application will need to also consider potential contamination impacts from cemetery uses and be managed</p>

SEPP	Relevance	Implications
		accordingly into perpetuity.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008	The aim of this policy is to provide exempt and complying development codes that have State-wide application.	The Planning Proposal is <b>consistent</b> with the SEPP. The Planning Proposal will allow some exempt and complying development to be permissible within the rural zone. However, it is considered that any development will be minor, and be of an ancillary use to the Lake Macquarie Memorial Park.
State Environmental Planning Policy (Infrastructure) 2007	The aim of the policy is to facilitate the effective delivery of infrastructure.	The Planning Proposal is <b>consistent</b> with the SEPP. The surrounding area is well serviced by existing infrastructure, on-site sewage, water supply and drainage and will not adversely impact the delivery of infrastructure. The subject property is currently accessible from Cessnock Road a classified main road which is about 350m from the M1 Motorway. Therefore, consultation will occur with Transport for NSW (former Roads and Maritime Service).
State Environmental Planning Policy (Koala Habitat Protection) 2019	This policy aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas.	The Planning Proposal is generally <b>consistent</b> with this SEPP. The Planning Proposal may result in future remove of a portion of remnant vegetation within the retain E3 Environmental Management zone to facilitate cemetery uses. The subject property is partially identified within the 'Koala Development Application Map'. Additionally, the Ecological and Bushfire Assessment report's (at Attachment 1) native vegetation species list identified the following feeding trees under Schedule 2 of the SEPP: <ul style="list-style-type: none"> <li>• Forest Oak;</li> <li>• Spotted Gum;</li> <li>• Narrow-leaved Ironbark;</li> <li>• Sydney Peppermint; and</li> <li>• Broad-leaved White Mahogany.</li> </ul> The report did not mention nor identify the presence of Koalas on the property. Although, feeding trees are identified on property, it is considered that the rezoning will have minimal impact due to the retention of the E3 Environmental Management zone on remnant vegetation. Further, any future development that disturbs the E3 Environmental Management zone land will require additional ecological assessment.
State Environmental Planning Policy (Primary Production and Rural Development)	The aim of this policy is to facilitate the orderly economic use and development of lands for primary production.	The Planning Proposal is <b>consistent</b> with the SEPP. It will allow orderly use of rural land such as development and maintenance of small-scale artificial waterbodies which are currently present on the property.

SEPP	Relevance	Implications
2019		

**6. Is the planning proposal consistent with applicable Ministerial Directions (s.9.1(2) directions)?**

An assessment of the Planning Proposal and its consistency against the applicable Ministerial Directions is provided at Table 2 below.

**Table 2: Consistency with applicable Section 9.1(2) Ministerial Directions**

Ministerial Direction	Objective/s	Consistency / Comment
1.1 Business and Industrial Zones	(a) Encourage employment growth in suitable locations, (b) Protect employment land in business and industrial zones, and (c) Support the viability of identified strategic centres.	<b>Not applicable.</b>
1.2 Rural Zones	Protect the agricultural production value of rural land.	The Planning Proposal is generally <b>consistent</b> with the objectives of this direction. The Planning Proposal will rezone and increase the overall area of land to RU2 Rural Landscape at 405 Cessnock Road, Ryhope.
1.3 Mining, Petroleum Production and Extractive Industries	Ensure that the future extraction of State or regionally significant reserves of coal, other minerals, petroleum and extractive materials are not compromised by inappropriate development.	<b>Not applicable.</b>
1.4 Oyster Aquaculture	To consider and protect priority Oyster Aquaculture areas and oyster aquaculture when preparing a planning proposal	<b>Not applicable.</b>

Ministerial Direction	Objective/s	Consistency / Comment
2.1 Environment Protection Zones	Protect and conserve environmentally sensitive areas.	<p>This Planning Proposal is <b>inconsistent</b> with this direction. The Planning Proposal will reduce the E3 Environmental Management zoned land that applies to the subject property, however the Planning Proposal is considered to be a minor inconsistency.</p> <p>The remnant native vegetation located to the southern boundary of the property will retain the E3 Environmental Management zone to ensure ongoing protection of ecological values. This reflects the recommendations within the Ecological and Bushfire Assessment Report.</p> <p>Any future development application would also require further environmental assessment.</p> <p>The Director-General's concurrence that the inconsistency is of minor significance is requested.</p>
2.2 Coastal Protection	Implement the principles in the NSW Coastal Policy.	<b>Not applicable.</b>
2.3 Heritage Conservation	Conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance.	<p>The Planning Proposal will be <b>consistent</b> with the objectives of this direction. The subject properties are identified as containing Sensitive Aboriginal Landscape mapping, with the Archaeological Due Diligence Report (at Attachment 2) identifying 2 archaeological sites and an area of low-moderate archaeological potential.</p> <p>The locations of these areas are likely not to be impacted by future uses of a cemetery, with any future development requiring further assessment.</p>
2.4 Recreation Vehicle Areas	Protect sensitive land or land with significant conservation values from adverse impacts from recreation vehicles.	<b>Not applicable.</b>
3.1 Residential Zones	<p>(a) Encourage a variety and choice of housing types to provide for existing and future housing needs,</p> <p>(b) Make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and</p> <p>(c) Minimise the impact of residential development on the environment and resource lands.</p>	<b>Not applicable.</b>

Ministerial Direction	Objective/s	Consistency / Comment
3.2 Caravan Parks and Manufactured Home Estates	(a) Provide for a variety of housing types, and (b) Provide opportunities for caravan parks and manufactured home estates.	<b>Not applicable.</b>
3.3 Home Occupations	Encourage the carrying out of low-impact small businesses in dwelling houses.	<b>Not applicable.</b>
3.4 Integrating Land Use and Transport	<p>Ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve the following planning objectives:</p> <p>(a) improving access to housing, jobs and services by walking, cycling and public transport, and</p> <p>(b) increasing the choice of available transport and reducing dependence on cars, and</p> <p>(c) reducing travel demand including the number of trips generated by development and the distances travelled, especially by car, and</p> <p>(d) supporting the efficient and viable operation of public transport services, and</p> <p>(e) providing for the efficient movement of freight.</p>	<p>The Planning Proposal will be <b>consistent</b> with the objectives of the direction.</p> <p>Although the subject property is within a rural area, it is well serviced by existing infrastructure. The property is primarily accessible by vehicle from Cessnock Road and contains adequate car parking. The Traffic Impact Assessment (at Attachment 3) conclude that the proposal would have negligible impact on existing road network.</p>

Ministerial Direction	Objective/s	Consistency / Comment
3.5 Development Near Regulated Airports and Defence Airfields	(a) Ensure the effective and safe operation of aerodromes, and (b) Ensure that their operation is not compromised by development that constitutes an obstruction, hazard or potential hazard to aircraft flying in the vicinity, and (c) Ensure development for residential purposes or human occupation, if situated on land within the Australian Noise Exposure Forecast (ANEF) contours of between 20 and 25, incorporates appropriate mitigation measures so that the development is not adversely affected by aircraft noise.	<b>Not applicable.</b>
3.6 Shooting Ranges	(a) Maintain appropriate levels of public safety and amenity when rezoning land adjacent to an existing shooting range, (b) Reduce land use conflict arising between existing shooting ranges and rezoning of adjacent land, (c) Identify issues that must be addressed when giving consideration to rezoning land adjacent to an existing shooting range.	<b>Not applicable.</b>
4.1 Acid Sulfate Soils	Avoid significant adverse environmental impacts from the use of land that has a probability of containing acid sulfate soils.	<b>Not applicable.</b>
4.2 Mine Subsidence and Unstable Land	Prevent damage to life, property and the environment on land identified as unstable or potentially subject to mine subsidence.	The Planning Proposal is identified as being within the West Lake Mine Subsidence District. The Planning Proposal will be referred to the NSW Subsidence Advisory for comment.

Ministerial Direction	Objective/s	Consistency / Comment
4.3 Flood Prone Land	<p>(a) Ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the <i>Floodplain Development Manual 2005</i>, and</p> <p>(b) Ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.</p>	<b>Not applicable.</b>
4.4 Planning for Bushfire Protection	<p>(a) Protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and</p> <p>(b) Encourage sound management of bush fire prone areas.</p>	<p>The Planning Proposal is <b>inconsistent</b> with the objectives of this direction. The subject properties area is within bushfire prone land containing Vegetation Category 1,2,3 and buffer.</p> <p>An Ecological and Bushfire Assessment report (at Attachment 1) found that any future development would require mitigation measures in the form of Asset Protection Zones (APZs) and building construction standards. The APZs displayed within the Ecological and Bushfire Assessment report have been incorporated into the proposed RU2 Rural Landscape rezoning.</p> <p>The Planning Proposal with accompanying Ecological and Bushfire Assessment will be referred to the NSW RFS for comment.</p> <p>Nevertheless, any future development application may require an additional bushfire assessment report to address the specifics of the development.</p>
5.10 Implementation of Regional Plans	Give legal affect to the vision, land use strategy, goals, directions and actions contained in Regional Plans	The Planning Proposal is <b>consistent</b> with this direction. The Planning Proposal facilitates the delivery of Direction 26, Action 26.2 of the Hunter Regional Plan.
6.1 Approval and Referral Requirements	Ensure that LEP provisions encourage the efficient and appropriate assessment of development.	The proposal is <b>consistent</b> with the direction as it does not contain any provisions that require concurrence, or identify development as 'designated'.
6.2 Reserving Land for Public Purposes	<p>(a) Facilitate the provision of public services and facilities by reserving land for public purposes, and</p> <p>(b) Facilitate the removal of reservations of land for public purposes where the land is no longer required for acquisition.</p>	<b>Not applicable.</b>

Ministerial Direction	Objective/s	Consistency / Comment
6.3 Site Specific Provisions	Discourage unnecessarily restrictive site specific planning controls.	The direction is <b>consistent</b> with the direction (4)(c). The amendment will not impose additional development standards to those already contained within the LMLEP 2014.

**Section C – Environmental, Social and Economic Impact**

**7. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?**

The subject property is identified as containing native remnant vegetation to the southern boundary. The vegetation is not listed as having ‘Biodiversity Values’ under the Department of Planning, Industry and Environment’s Biodiversity Values Map. However, this native vegetation is identified as containing a 30f Freemans Peppermint Apple Bloodwood Forest profile in Council’s vegetation mapping (refer to Figure 1).



**Figure 1: Native vegetation mapping (2019)**

The Ecological and Bushfire Assessment Report also highlighted that this remnant native vegetation contained a number of hollow bearing trees that could potentially support habitat for a number of threatened fauna species that included:

- Glossy Black Cockatoo;
- Large Forest Owls (Masked, Powerful and Sooty);
- Little Lorikeet;
- Varied Sittella;
- Eastern and Little Bent-wing Bats; and
- Squirrel Glider.

The RAP advised that retaining the E3 Environmental Management zone on this remnant native vegetation would be a positive outcome, allowing ongoing conservation to the

ecological values of the native vegetation, while ensuring corridor connectivity is maintained with the Sugarloaf State Conservation Area to the south.

This outcome was consistent with the recommendation within the Ecological and Bushfire Assessment Report at Attachment 1. These recommendations included retaining the majority of quality vegetation on the southern and eastern boundaries to allow for environmental conservation while also maintaining visual amenity.

Potential impacts on the native vegetation may occur during future development of the property to facilitate cemetery uses, associated infrastructure and asset protection zones for bushfire mitigation.

Overall, it is considered that these will be minor impacts to ecological communities due to the following:

- Retention of the E3 Environmental Management zone on remnant vegetation;
- Future development applications will be required to provide further assessment to mitigate any potential impacts to the remnant vegetation; and
- The low impact concept design of the future expansion of the memorial park which emphasises the incorporation of environmental and rural amenity.

**8. Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?**

A summary of the environmental issues associated with this Planning Proposal is provided below.

Aboriginal heritage

The subject property is mapped as containing a Sensitive Aboriginal Landscape under LMLEP 2014. The accompanying Archaeological Due Diligence Report (Attachment 2) identified the property to contain 2 new archaeological sites and 1 area of low-moderate archaeological potential within the land proposed to be rezoned (refer Figure 2 below).



**Figure 2: Archaeological analysis map (Source: Umwelt)**

The Archaeological Due Diligence Report concluded that archaeological potential did not preclude the rezoning. It was recommended that any future development impact in the vicinity of area of low-moderate potential would require further assessment, while the recorded archaeological sites would require an Aboriginal Heritage Impact Permit (AHIP) and

associated Aboriginal cultural heritage assessment. All other land was identified to contain none to low archaeological potential.

#### Hydrology: Groundwater, stormwater and water quality

The subject property falls gradually from south to north at a slope of 3-10%. Stormwater management for the eastern portion of the site has existing stormwater and irrigation infrastructure (as per DA/92/00574). The infrastructure directs water through sediment and nutrient traps from surrounding creeks, sloped land and ring roads to artificial waterbodies for irrigation and water features in the landscaped areas. The western portion of the site is not connected to this infrastructure with water runoff flowing to Cessnock Road. It is intended that any future development on this land will extend the existing stormwater infrastructure to mitigate stormwater and water quality.

A previous Hydro-Geology Study (refer Attachment 4) prepared for Amendment 53 of *Lake Macquarie Local Environmental Plan 1984* identified that groundwater was present at the subject property. The Study concluded that subsurface materials on the subject property were generally low permeability being less than 1mm/day with the exception of spring areas to the centre portion of the subject property. However, these areas permeability was considered low and that drainage infrastructure would mitigate against any contamination impacts. Overall, contamination potential from the cemetery use was generally considered low due to the low permeability of subsurface materials.

#### Traffic and access

The Planning Proposal is considered to be of minor to no impact relating to traffic, access and car parking arrangements. The proposal will maintain access from the current sealed access road that intersects with Cessnock Road and Cozzie Lane. Existing car parking on the subject property will also be maintained.

Additionally, the Traffic Impact Assessment (see Attachment 3) concluded that the local and state road networks would have adequate capacity to cater for increased demand from the proposal (20 vtpm in the AM and PM peak). The subject property would also have adequate provision of land to increase car parking arrangements and expansion of internal road networks. This was also reconfirmed by the RAP who supported traffic and access considerations. Regardless, any future development application would need to address Councils LMDCP 2014, with potential concurrence to Transport for NSW.

The Planning Proposal will be referred to Transport for NSW for comment on any potential impacts to State road infrastructure.

#### Visual and amenity impact

The Planning Proposal may have an adverse impact on the localised amenity due to the future expansion of the Memorial Park. This would be most pronounced to adjoining rural-residential properties to the east. Nevertheless, this is considered a minor impact due to the existing rural character of the site and the low development footprint presented within the concept plan. Any future development application would likely expand the rural landscape setting which would be regularly maintained by Invocare. Critically, any future development application would be required to address visual amenity impacts utilising Council's Scenic Management Guidelines (2013) within LMDCP 2014 and consideration of *Guidelines for developments adjoining land managed by the Office of Environment and Heritage* (2010).

The Planning Proposal will also be referred to National Parks and Wildlife Service for comment on any amenity impacts and recommended mitigation impacts pursuant to *Guidelines for developments adjoining land managed by the Office of Environment and Heritage* (2010).

### **9. How has the planning proposal adequately addressed any social and economic effects?**

The proposed rezoning would facilitate future cemetery and crematoria uses for the Memorial Park enabling increased cemetery land supply for 100 years to cater for long-term demand

within the Hunter and Greater Sydney regions. Although the expansion may impact on neighbouring rural residential properties it is considered that any such impacts can be mitigated through vegetation screening or generous setbacks at the development application stage. Overall, the expansion would benefit the community by providing service choice to cater for a variety of diverse cultures.

Economically, the expansion of the Lake Macquarie Memorial Park would create a positive economic outcome. Any future development would generate short and long term local employment during the construction and operational stages.

## **Section D – State and Commonwealth Interests**

### **10. *Is there adequate public infrastructure for the planning proposal?***

Yes. The subject property is located in a rural area; however, it is well serviced by existing utilities and connected by Cessnock Road, Wakefield Road and M1 Motorway. As stated above, any future development of the site would have negligible impact on the existing road network.

Additionally, the subject property is well serviced by reticulated water infrastructure serviced by the Hunter Water Corporation and contains an on-site sewage management system.

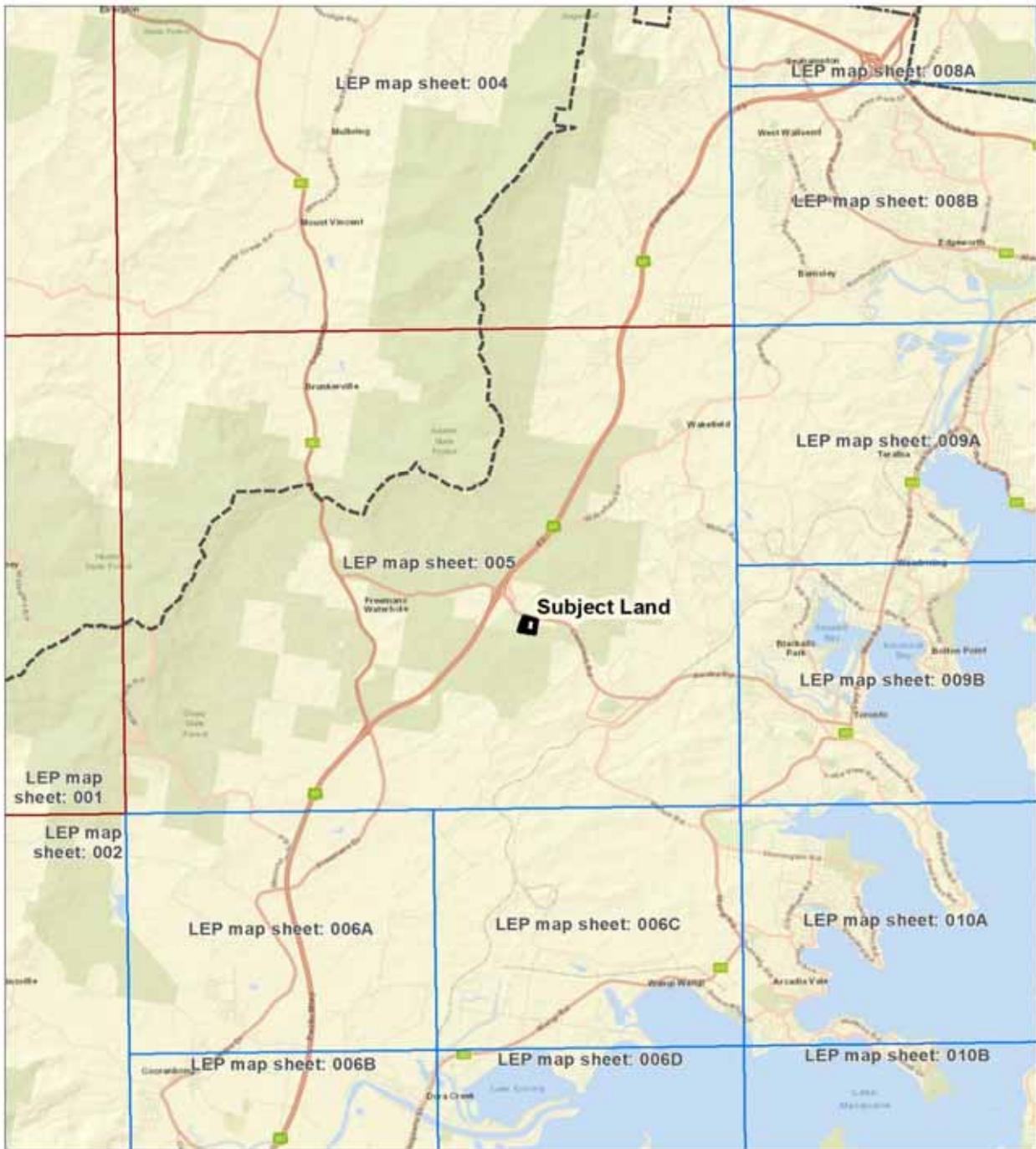
### **11. *What are the views of State and Commonwealth public authorities consulted in accordance with the Gateway determination?***

Consultation with State and Commonwealth public authorities will be determined as part of the Gateway determination. Council recommends consultation with the following authorities:

- NSW Cemeteries and Crematoria
- NSW Subsidence Advisory
- NSW Rural Fire Service
- Transport for NSW (former Roads and Maritime Service)
- National Parks and Wildlife Service
- Hunter Water Corporation

## Part 4 – MAPPING

### Map 1 – Locality



## Map 2 – Aerial Photograph



**Air Photo**  
**2020 Aerial Photography**  
Nearmap Imagery 2020

0 200  
Metres

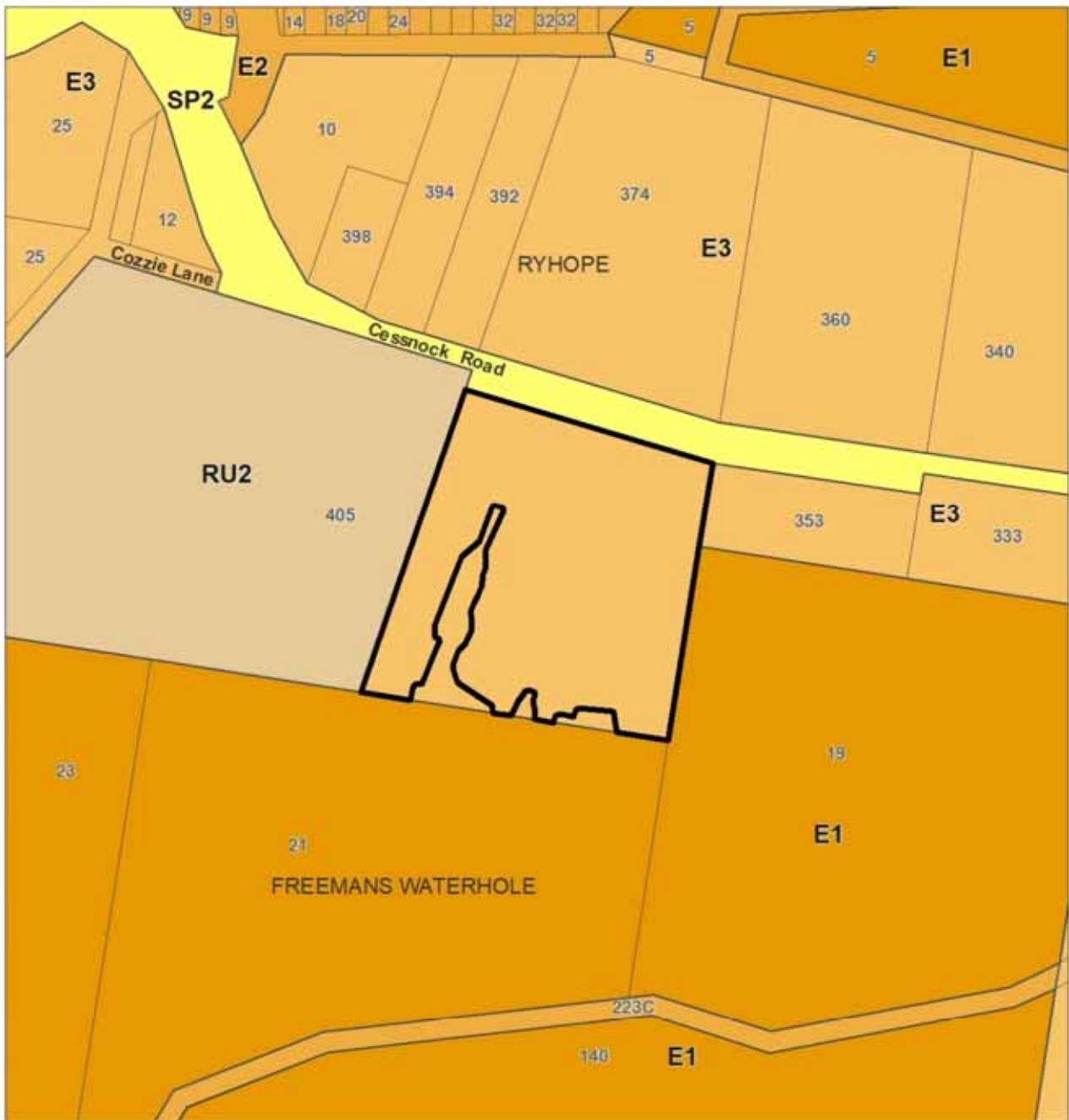
N  
Projection GDA 1994  
Zone 56

**LAKE  
MACQUARIE  
CITY**

Date: 29/01/2020 Planning Proposal: RZ\_6\_2019

Legend:  
Land Parcel (white outline)  
Subject Land (yellow outline)

### Map 3 – Current Land Use Zones



**Existing Land Zoning Map**  
Lake Macquarie Local Environmental Plan 2014

0 200  
Metres

Projection GDA 1994  
Zone 56

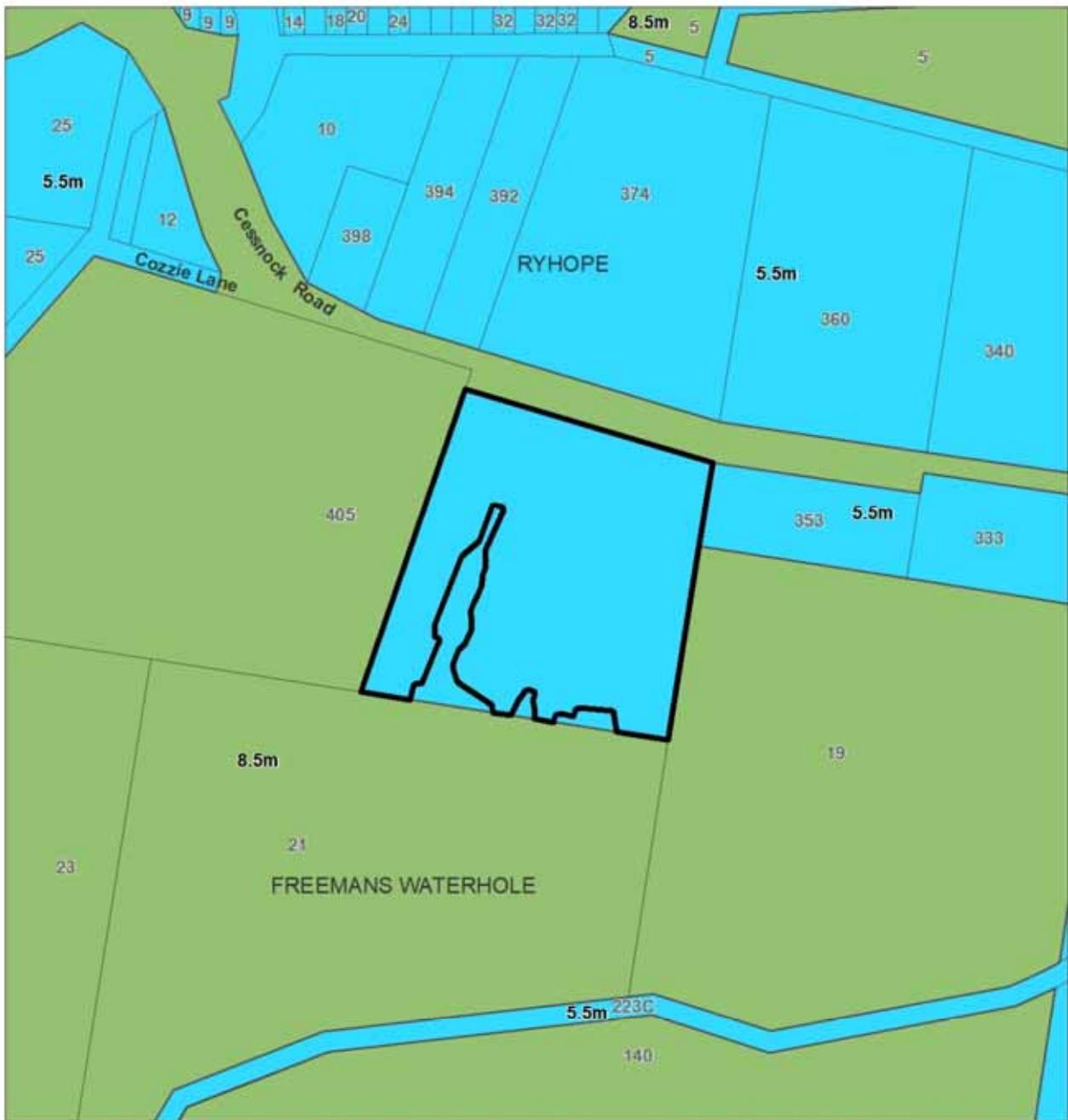
**LAKE MACQUARIE CITY**

Date: 29/01/2020 Planning Proposal RZ\_6\_2019

**Legend**

- Land Parcel
- Subject Land
- Land Zoning**
- E1 National Parks and Nature Reserves
- E2 Environmental Conservation
- E3 Environmental Management
- RU2 Rural Landscape
- SP2 Infrastructure

### Map 4 – Current Height of Building



**Existing**  
**Height of Buildings Map**  
Lake Macquarie Local Environmental Plan 2014

0 200  
Metres

N  
Projection GDA 1994  
Zone 56

**LAKE  
MACQUARIE  
CITY**

Date: 31/01/2020 Planning Proposal: RZ\_6\_2019

**Legend**

- Land Parcel
- Subject Land
- Maximum Building Height (metres)**
- 5.5
- 8.5

### Map 5 – Current Minimum Lot Size



**Existing Lot Size Map**  
Lake Macquarie Local Environmental Plan 2014

**Minimum Lot Size**

- 20 ha
- 40 ha

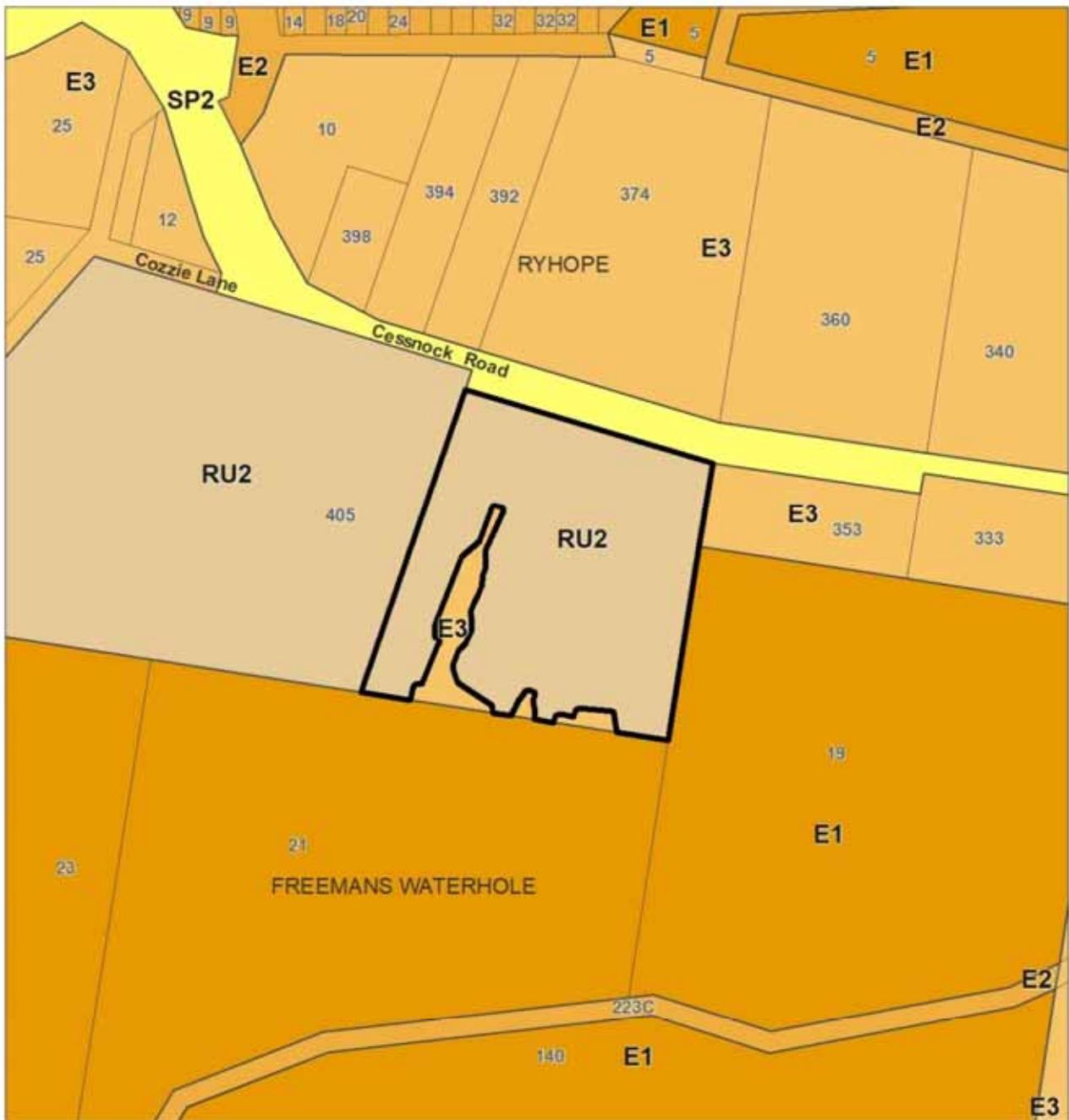
0 200  
Metres

Projection GDA 1994 Zone 56

**LAKE MACQUARIE CITY**

Date: 4/02/2020 Planning Proposal: RZ/6/2019

# Map 6 – Proposed Land Use Zone



**Legend**

- Land Parcel
- Subject Land
- Land Zoning**
- E1 National Parks and Nature Reserves
- E2 Environmental Conservation
- E3 Environmental Management
- RU2 Rural Landscape
- SP2 Infrastructure

## Proposed

### Land Zoning Map

Lake Macquarie Local Environmental Plan 2014

0  200

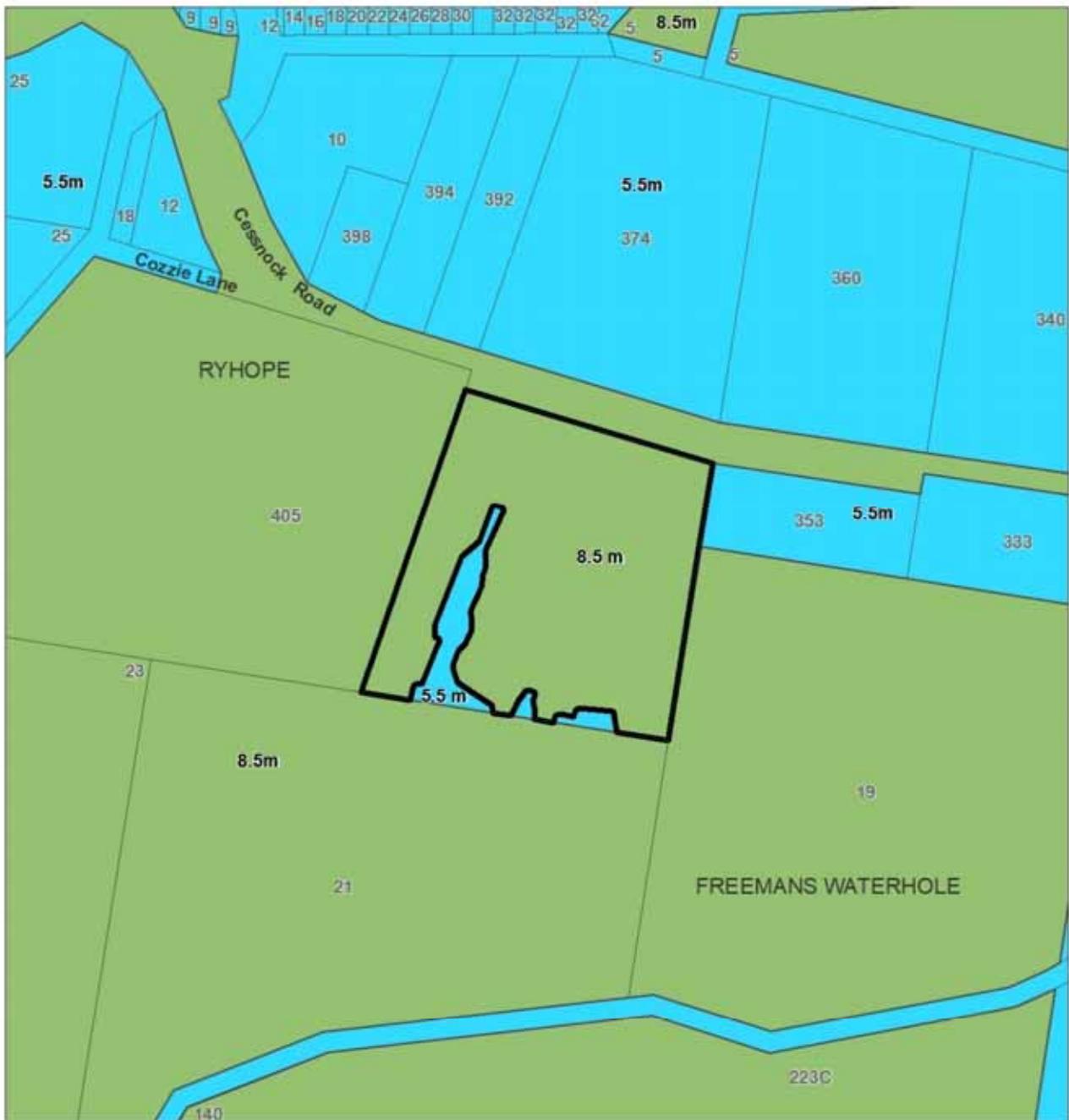
Metres

N

Projection GDA 1994  
Zone 56

Date: 29/01/2020 Planning Proposal RZ\_6\_2019

# Map 7 – Proposed Height of Building



**Proposed**  
**Height of Buildings Map**  
Lake Macquarie Local Environmental Plan 2014

**Maximum Building Height (metres)**

- 5.5
- 8.5

0 200  
Metres

Projection GDA 1994  
Zone 56

**LAKE  
MACQUARIE  
CITY**

Date: 31/01/2020 Planning Proposal: RZ\_6\_2019

### Map 8 – Proposed Minimum Lot Size



**Proposed Lot Size Map**  
Lake Macquarie Local Environmental Plan 2014

**Minimum Lot Size**

- 20 ha
- 40 ha

Legend:  
Land Parcel (white box)  
Subject Land (black outline)

Scale: 0 to 200 Metres

Projection: GDA 1994 Zone 56

LAKE MACQUARIE CITY

Date: 4/02/2020 Planning Proposal: RZ\_6\_2019

## Part 5 – COMMUNITY CONSULTATION

Community consultation will be undertaken for a 28-day period. Landowners and stakeholders will be notified via mail of the public exhibition period.

## Part 6 – PROJECT TIMELINE

Action	Timeframe
Anticipated commencement date (date of Gateway determination)	April 2020
Anticipated timeframe for completion of required technical information	Nil
Timeframe for government agency consultation (pre exhibition)	21 days
Public exhibition (commencement and completion dates)	28 days
Date of Public hearing (if required)	Nil
Consideration of submissions	2 weeks
Timeframe for government agency consultation (post exhibition if required)	1 month
Post exhibition planning proposal consideration / preparation	October 2020
Submission to Department to finalise LEP	October 2020
Date RPA will make Plan (if delegated)	November 2020
Date RPA will forward to the Department for notification (if not delegated)	November 2020

## **Attachment 1 – Ecological and Bushfire Assessment**

**ECOLOGICAL & BUSHFIRE  
PRELIMINARY ASSESSMENT  
FOR  
PROPOSED REZONING OF  
E3 – ENVIRONMENTAL MANAGEMENT  
LANDS  
LOT 1 DP833614  
405 CESSNOCK ROAD  
RYHOPE, NSW**

**Prepared for: KDC**

**28 June 2019**

**AEP Ref: 1808**



## Contents

1.0	Introduction.....	1
2.0	Site Particulars .....	2
3.0	Proposed Development.....	5
4.0	Literature Review.....	6
5.0	Approvals Pathway.....	7
5.1	The Rezoning Process.....	7
5.2	Key Ecology Considerations.....	7
5.3	NSW <i>Biodiversity Conservation Act 2016</i> .....	8
5.4	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>	10
5.5	<i>Rural Fires (RF) Act 1997</i> .....	10
5.6	<i>Water Management Act 2000</i> .....	11
6.0	Results.....	12
6.1	Preliminary Vegetation Mapping.....	12
6.2	Other Habitat Features.....	14
6.3	Threatened Species.....	15
7.0	Proposed Rezoning.....	16
8.0	Seasonal Survey Requirements .....	18
9.0	Commonwealth EPBC Act Process .....	19
10.0	Bushfire .....	20
11.0	Conclusion.....	26
12.0	References.....	27



## Tables

Table 1 - Hollow-bearing Trees .....	14
--------------------------------------	----

## Figures

Figure 1 – Site Location .....	3
Figure 2 – Current Land Zoning .....	4
Figure 3 – Biodiversity Values Map .....	9
Figure 4 – Preliminary Vegetation and Habitat Mapping .....	13
Figure 5 – Vegetation retention priorities .....	17
Figure 6 – Bushfire Prone Land Map .....	20
Figure 7 – Hazard vegetation and Slope .....	22
Figure 8 – APZs off hazard vegetation .....	24

## Appendices

Appendix A – Flora Species List

Appendix B – Site Photos



## 1.0 Introduction

At the request of KDC, Anderson Environment & Planning (AEP) have undertaken the necessary investigations to provide an ecological assessment and bushfire hazard assessment regarding the proposed rezoning process of part of Lot 1 DP833614 at 405 Cessnock Road Ryhope, NSW (*the site*).

The report is specifically intended to inform the likely approval pathways with regards to ecological and bushfire considerations, as well as identify any key constraints with regards to the rezoning and development of the site.

The desktop survey, along with the site inspection as well as professional judgement has been used to describe preliminary vegetation types and condition of the vegetation therein to estimate likely ecological value of the site and the likelihood of threatened species occurring within the site.

The site was inspected by two AEP ecologists on 17 June 2019. The inspection included general site reconnaissance and traversal, with a view to verifying information that had been gathered at the desktop level, and also to identify the presence of potential important ecological features such as waterbodies, potential habitat for threatened species etc. Detailed preliminary ecological findings advice pertaining to the site is included here.

The proposed development is not on BV mapped lands, on the assumption that the land proposed to be rezoned will be below the relevant clearing thresholds and is considered unlikely to impact significantly on native flora and fauna a BDAR is not considered necessary. The Bushfire assessment considered both Planning for Bushfire Protection 2006 and 2017.



## 2.0 Site Particulars

The proposed development is located within Macquarie Memorial Park Cemetery and Crematorium, Ryhope, NSW (the study area). Other details are as follows:

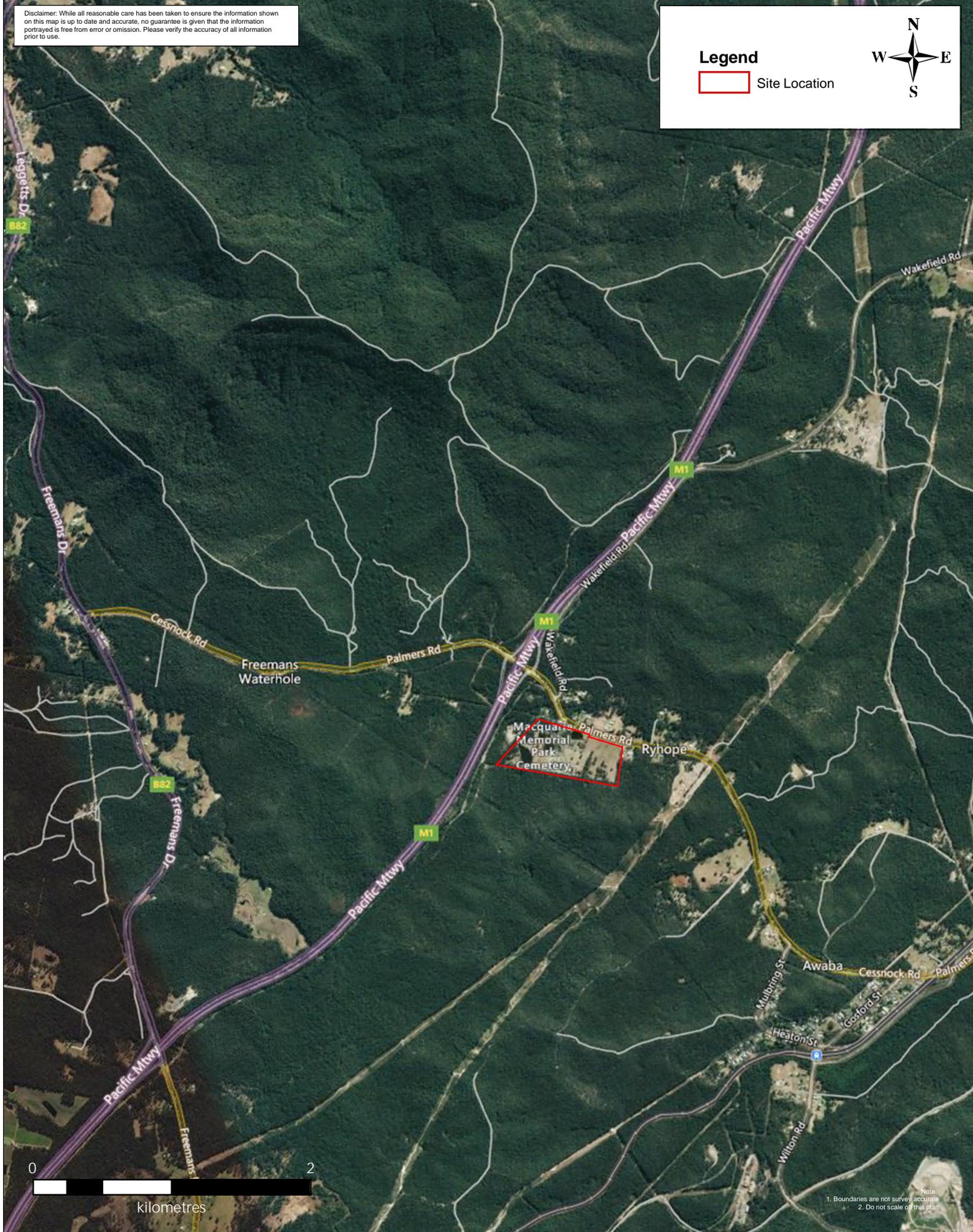
- **Address** –405 Cessnock Road, Ryhope, NSW.
- **LGA** – Lake Macquarie.
- **Title Details** – Lot 1 DP 833614.
- **Zoning** – Under the Lake Macquarie City Council Local Environment Plan 2014 (the LEP), the study area is zoned E3 – Environmental Management.
- **Subject Site (Proposed Development Area)** – The proposal is to rezone part of the lot from E3 Environmental Management to RU2 Rural Landscape to allow for the current memorial park to expand its facilities, which is currently not permissible in the E3 zone.
- **Current Land Use** – The subject site consists of open grassland and disturbed native vegetation. The land is currently stocked and supports three horses.
- **Surrounding Land Use** – Lands to the west are managed as the cemetery parklands of the Lake Macquarie Memorial Park Cemetery and Crematorium. Adjacent to the south and east of the subject site are large areas of undisturbed native vegetation (~1000 ha of similar vegetation). To the north of the site across Cessnock road are lots zoned as E3 with rural residential dwellings.

**Figure 1** depicts the site location, while **Figure 2** shows the current zoning for the site.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

**Legend**

 Site Location



Note:  
1. Boundaries are not survey accurate  
2. Do not scale off this plan



**AEP**

Title: Figure 1 - Site Location

Date: June 2019

Location: Ryhope, NSW

Client: KDC Pty Ltd

Our Ref: 1808

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

**Legend**

-  Parent Lot
-  RU2 zoned land
-  E3 Zoned Land



0 200  
metres

Note:  
1. Boundaries are not survey accurate  
2. Do not scale off this plan



Title: Figure 2 - Land zoning within Parent Lot

Date: June 2019

Location: Ryhope, NSW

Client: KDC Pty Ltd

Our Ref: 1808



### 3.0 Proposed Development

The planning proposal application is to rezone part of the land currently zoned as E3 Environmental Management to RU2 Rural Landscape lands, to allow for the current memorial park to expand its facilities, which is currently prohibited in the E3 zone. It is expected that the future development would involve the removal of up to approx. 0.3ha of native vegetation within the site. The subject site is 8.3ha in size and contains approximately 2.2ha of native vegetation of varied quality.



## 4.0 Literature Review

Primary information sources reviewed included:

- Aerial Photograph Interpretation (API) of the site and surrounding locality.
- *Vegetation Mapping Report, Lake Macquarie Local Government Area*, Report to Lake Macquarie City Council (Bell, S & Driscoll, C) (2016);
- *Lake Macquarie LGA Development Control Plan (DCP) 2014* (2014);
- *NSW Native Vegetation Regulatory Map* (2018);
- *NSW Biodiversity Value Map* (2018);
- *NSW Guide to Surveying Threatened Plants*, NSW Office of Environment and Heritage (2016);
- *OEH BioNet Atlas* (2019);
- *OEH Threatened Species website* (2019) (<https://www.environment.nsw.gov.au/threatenedspeciesapp/>);
- Collective knowledge gained from previous ecological survey and assessment in the Lake Macquarie area over the past 20 years.

In addition, database searches were carried out, namely:

- Review of flora and fauna records held by the NSW Office of Environment & Heritage (OEH) Atlas of NSW Wildlife within a 10km radius of the site (June 2019); and
- Review of flora and fauna records held by the Commonwealth Department of Energy and Environment (DoEE) Protected Matters Search within a 5km radius of the site (June 2019).



## 5.0 Approvals Pathway

### 5.1 The Rezoning Process

The making or amending of a Local Environment Plan (LEP) (i.e. a rezoning process) starts with a planning proposal for development. In most cases this is prepared by the local Council, often with funding and assistance from interested parties (i.e. the developer). The proposal is submitted to the NSW Department of Planning & Environment (DPE); this is called the “Gateway Process”.

The Minister (or delegate) will decide whether the planning proposal can proceed, and /or whether further information is required to inform the decision-making process. This deliberation will normally include public consultation and agency consultation. Following any required amendments, the proposal is then publicly exhibited, and following review and consideration of public submissions a draft LEP is presented to the Minister for approval.

### 5.2 Key Ecology Considerations

In regards to ecology considerations within the rezoning process, the two key stakeholders (aside from the community) to deal with will be Lake Macquarie City Council, and NSW Office of Environment & Heritage (OEH) as the expert adviser on biodiversity to DPE.

As such, it is very important to gain Council agreement and endorsement of the proposed rezoning early in the process. To do such requires engagement and consultation with Council, and a level of resolution of any identified key development constraint issues for the area. In this instance, a key matter to be adequately investigated and resolved will be that of ecological impact, and the means by which such impacts will be avoided, mitigated or offset where required.

Whilst there are avenues to request a review by DPE if Council is not supportive of the rezoning proposal, this is considered a last resort and should be only utilised if every effort to appease Council has been unsuccessful.

It is the strong preference of OEH to ensure that ecological issues are adequately considered and resolved at the rezoning process wherever possible. This ensures that future development application processes are not hamstrung by disagreement over ecological issues. Given that it is likely that no thresholds will be triggered requiring a Biodiversity Assessment Report (BDAR) at an LEP stage, OEH may require an Ecological Assessment Report (EAR) to be completed to determine the impacts to biodiversity prior to the rezoning being approved. An EAR essentially involves assessing impacts by applying the 5 Part Test of the impacts proposed by the development on threatened flora and fauna.

To that end, to satisfy relevant parties any proposed vegetation clearance will require a sufficiently detailed ecological impact assessment.



### 5.3 *NSW Biodiversity Conservation Act 2016*

Changes in 2016 to biodiversity legislation within NSW have fundamentally changed the approvals pathway for vegetation clearing. Development seeking to remove native vegetation above a certain threshold would trigger the need for production of a Biodiversity Development Assessment Report (BDAR) via application of the Biodiversity Assessment Method (BAM).

The BDAR requires formalised assessment of biodiversity values present within the site (including vegetation plots, surveys for potentially occurring threatened species, etc.), along with details of efforts made by the proponent to avoid and / or minimise vegetation removal and subsequently minimise impacts upon identified biodiversity (particularly threatened entities).

Residual impacts are quantified after the avoid / minimise process is applied and, subject to conditions placed upon the proposal by Council (see **5.3.1 Avoid and Minimise**), offsets in the form of biodiversity credits that require retirement or purchase are calculated based upon the vegetation type being removed and the threatened species that are likely to be impacted by the proposal.

Serious and Irreversible Impacts (SAIIs) are also to be considered. If a proposed development will cause a SAI, the determining authority will refuse development consent. Proposals should seek to avoid potential SAIIs.

A BDAR can be triggered by the proposed development being located in an area mapped on the Biodiversity Values map or if proposed clearing of native vegetation is greater than a certain threshold (determined by the minimum lot size of the land) or if the proposed development is likely to have significant impacts on threatened flora and fauna as designated by the 5 Part test.

Relating to the current rezoning and associated proposal there are no areas on site mapped on the Biodiversity Values map (**Figure 3**). The proposed vegetation clearance (approx. 0.3ha) required by the proposed development is less than the 0.5ha clearance trigger and, given the degraded nature of the vegetation on the site and large areas of contiguous vegetation, it is considered unlikely that there will be any significant impacts relating to this clearance.

Given the above it is considered that a BDAR is considered unlikely to be required.

## Biodiversity Offset Scheme (BOS) Entry Threshold Map



0.7 0 0.33 0.7 Kilometers

GCS\_GDA\_1994

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

### Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days

### Notes

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NSW Environment & Heritage



### **5.3.1 Avoid and Minimise**

While a BDAR is not required it is still good practice to consider the project planning and design, to minimise impacts upon native vegetation, habitat and other prescribed biodiversity values.

As the rezoning determining authority, DPE is also bound to consider the practical application of “Avoid / Minimise / Offset”, with provision of Offsets being seen as a last resort. As to how DPE/OEH will apply the concept of “Avoid / Minimise” may vary considerably from project to project.

Concept planning of the proposed development has sought to avoid as much vegetation as possible with only a minimal portion of the highly disturbed remnant vegetation proposed for clearance of access roads as well as some potential clearing of isolated paddock trees. In addition, the retention of areas of E3 Environmental Management within the subject site will further minimise impacts on surrounding bushland.

Avoid, Minimise and Offset principles have all been given due consideration within this development. Furthermore, environmental management actions, if undertaken, have a high potential to significantly improve the current condition of the strip.

Additional impact assessment provisions are required under the BDAR process for candidate SAIL communities and species as outlined under Section 10.2 of the BAM Methodology.

## **5.4 Commonwealth *Environment Protection and Biodiversity Conservation Act 1999***

Matters of National Environmental Significance (MNES) including listed ecological communities or threatened species require impact assessment as per Significant Impact Assessment guidelines 1.1 (DoE 2013) under the EPBC Act. Impact assessment under the EPBC Act is to occur as part of the Ecological Assessment reporting stage as per standard procedure. Other EPBC Act listed species also have potential to occur and will need consideration and survey work. Such assessments are generally linked to a specific development proposal (i.e. at the DA stage), but if it is sought within a designated development, then the proposed action can be referred at any stage. From our understanding of the site at this point, we do not envisage that significant impacts on MNES will occur.

## **5.5 *Rural Fires (RF) Act 1997***

As the proposed development may eventuate in the construction of buildings with a business purpose, a Bushfire Safety Authority (BSA) consent will not be required from the NSW Rural Fire Service (RFS) for the development to proceed, unless any of the



developments are for a special fire protection purpose (SFPP) (e.g. child care centre). Should the need for such SFPPs arise, a report addressing Section 100B (2) of the RF Act relevant to obtaining a BSA will need to be produced to accompany a development and the development will be considered as “Integrated Development” under Division 4.8 of the EP&A Act 1979.

#### **5.6 *Water Management Act 2000***

No streams occur within the study site, therefore provisions of the Water Management Act 2000 do not apply.



## 6.0 Results

### 6.1 Preliminary Vegetation Mapping

Based on examination of Bell (2016) and the Vegetation Mapping of Lake Macquarie LGA (2014) combined with on-ground examination of floristics, a Preliminary Vegetation Map was generated for the site (see **Figure 4**).

Review of Bell (2016) and the Vegetation Mapping of Lake Macquarie LGA (2014) reveals that MU30-f Freemans Peppermint – Apple – Bloodwood Forest (likely commensurate with PCT 1619 Smooth-barked Apple – Red Bloodwood – Brown Stringybark – Hairpin Banksia heathy open forest of coastal lowlands) is present within the subject site over approx. 2.2ha.

Ground truthing of the vegetation on site confirmed the desktop mapping of Freemans Peppermint – Apple – Bloodwood Forest, existing in a highly disturbed state within the subject site and in good condition along the southern and eastern boundaries (**Figure 4**), with the rest of the subject site comprising exotic paddock grasses, heavily grazed by horses, best described as a disturbed grassland.

The vegetated strip on the western boundary of the subject site occurs in a swale, and has been positively identified as Freemans Peppermint – Apple – Bloodwood Forest. The strip has a consistent canopy with canopy trees Red Bloodwood (*Corymbia gummifera*), Spotted Gum (*C. maculata*), Narrow-leaved Ironbark (*Eucalyptus crebra*), Sydney Peppermint (*E. piperita*) and Broad-leaved White Mahogany (*E. umbra*), which accord to those listed in the Freemans Peppermint – Apple – Bloodwood Forest profile (Bell, 2016). Most canopy trees were in good condition, with some at a mature growth stage, despite competition with exotics and weeds. There is little to no understory, while the shrub layer consists of mostly exotic species such as Wild Tobacco (*Solanum erianthum*), and fewer native species. The ground layer was sparse and comprised of a variety of native grasses, such as Kangaroo Grass (*Themeda australis*), Wiry Panic (*Entolasia stricta*) and Three-awn Speargrass (*Aristida vagans*), as well as exotics such as Cobbler's Pegs (*Senecio linearifolius*) and Whiskey Grass (*Andropogon virginicus*). The strip is highly degraded, with evidence of past modification, a high composition of exotic and weed plants (**Appendix A**), as well as a considerable presence of hard rubbish (bricks, wire, corrugated iron, a refrigerator) and garden waste.

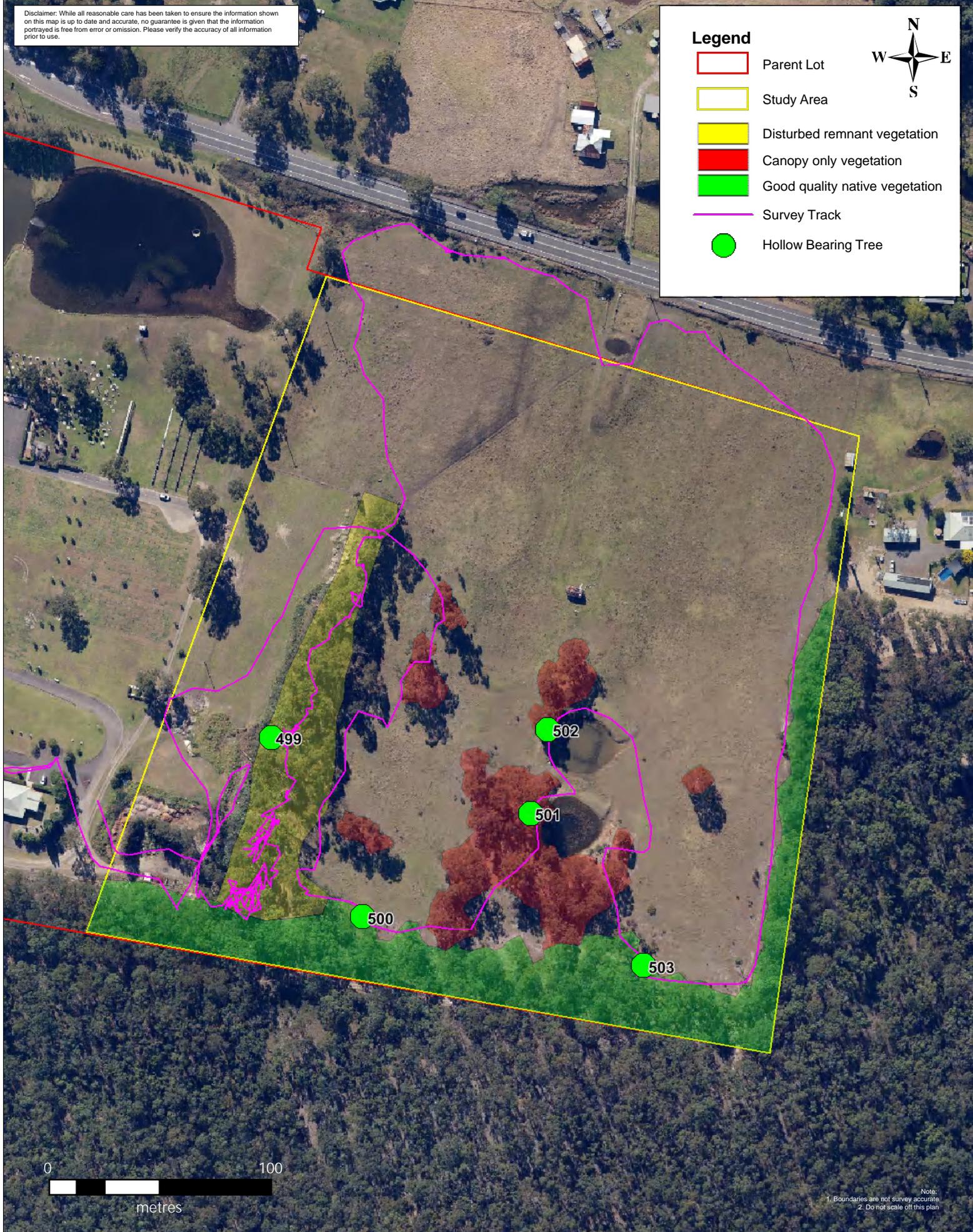
The patches of native vegetation within the paddock were comprised of native canopy trees that similarly accord to those listed in the Freemans Peppermint – Apple – Bloodwood Forest profile. These stands had no understory, with mostly exotic grasses occurring on the ground layer (**Figure 4**).

The vegetation on the southern and eastern boundary was in good condition, and corresponded to canopy, shrub and grass species listed in the Freemans Peppermint – Apple – Bloodwood Forest profile (**Appendix A**).

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

**Legend**

-  Parent Lot
-  Study Area
-  Disturbed remnant vegetation
-  Canopy only vegetation
-  Good quality native vegetation
-  Survey Track
-  Hollow Bearing Tree



Notes:  
1. Boundaries are not survey accurate  
2. Do not scale off this plan



Title: Figure 4 - Vegetation Map, Survey Effort and HBTs Date: June 2019

Location: Ryhope, NSW

Client: KDC Pty Ltd

Our Ref: 1808



## 6.2 Other Habitat Features

### 6.2.1 Fauna habitat

Hollow-bearing trees were identified on the western and southern boundary of the study site, as well as in the stands near the dams (**Figure 4**). A total of five (5) hollow-bearing trees were observed with four small, one medium and one large hollow identified (**Table 1**). Furthermore, several fallen logs (particularly in the western vegetated strip) and dense grassy shrub layers occur in various locations which may offer habitat for ground-dwelling and ground-foraging species.

The presence of sections of dense ground-layer and sparser shrub-layer also presents habitat opportunities, both for nesting and foraging purposes. The two medium sized dams and the one smaller pond within the lot and related riparian vegetation would provide breeding and foraging opportunities for fauna species, particularly reptiles, amphibians and water birds.

These features, supported by a varied, species-rich (though mostly exotic) understory could provide potential foraging habitat for Squirrel Gliders (*Petaurus norfolcensis*), and microbat species, along with forage and nesting habitat for the Little Lorikeet (*Glossopsitta pusilla*). Of potential note is the availability of habitat for the Southern Myotis (*Myotis macropus*), a threatened microbat that forages over large waterbodies and roosts within nearby hollow-bearing trees.

The vegetation on site remains linked with a large area of contiguous habitat offering a large amount of high-quality habitat.

**Table 1 - Hollow-bearing Trees**

No.	Species	DBH (cm)	Hollows	Total	Other
499	<i>Stringybark</i>	50	1 x S	1	Hollow in arboreal termite nest
500	<i>Eucalyptus Umbra</i>	80	1 x S	1	Hollow in Arboreal termite nest
501	<i>Angophora costata</i>	100	1 x M, 1 x S	2	
502	<i>Eucalyptus Umbra</i>	50	1 x M	1	
503	Stag	70	1 x L	1	Very large hollow in trunk
<b>Total Number of Hollows</b>				<b>5</b>	

**Table Key**

S - Small (5-10cm)

M - (10-20cm)

L - (>20cm)



### **6.3 Threatened Species**

Threatened species were examined at a desktop level through a Bionet Atlas search and a federal MNES search followed up by field survey and habitat analysis to determine species with potential to use the site.

#### **6.3.1 Threatened Flora**

No threatened plants were observed during the recent inspection or in previous work in adjacent areas. However, *Cryptostylis hunteriana* and *Tetratheca juncea* were indicated with potential to be present on site and further targeted surveys would be required across appropriate seasons were vegetation to be removed or impacted.

#### **6.3.2 Threatened Fauna**

No threatened animals were observed during the recent inspection or in previous work in adjacent areas. Desktop analysis combined with habitat analysis indicated that there is habitat that may support the following threatened species:

##### **6.3.2.1 Birds**

Little Lorikeet (*Glossopsitta pusilla*) may potentially utilise the site as a foraging or nesting resource though it is considered unlikely that this highly mobile species would solely rely on habitat within the subject site.

##### **6.3.2.2 Mammals**

There are suitable resources for microbat species within the subject site. Although no breeding habitat (caves or similar) is present for those bats requiring caves for maternity roosts, the presence of Hollow-bearing Trees provides suitable microbat roosting habitat and the areas in and around forested areas could provide foraging habitat. Species that may be present include the Large-eared Pied Bat (*Chalinolobus dwyeri*), Little Bentwing-bat (*Miniopterus australis*), Eastern Bentwing-bat (*Miniopterus schreibersii Oceanensis*), Eastern Freetail Bat (*Mormopterus norfolkensis*). Southern Myotis (*Myotis Macropus*), could also utilise the dams and nearby HBTs for foraging, roosting and maternity habitat.



## 7.0 Proposed Rezoning

It is recommended that the rezoning process takes into account the retention of native vegetation based on quality, habitat and connectivity. Analysis of high-resolution aerial photography and ground truthing indicates linear and disturbed remnant vegetation patches on the western boundary and good quality remnant vegetation on the eastern and southern boundaries, and approximately four (4) patches of mainly canopy only remnant patches, which are all commensurate with MU30-f Freemans Peppermint – Apple – Bloodwood Forest.

**Figure 5** shows the recommended areas of priority retention for vegetation within the site. Rezoning should take into consideration the quality of the vegetation within the site, allowing utilisation of areas of vegetation with low habitat value while retaining good quality habitat vegetation by:

- Keeping the good quality native vegetation on the southern and eastern boundaries;
- Determining how much of the highly disturbed western strip of remnant vegetation should be retained and enhanced and that which can be used for development following appropriate ecological appraisal; and
- Allowing usage of the pasturelands and parts of the canopy only vegetation for development following appropriate ecological appraisal.

In addition, the rezoning should also try to ensure that no patches of vegetation become isolated from the adjacent areas of remnant vegetation.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

**Legend**

-  Parent Lot
-  Study Area
-  Retain where possible
-  Priority for development
-  Priority for retention



Note:  
1. Boundaries are not survey accurate  
2. Do not scale off this plan



Title: Figure 5 - Vegetation retention priorities

Date: June 2019

Location: Ryhope, NSW

Client: KDC Pty Ltd

Our Ref: 1808



## 8.0 Seasonal Survey Requirements

Appropriate targeted seasonal surveys during flowering events of the reference population/s or during appropriate survey periods for fauna species, are required to be undertaken for these species to clarify their status within the subject site should vegetation impacts be proposed:

- *Cryptostylis hunteriana* –December - January
- *Tetratheca juncea* –September – October
- *Grevillea parviflora* – August - December



## 9.0 Commonwealth EPBC Act Process

If impacts are to occur on any listed matters of national environmental significance (MNES), then a referral to the DoE will be required under the EPBC Act.

It is considered unlikely that any MNES will require referral however, there is potential for the following federally listed species to be impacted which will need to be surveyed appropriately should any native vegetation clearance be proposed:

- *Cryptostylis hunteriana*
- *Tetratheca juncea*
- *Grevillea parviflora*
- *Chalinolobus dwyeri*

It is considered unlikely that the vegetation within the parent lot is important habitat for Swift Parrot (*Lathamus discolor*) or Regent Honeyeater (*Anthochaera phrygia*), however a request has been sent to the LMBC requesting confirmation that the site is not mapped as important habitat for these species.

## 10.0 Bushfire

### Bushfire Prone Land Mapping

Examination of Lake Macquarie City Council bushfire prone land map (2018) confirms that the study area is within a designated bushfire prone area (**Figure 6**). This designation will trigger the need for a Bushfire Threat Assessment (BTA) to accompany any application for development within the site.

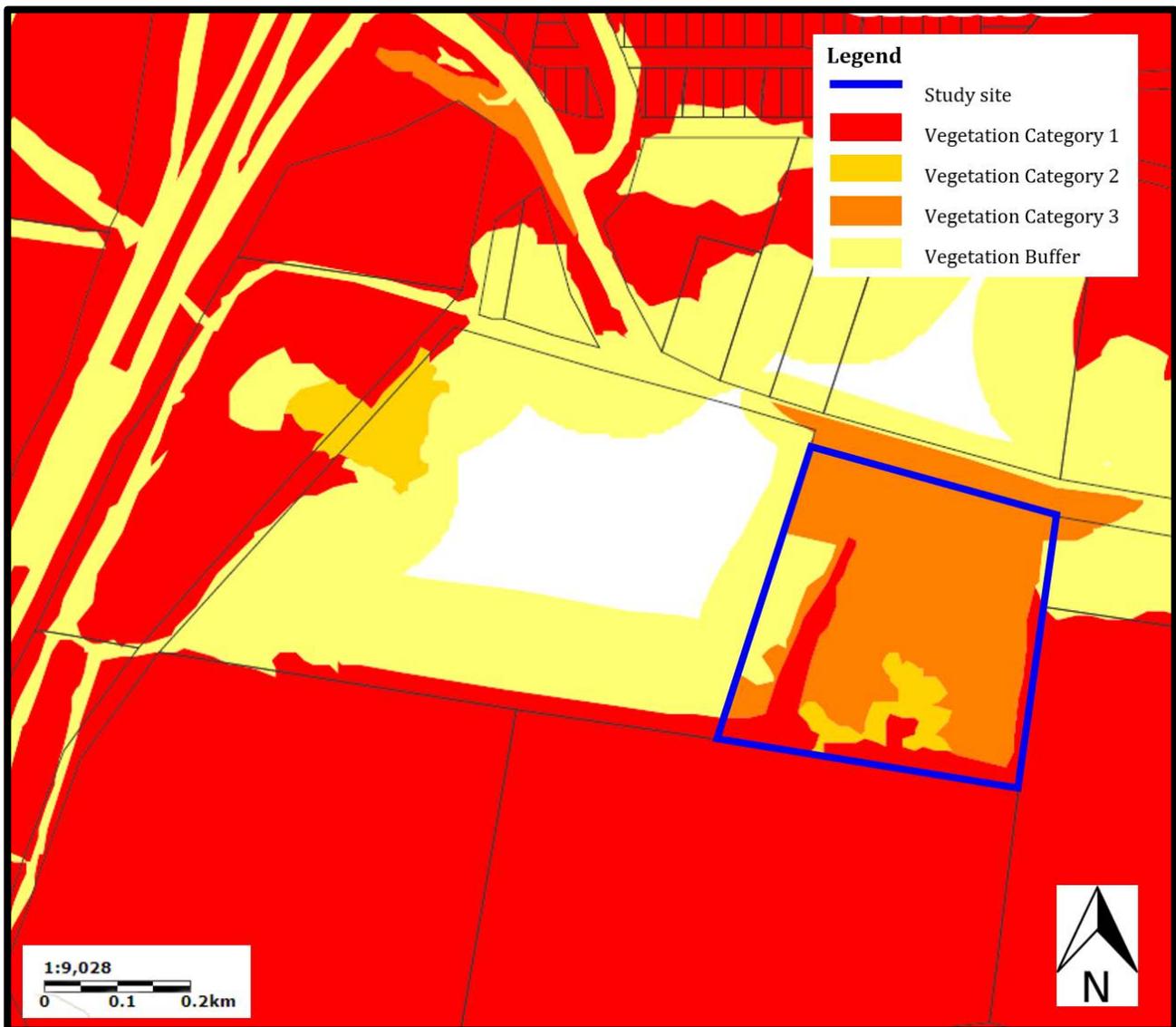


Figure 6 – Bushfire Prone Land Map



## **Bushfire Threat Assessment**

The BTA will need to address the bushfire protection measures required by “*Planning for Bushfire Protection 2006*” (PBP 2006), as well as the updated version of the report currently available as a pre-release and called “*Planning for Bush Protection 2018*” (PBP 2018 pre-release) and expected to come into force in August 2019. It will also need to address the construction requirements of the proposed development in accordance with the provisions of the *Building Code of Australia (BCA) – Volume 2* (2010) and *Australian Standard 3959-2009* (AS 3959) – “Construction of buildings in bushfire-prone areas”.

Appendix 3 of the PBP details the steps required to determine the level of bushfire hazard that applies to the site. Factors influencing the hazard level include:

- The formation of vegetation surrounding the site (as defined by Keith 2004);
- The distance between vegetation and the site (or proposed buildings therein);
- The effective slope for each patch of vegetation; and
- The Fire Danger Index (FDI) of the council area within which the development occurs.

These factors together provide an indication of the level of threat posed to the development from any vegetation retained within the site and surrounding vegetation in the event of a bushfire, and the required mitigation measures to be taken in the form of Asset Protection Zones (APZs) and building construction standards.

## **Vegetation**

Due to the fact that at this stage, no further information is known regarding the purpose of the rezoning proposal and subsequent development, it has been assumed that all vegetation will be retained (**Figure 7**), for the purposes of this preliminary bushfire assessment. Hazard vegetation is expected to remain within the site, as well as on the south, east and western boundaries.

For the purposes of this assessment, hazard vegetation has been assessed as “Forest” under the PBP.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

**Legend**

-  Parent Lot
-  Study Area
-  140m vegetation assessment buffer
-  100m slope assessment buffer
-  Hazard Vegetation
-  Contour line



Note:  
1. Boundaries are not survey accurate  
2. Do not scale off this plan



Title: Figure 7 - Bushfire Hazard Vegetation and Slope      Date: June 2019  
Location: Ryhope, NSW  
Client: KDC Pty Ltd      Our Ref: 1808



## Slope Analysis

The site slopes gently upward north to south. Slope from surrounding offsite hazard vegetation is as follows:

- South, East and West – flat/upslope;

Note that the derived APZ setbacks are based upon the need to conform to construction standards for a building of Class 5 or above under the Building Code of Australia standards. This would need to be re-evaluated if different classes of buildings are proposed.

## Fire Danger Index

The site and surrounds occur within the Greater Sydney region, with existing vegetation subsequently classified with a Fire Danger Index (FDI) of 100 as per Appendix 2 of the PBP. Although vegetation within the site will likely be cleared by future development, surrounding vegetation also needs to be considered.

## Asset Protection Zones (APZs)

Due to the fact that the study area is proposed for RU2 – Rural Landscape rezoning, the following provisions apply in relation to APZs:

- Assuming no residential building is planned, any future development will be required to meet the standards of the BCA and be considered as infill development. In this case, APZs do not apply and “*The BCA does not provide for any bush fire specific performance requirements and as such AS 3959 does not apply as a set of ‘deemed to satisfy’ provisions. The general fire safety construction provisions are taken as acceptable solutions, but the aim and objectives of PBP apply in relation to other matters such as access, water and services, emergency planning and landscaping/vegetation management.*” (NSW RFS, 2006).
- Should any building of Class 1 to 4 or classified as SFPP be planned in the future development (e.g. child care centre, care taker’s dwelling), then provisions included in the PBP 2006 (and PBP 2018 from May 2019) relating to APZs and Bushfire Attack Lines (BALs) will apply. Such provisions would be further analysed and reported on in a BTA Report.

**Figure 8** details APZs from hazard vegetation that would be required to meet the requirement for defensible space should buildings be proposed.

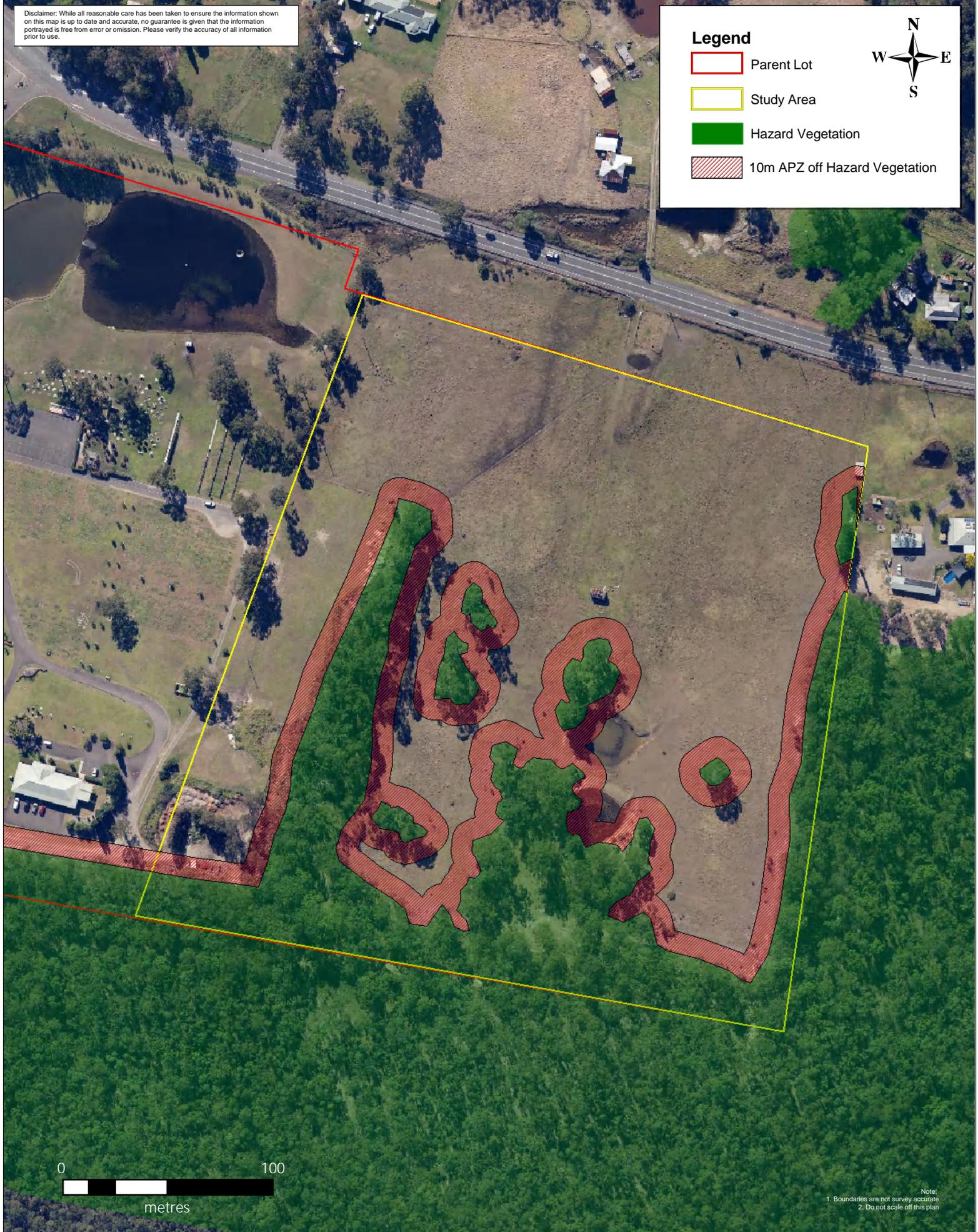
## Construction Standards

Construction standards which apply to non-residential land are detailed in the BCA.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

**Legend**

-  Parent Lot
-  Study Area
-  Hazard Vegetation
-  10m APZ off Hazard Vegetation



Note:  
1. Boundaries are not survey accurate  
2. Do not scale off this plan



Title: Figure 8 - APZ from Hazard Vegetation

Date: June 2019

Location: Ryhope, NSW

Client: KDC Pty Ltd

Our Ref: 1808



### **Other Bushfire Considerations**

Suitable access / egress would need to be compliant with Section 4.6 of the PBP (2006) (and PBP 2018 from May 2019), and typically require for a perimeter road to be located between buildings and adjacent bushfire hazards (roads can be located within the area required as an APZ). The site can be accessed from the east via Cessnock road. The nearest suburbs are Awaba and Toronto to the east. The nearest fire station is the Fire and Rescue NSW Toronto Fire station approximately 9km east. Water supply standards should be readily achievable given the proximity to existing development. Overall, identified setbacks will need to be incorporated into development design but are considered achievable for the site.



## 11.0 Conclusion

Given that the majority of the subject site is currently grazed paddock that has little ecological value it is considered that rezoning these areas to RU2 would not impact on the native vegetation present on site. Rezoning of a small amount of highly disturbed vegetation should also have a minimal impact on native flora and fauna present within the subject site. Retaining the majority of the good quality vegetation on the southern and eastern boundaries should allow for both environmental conservation while also providing visual amenity.

The master plan must take into consideration and be guided by future ecological studies to be undertaken within the site. Given the amount of vegetation assumed to be cleared (unless otherwise communicated), a Biodiversity Development Assessment Report is not considered likely to be required but an EAR should accompany any development that involves the clearance of vegetation within the site.

Bushfire considerations should be taken into account in the master planning phase including access, egress, water supply and defensible space between hazard vegetation and proposed industrial and commercial structures. Should residential or SFPP buildings be planned, then further provisions from PBP 2006/2018 (pre-release) apply with regards to APZs and BALs.

Early engagement with planning authorities such as Council, OEH, DPE and DPI Water is encouraged to ensure that potential impacts on biodiversity are addressed during the early planning of land use change.

Yours faithfully,

**ANDERSON ENVIRONMENT & PLANNING**

**IAN BENSON**

**SENIOR ECOLOGIST**



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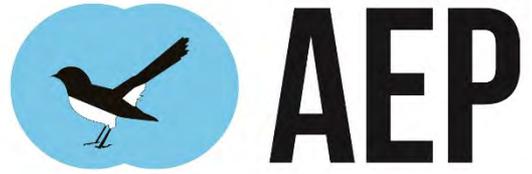
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## **Appendix A – Flora Species List**



## FLORA SPECIES LIST

The following list includes all species of vascular plants observed on site during fieldwork. It should be noted that such a list cannot be considered comprehensive, but rather indicative of the flora present on the site. It can take many years of flora surveys to record all of the plant species occurring within any area, especially plant species that are only apparent in some seasons such as Orchids.

A number of species cannot always be accurately identified during a brief survey, generally due to a lack of suitable flowering and/or fruiting material. Any such species are identified as accurately as possible, and are indicated in the list as thus:

- specimens that could only be identified to genus level are indicated by the generic name followed by the abbreviation “sp.”, indicating an unidentified species of that genus;
- specimens for which identification of the genus was uncertain are indicated by a question mark (“?”) placed in front of the generic, which is followed by the abbreviation “sp.” and;
- specimens that could be accurately identified to genus level, but could be identified to species level with only a degree of certainty are indicated by a (“?”) placed in front of the epithet.

Authorities for the scientific names are not provided in the list. These follow the references outlined below.

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Names of families and higher taxa follow a modified Cronquist System (1981).

Introduced species are indicated by an asterisk “\*”.

Threatened species listed under the *Biodiversity Conservation Act 2016* (BC Act) or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) are indicated in **bold font** and marked as:

**(V)** = Vulnerable Species listed under the BC Act 2016

**(E)** = Endangered Species listed under the BC Act 2016

**(EV)** = Vulnerable Species listed under the EPBC Act 1999

**(EE)** = Endangered Species listed under the EPBC Act 1999



# AEP

Family	Scientific Name	Common Name
Agavaceae	<i>Yucca sp.*</i>	-
Alliaceae	<i>Agapanthus sp.*</i>	
Apiaceae	<i>Centella asiatica</i>	Swamp Pennywort
Apocynaceae	<i>Parsonsia straminea</i>	Common Silkpod
Arecaceae	<i>Syagrus romanzoffiana</i>	Cabbage Tree Palm
Asteraceae	<i>Bidens pilosa*</i>	Cobbler's Pegs
Asteraceae	<i>Senecio linearifolius</i>	Fireweed
Casuarinaceae	<i>Allocasuarina torulosa</i>	Forest Oak
Dilleniaceae	<i>Hibbertia empetrifolia subsp. empetrifolia</i>	-
Doryanthaceae	<i>Doryanthes excelsa</i>	Gynea Lily
Fabaceae	<i>Acacia longifolia</i>	
Fabaceae	<i>Acacia sp.</i>	Wattle
Fabaceae	<i>Desmodium rhytidophyllum</i>	-
Fabaceae	<i>Glycine clandestina</i>	Twining Glycine
Fabaceae	<i>Glycine microphylla</i>	Small-leaf Glycine
Fabaceae	<i>Gompholobium latifolium</i>	Broad-leaf Wedge-pea
Fabaceae	<i>Hardenbergia violacea</i>	False Sarsaparilla
Fabaceae	<i>Podolobium ilicifolium</i>	Prickly Shaggy Pea
Fabaceae	<i>Pultenaea paleacea</i>	-
Fabaceae	<i>Acacia myrtifolia</i>	Red Stem Wattle
Goodeniaceae	<i>Goodenia heterophylla subsp. heterophylla</i>	Variable Leaved Goodenia
Juncaceae	<i>Juncus sp.</i>	-
Lauraceae	<i>Cinnamomum camphora*</i>	Camphor Laurel
Lindsaeaceae	<i>Lindsaea microphylla</i>	Lacy Wedge-fern
Lobeliaceae	<i>Pratia purpurascens</i>	Whiteroot
Lomandraceae	<i>Lomandra confertifolia subsp. pallida</i>	-
Lomandraceae	<i>Lomandra cylindrica</i>	-
Lomandraceae	<i>Lomandra longifolia</i>	Spiky-headed Mat-rush
Lomandraceae	<i>Lomandra multiflora subsp. multiflora</i>	Many-flowered Mat-rush



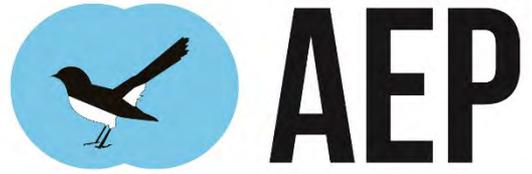
# AEP

Family	Scientific Name	Common Name
Lomandraceae	<i>Lomandra obliqua</i>	Twisted Mat-rush
Magnoliaceae	<i>Magnolia sp.* (Cultivar)</i>	Magnolia
Malvaceae	<i>Sida rhombifolia*</i>	Paddy's Lucerne
Musaceae	<i>Musa acuminata* (Cultivar)</i>	Banana
Myrtaceae	<i>Angophora costata</i>	Smooth-barked Apple
Myrtaceae	<i>Corymbia gummifera</i>	Red Bloodwood
Myrtaceae	<i>Corymbia maculata</i>	Spotted Gum
Myrtaceae	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark
Myrtaceae	<i>Eucalyptus piperita</i>	Sydney Peppermint
Myrtaceae	<i>Eucalyptus umbra</i>	Broad-leaved White Mahogany
Myrtaceae	<i>Leptospermum trinervium</i>	Slender Tea-tree
Myrtaceae	<i>Syncarpia glomulifera</i>	Turpentine
Nyctaginaceae	<i>Bougainvillea sp.* (Cultivar)</i>	Bougainvillea
Oleaceae	<i>Ligustrum sinense*</i>	Small-leaved Privet
Passifloraceae	<i>Passiflora edulis*</i>	Common Passionfruit
Phormiaceae	<i>Dianella caerulea</i>	Blue Flax-lily
Plantaginaceae	<i>Plantago sp.</i>	Plantain
Poaceae	<i>Andropogon virginicus*</i>	Whisky Grass
Poaceae	<i>Aristida vagans</i>	Three-awn Speargrass
Poaceae	<i>Austrodanthonia sp.</i>	A Wallaby Grass
Poaceae	<i>Cynodon dactylon</i>	Common Couch
Poaceae	<i>Echinopogon caespitosus</i>	Bushy Hedgehog-grass
Poaceae	<i>Entolasia stricta</i>	Wiry Panic
Poaceae	<i>Imperata cylindrica</i>	Blady Grass
Poaceae	<i>Microlaena stipoides</i>	Weeping Grass
Poaceae	<i>Paspalum sp.*</i>	
Poaceae	<i>Pennisetum clandestinum*</i>	Kikuyu, Kikuyu Grass
Poaceae	<i>Stenotaphrum secundatum*</i>	Buffalo Grass



# AEP

Family	Scientific Name	Common Name
Poaceae	<i>Themeda australis</i>	Kangaroo Grass
Poaceae	<i>Rytidosperma pallidum</i>	
Proteaceae	<i>Persoonia linearis</i>	Narrow-leaved Geebung
Rosaceae	<i>Rubus fruticosus sp. agg.*</i>	Blackberry complex
Rubiaceae	<i>Pomax umbellata</i>	Pomax
Smilacaceae	<i>Smilax australis</i>	Lawyer Vine
Solanaceae	<i>Solanum erianthum*</i>	Wild Tobacco
Solanaceae	<i>Solanum sp.*</i>	
Verbenaceae	<i>Lantana camara*</i>	Lantana
Verbenaceae	<i>Verbena bonariensis*</i>	Purpletop
Vitaceae	<i>Cayratia clematidea</i>	Native Grape
Xanthorrhoeaceae	<i>Xanthorrhoea latifolia subsp. latifolia</i>	-



## **Appendix B – Site Photos**



**Exotic vegetation on the western edge of the subject site adjoining cemetery lands.**



**Western edge of strip of remnant vegetation used as a storage location (above), Looking north along western strip of vegetation (below)**





# AEP



**Rubbish within remnant vegetation strip (above and below)**





**Open Paddock (above) and paddock trees (below) looking east**





**Canopy only vegetation (above) and dam and surrounds (below)**



## **Attachment 2 – Archaeological Due Diligence Report**

Our Ref: 4452/R01/RYHOPE/NR/AC/26092019

26 September 2019

Koby Development and Property Consultants  
Courtney Sargent  
Suite 2B, 125 Bull Street  
Newcastle West NSW 2302

Email: courtney@kdc.com.au

Dear Courtney

**Re: Archaeological Due Diligence Assessment for the expansion of the existing Memorial Park, Ryhope**

Koby Development and Property Consultants (KDC) has engaged Umwelt Environmental and Social Consultants to prepare an Aboriginal Archaeological Due Diligence Assessment for the proposed rezoning of part of the Memorial Park at Ryhope from E3 to RU2 to allow for facility expansions within this area, as this is prohibited under the current zoning. It is also proposed to undertake facility expansion works within the remainder of Memorial Park, which is currently zoned RU2. The entirety of the Memorial Park is herein referred to as the 'project area' and is shown in **Figure 1**. The applicable zoning is shown in **Figure 2** for reference.

This Aboriginal Archaeological Due Diligence Assessment has been undertaken in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (2010) and to meet the requirements of the Lake Macquarie Aboriginal Heritage Management Strategy (LMAHMS). The purpose of an Aboriginal archaeological due diligence assessment is to demonstrate that reasonable and practicable measures have been taken to avoid harm to an Aboriginal object and/or place.

### 1.0 Activity Description

The proposed works within the project area will involve:

- Rezoning of the eastern portion of the project area from E3 (Environmental Landscape) to RU2 (Rural Landscape) (refer to **Figure 2**).
- Facility Expansion within the western portion of the project area, currently zoned RU2 (refer to **Figure 3**).

It is noted that this due diligence assessment specifically relates to the project area shown in **Figure 1** and does not consider the archaeological potential outside of this area.

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Quality Outcomes

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**Legend**

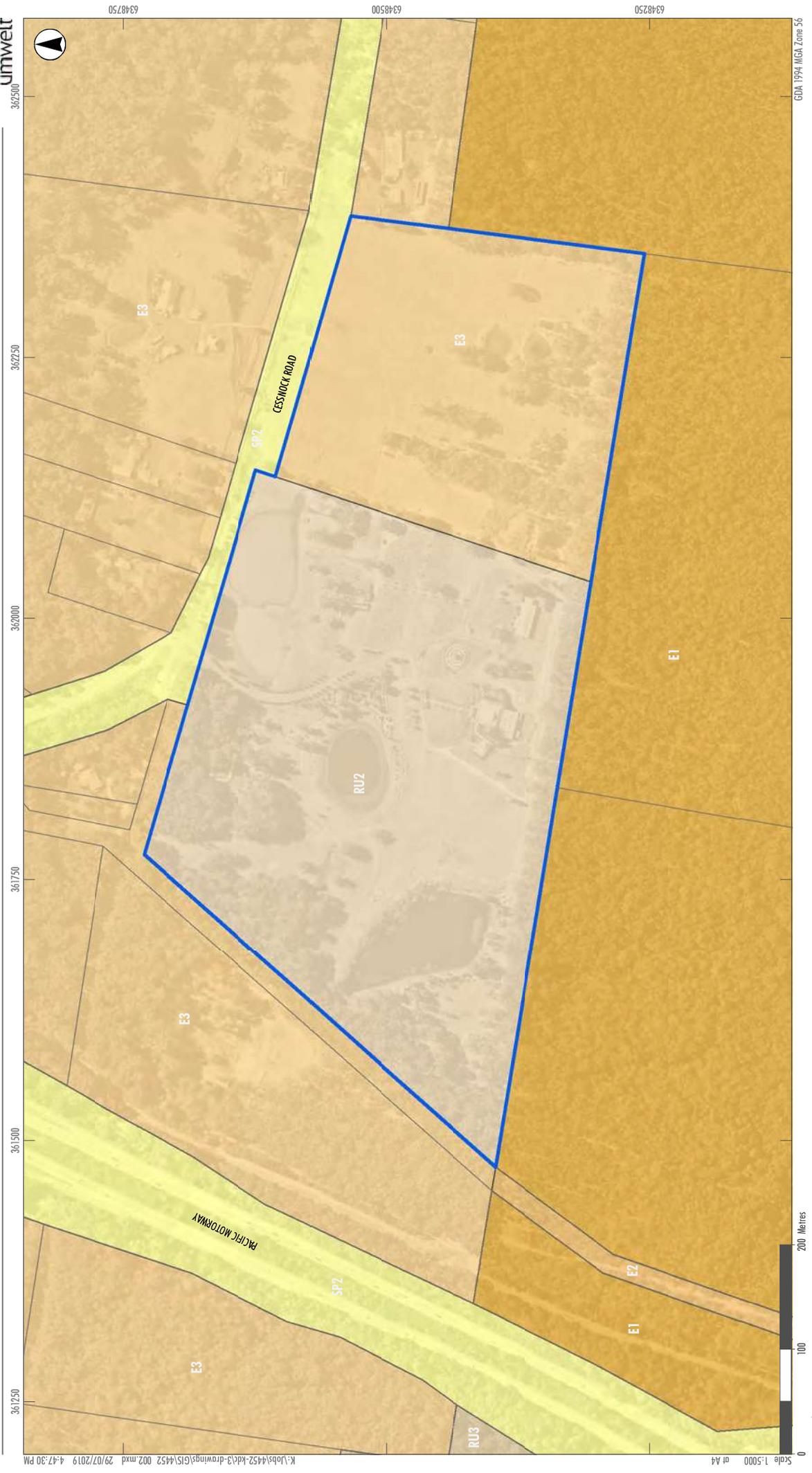
- Project Area
- Area of Low-Moderate Archaeological Potential
- Property Boundary

**Archaeological Sites**

- New Sites
- AHIMS Sites

**FIGURE 1**

**Project Area and AHIMS sites**



**FIGURE 2**  
**Zoning**

- Legend**
- Project Area
  - Property Boundaries
  - Land zone (Lake Macquarie Local Environmental Plan 2014)
    - E3 Environmental Management
    - RU2 Rural Landscape
    - E1 National Parks and Nature Reserves
    - E2 Environmental Conservation
    - RU3 Forestry
    - SP2 Infrastructure

Image Source: Netmap (June 2019) Data source: DFSI (2017, 2019)



**Legend**

- Project Area
- Area of Low-Moderate Archaeological Potential
- Archaeological Sites
- New Sites

**FIGURE 3**  
**Proposed Development**

Image Source: Neatmap (June 2019) Data source: Marshall Scott (8/01/2019)

## 2.0 Legislative and Regulatory Context

The Office of Environment and Heritage (OEH) is primarily responsible for regulating the management of Aboriginal cultural heritage in New South Wales under the *National Parks and Wildlife Act 1974* (NPW Act). Supporting the NPW Act is the National Parks and Wildlife Regulation 2009 (the Regulation) and other codes of practice and guidelines including the due diligence code.

The NPW Act defines an Aboriginal object as:

*any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales*

In accordance with Section 86(1) of the NPW Act, it is an offence to harm or desecrate a known Aboriginal object, whilst it is also an offence to harm an Aboriginal object under Section 86(2). Harm is defined as any act or omission that:

- a) destroys, defaces or damages an object or place, or
- b) in relation to an object – moves the object from the land on which it had been situated, or
- c) is specified by the regulations, or
- d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c),

but does not include any act or omission that:

- e) desecrates the object or place (noting that desecration constitutes an offence separate to harm), or
- f) is trivial or negligible, or
- g) is excluded from this definition by the regulations.

Section 87(2,4) establishes that it is a defence to prosecution under Section 86(2) (the strict liability offence) if due diligence was exercised to reasonably determine that the activity or omission would not result in harm to an Aboriginal object or if the activity or omission constituting the offence is a low impact act or omission (in accordance with Section 80B of the Regulation). The Regulation identifies that compliance with the due diligence code is taken to constitute due diligence in determining whether a proposed activity will harm an Aboriginal object.

## 3.0 Consultation with Aboriginal Parties

As part of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010), adherence to *the Aboriginal cultural heritage consultation requirements for proponents* (OEH 2010) is not required. However, consultation with relevant Aboriginal parties is a key component in identifying and assessing the significance of Aboriginal objects and/or places as well as determining and carrying out appropriate strategies to mitigate impacts to Aboriginal heritage.

The *Lake Macquarie Aboriginal Heritage Management Strategy* (LMAHMS) acknowledges that the LMCC is located on part of the traditional country of the Awabakal people. The Awabakal traditional country is bounded to the north by the Worimi, west by the Wonnarua, south-west by the Darkinjung and south by the Kuring-gai people. The LMAHMS provides guidelines regarding consultation with Aboriginal community representatives within the Lake Macquarie local government area.

In accordance with this document, the following groups were consulted:

- Batabah Local Aboriginal Land Council
- Awabakal Descendants Traditional Owners Aboriginal Corporation (ADTOAC)
- Awabakal Traditional Owners Aboriginal Corporation (ATOAC)
- Lower Hunter Aboriginal Incorporated (LHAI).

These groups were invited to attend visual inspections of the project area, undertaken on 26 June 2019 and 25 July 2019. The purpose of undertaking consultation is to determine whether the project area held any sites and/or values known to the local Aboriginal community, and to consider the known cultural significance of the wider landscape within which the project area is situated. Comments regarding the significance of the Lake Macquarie area have previously been provided, as documented below.

***Statement of Significance by the Awabakal and Guringai Peoples:***

*The Awabakal and Guringai is one of the 600 or more language groups or 'nations' that existed across Australia at the time of European contact and are part of the oldest and continuous living culture in human history. The Awabakal and Guringai presence within the Lake Macquarie Region extends from the present day back many thousands of years and is reflected in both tangible and intangible aspects of Aboriginal culture and history. Past survey and assessment within the Lake Macquarie Region has identified Aboriginal Cultural Heritage Sites (the tangible evidence of occupation) and landscape features of cultural value embedded within a landscape that provided physical and spiritual sustenance (often intangible aspects) to the Awabakal and Guringai and those Aboriginal People they invited into their Country.*

*The Awabakal and Guringai people also have a continuing, contemporary history of trying to protect and preserve the Lake Macquarie Region. They maintain concerns over Development licences being approved in the region and the adverse impacts this has on their cultural values and landscape features and footprints of their ancestors which are being impacted through cumulative and overlapping development activity and unmonitored and unmanaged human recreational activity.*

*As indicated by the statements provided by the Awabakal and Guringai peoples within the document, the mental, physical and spiritual wellbeing of the Awabakal and Guringai People and those Aboriginal Peoples that feel a connection to this landscape is a contemporary phenomenon and not just 'a thing of the past'.*

*The Lake Macquarie Region contains a plethora of registered Aboriginal cultural heritage sites identified as having Aboriginal cultural value and significance. The sites and landscape features link contemporary Awabakal and Guringai People with generations of their ancestors and are extremely important teaching places and places of spiritual renewal.*

*Although the impact of European invasion dramatically changed Aboriginal life in Australia forever, the recent history of the Lake Macquarie Region is also characterised by the cultural resilience of Aboriginal Peoples, for both those who have retained connection to Country and those that are reconnecting to Country. Recent history is also characterised by the movement of other Aboriginal Peoples into the Country of the Awabakal and Guringai and the development of their own more recent attachments to the area. Whilst a diversity of attachment and experience is recognised, it is also recognised that the landscape, vegetation and watercourses of the Lake Macquarie Region form part of an Aboriginal cultural landscape of traditional and contemporary cultural and spiritual value to many Aboriginal People.*

*Aboriginal lore requires that the Aboriginal cultural landscape (which includes Aboriginal heritage sites, landscape features of cultural value, the plants, animals and water) of the Lake Macquarie Region is cared for so that it will survive for future generations of our Peoples.*

*The custodial rights and obligations of Aboriginal people for Caring for Country underpin the principles of this document. It is highlighted, however, that the Awabakal and Guringai peoples in no way support any impact to Aboriginal sites, landscape features of Aboriginal cultural value or any aspect of the natural environment within the Lake Macquarie Region. Aboriginal people inherit the right and obligation to Care for Country, and endorsing any form of harm is assessed as culturally and ethically inappropriate.” (Awabakal Traditional Owners Aboriginal Corporation, Awabakal Descendants Traditional Owners Aboriginal Corporation and Guringai Tribal Link Aboriginal Corporation March 2010) © 2010.*

A draft version of this report was supplied to the Aboriginal parties for review and comment on 3 September 2019, with a follow up email sent on 11 September 2019. No responses were received during this timeframe.

#### **4.0 Environmental Context**

The decisions that people make regarding such things as where they live, the range of resources they use and other aspects of daily life may be influenced by the environment in which they live. The preservation and visibility of sites is also affected by environmental factors such as vegetation cover, past land-use and disturbance.

The project area is located on the Newcastle Coal Measures and Quaternary sediments of the Central Coast Lowlands and Awaba Hills region, which are characterised by broad low undulating hills with poorly drained alluvial flats and deltaic floodplains. The slopes are gently undulating with a local relief of less than 10 metres to 80 metres in height, with slope gradients of less than 3% to less than 25% dependant on the soil profile (Murphy 1993: 28-30; 81-83). More specifically the project area is located on relatively gently sloping ground at the base of the Sugarloaf Range with elevations of approximately 25 metres above sea level.

#### **4.1 Hydrology**

The project area is located in the Central Coast Lowlands and the Awaba Hills region, approximately six kilometres west of Lake Macquarie (Murphy 1993: 28-30; 81-83). The estuarine resources contained within Lake Macquarie would have provided major marine resources for Aboriginal people including a vast variety of fish and shellfish species. Access to fresh water is a major determinant of where Aboriginal people would have been able to camp for any period of time. An unnamed first order tributary of Palmers Creek flows through the project area from south-east to north-west. The main channel of Palmers Creek runs from east to west at distances from 80-150 metres from the northern boundary of the project area.

#### **4.2 Geology and Soils**

The northern portion of the project area is located in the Wyong soil landscape. The Wyong soil landscape is typically characterised by an A horizon (topsoil) of 10-40 cm of brownish black pedal loam overlying a mottled brownish grey clay B horizon (subsoil). Occasionally a shallow A<sub>2</sub> horizon of bleached yellow greyish brown to yellow orange sandy clay loam may occur (Murphy 1993: 81-83).

The southern portion of project area is located on the Warners Bay soil landscape. The Warners Bay soil landscape is characterised by an A<sub>1</sub> horizon comprising up to 20 cm of brownish black loam, overlying an A<sub>2</sub> horizon of 10-40 cm of hardsetting bleached clay loam and a B horizon (subsoil) of yellowish grey mottled clay. Soil profiles are dependent on landforms such as crest and ridges which are typified by shallower A horizons and drainage lines with deeper A horizons (Murphy 1993: 28-30).

The underlying geology of the project area is predominately Quaternary alluvial sedimentary deposits (Wyong soil landscape) and Permian sedimentary rock in the Boolaroo subgroup of the Newcastle Coal Measures (Warners Bay soil landscape). The Quaternary alluvial deposits consist of silt, mud, sands and gravels and the Permian sedimentary rocks consist of irregular coal seams, sandstone, tuff, mudstone and shale (Murphy 1993: 28-30; 81-83).

### 4.3 Flora and Fauna

The project area has been mostly previously cleared. Prior to vegetation clearance and based on soil landscape descriptions the area would have hosted a combination of closed-forest and tall open forest. The closed-forest is associated with the Wyong soil landscape, which contains remaining species of mostly Melaleuca and Eucalypts such as: prickly-leaved paperbark (*Melaleuca styphelioides*), flax leaf paperbark (*M. linariifolia*), swamp mahogany (*Eucalyptus robusta*), woollybutt (*E. longifolia*) and Sydney blue gum (*E. saligna*). The tall open forest is associated with the Warners Bay soil landscape, contains a variety of Eucalypts such as: grey gum (*E. punctata*), spotted gum (*E. maculata*), red bloodwood (*E. gummifera*), grey ironbark (*E. paniculata*), bastard mahogany (*E. umbra*), Sydney peppermint (*E. piperita*) and slaty red gum (*E. glaucina*) (Murphy 1993: 28-30; 81-83).

The estuarine resources contained within Lake Macquarie would have provided major resources for Aboriginal people including a vast variety of fish and shellfish species. Commonly exploited shellfish varieties include rock oyster (*Crassostrea commercialis*), mud oyster (*Ostrea angasi*), cockle (*Anadara trapezia*), mud whelk (*Pyrazus ebeninus*) and hairy mussel (*Trichomya hirsuta*). The estuarine and terrestrial resources available in the area provided a reliable source of both food and other materials utilised by Aboriginal people in the area.

### 4.4 Disturbance

The project area has been largely cleared over the course of historical land use, and has been disturbed as a result of ongoing development, construction and installation of infrastructure and services (Murphy 1993: 28-30; 81-83). Some areas remain that appear to contain remnant or regrowth vegetation. These areas are likely to have been subject to lower levels of disturbance.

### 5.0 Archaeological Context

A search of the Office of Environment and Heritage (OEH) Aboriginal Heritage Information Management Systems (AHIMS) register was undertaken on 18 June 2019 (Search ID: 428448). The search area encompassed the project area with a buffer zone of 1 kilometre. This extensive search identified five sites with the search area (refer to **Appendix 1**), none of which are located within the project area (refer to **Figure 1**).

**Table 1 AHIMS Sites**

AHIMS#	Site Name	Type	Approx. Distance to Project Area	Valid
38-4-0102	Palmer Creek PC1	Axe grinding groove and watering hole/well	380 m SE	Valid
38-4-1693	Palmer Creek Scarred Tree 1	Scarred/carved tree	750 m NE	Valid
38-4-1007	Palmer Creek 1	Grinding groove	900 m NE	Valid
38-4-1949	Palmer Creek IF6	Artefact	800 m NE	Valid
38-4-1694	Palmer Creek IFS	Artefact	850 m NE	Valid

It is important to note that the AHIMS register only contains information on Aboriginal sites for which site cards have been submitted, and the presence/ absence of recorded Aboriginal sites on the AHIMS register does not preclude other sites from being present.

### 5.1 Previous Archaeological Assessments

The four sites located to the north-east were recorded during assessments for the West Wallsend Colliery (WWC), which has been the subject of substantial archaeological survey. These assessments have primarily been focused on the elevated components of the Sugarloaf Range and identified the following:

- The mostly likely Aboriginal archaeological sites to occur within the Sugarloaf Range are grinding grooves and sites containing stone artefacts (either artefact scatters or isolated finds).
- Sites containing stone artefacts were located near watercourses but only where ground surface visibility was good, and on ridgelines and spurs, which were used as the major thoroughfares allowing people access to and from the steep sandstone landscape.
- Grooves from the grinding of axes, hatchets, adzes and other implements occur and it is highly likely that further grinding grooves will be located, generally within the channels of drainage lines at the heads of valleys, in areas around rock pools on ridge tops, on rock platforms near seepages and on rock platforms within or alongside the drainage lines in the base of the valleys.
- The existence of rock shelters is possible where suitable sandstone formations be present (i.e. cliff lines, large boulders); however, the majority of these will probably have no evidence of occupation.
- The spurs and ridges would have provided access to, and negotiation of, the steep escarpment country of the Sugarloaf Range and a travel way through the area to and from the swamp country in the north and the continuation of the steep escarpment country in the south/south-west. The spurs and ridges would have provided travel paths not only for the local Awabakal people but may also have provided access to other groups for whom entry into the area, possibly for trade or exchange as well as ceremonial activity, was sanctioned by the Awabakal.

In reviewing the above, it is noted that the current project area does not contain topography or geology suitable for rock shelters to be present nor does it comprise the elevated spurs and ridges discussed above.

## 6.0 Preliminary Assessment of Aboriginal Archaeological Potential

Based on the information reviewed in earlier sections of this report, it is clear that the project area is located in a region that would have been richly resourced and was frequented by Aboriginal people accessing these resources as part of their day to day life. Based on our understanding of the distribution of archaeological sites within the region and the environmental context of the current project area, the lack of permanent water availability within the project area is likely to have reduced the suitability of the area for occupation by Aboriginal people. However, the presence of minor drainage lines and the proximity to Palmers Creek suggest that the project area may have supported transitional use. In order to confirm this, a visual inspection was undertaken.

## 7.0 Due Diligence Inspection

The due diligence inspection of the project area was undertaken on 26 June 2019 by Umwelt Archaeologist Amanda Crick, Tori Leven of ADTOAC, Kyle Howie of ATOAC and John Wegener of LHA. The inspection was undertaken on foot and included of the entirety of the project area. A secondary inspection was undertaken on 25 July 2019 by Umwelt Archaeologist Amanda Crick, Tori Leven of ADTOAC, Kane Leven of ATOAC and John Wegener of LHA. The purpose of these visual inspections was to assess whether Aboriginal cultural heritage objects and/or places are present within the project area and/or have the potential to occur.

### 7.1 Results of the Inspection

For ease of discussion, the results of the inspection are discussed with reference to the E3 zoned portion of the project area (which is proposed to be rezoned to RU2) and the portion of the project area currently zoned RU2 (refer to **Figure 1**).

#### 7.1.1 E3 zoned portion of the project area

The portion of the project area currently zoned E3 has primarily been cleared and is currently used for grazing purposes, with the exception of an area in the south-western corner which is currently used by the Memorial Park to store soil (refer to **Plate 1**). This area also contains two farm dams with associated areas of disturbance from the deposition of soil during dam construction, as shown in **Plate 2**. Located generally in the centre of the area is a dilapidated corrugated iron shed built on brick piers (**Plate 3**). The shed was filled with rubbish and looks like it has been used for storage.

The landforms within this portion of the project area primarily comprise gently inclined slopes with a very minor former drainage line extending from the south-eastern to northern boundaries. This drainage line is unmapped, possibly because the two dams within this area have prevented flow within the former drainage line. To the south of the dams, the former drainage line includes sections of exposed bedrock where covering topsoil has eroded. On either side of the open depression the land gently rises to both the east and west, forming two gentle crests. Levels of visibility and exposure were higher on the crests and drainage line than in the remainder of this portion of the project area, within which grass coverage precluded visibility (refer to **Plate 5**). In contrast, the presence of some mature/regrowth vegetation to the south of the dams limited pasture grass growth and is associated with areas of sheetwash erosion. This erosion has exposed A<sub>2</sub> soil, as shown in **Plate 6**.

While the gentle crests bordering the drainage line have been subject to some disturbance (primarily via erosion), these landforms are substantially less disturbed than the remainder of this portion of the project area. They comprise relatively level, elevated areas with access to a former drainage line and therefore are more likely to have been attractive to Aboriginal people for camping activities, albeit for limited time periods and within a limited area. On this basis, these landforms (as mapped in **Figure 1** and **Figure 3**) are assessed as having low to moderate archaeological potential.

In contrast, the remainder of this portion of the project area has been disturbed by ongoing land use and comprises relatively undifferentiated slope landforms. It is considered unlikely that these landforms would have supported anything other than transitional use and they are assessed as having low archaeological potential.



**Plate 1** Soil stockpiles lining the tree line between the grazed paddock and existing Memorial Park



**Plate 2 Dams within the E3 zoned portion of the project area**



**Plate 3 Corrugated iron shed located in the centre of the E3 zoned portion of the project area**



**Plate 4 Extensive grass cover within the E3 zoned portion of the project area**



**Plate 5 View of typical grass cover and landform within grazed areas of the E3 zoned portion of the project area**



**Plate 6 Sheet wash exposure of A<sub>2</sub> soils bordering former drainage**

### **7.1.2 RU2 zoned portion of the project area**

This portion of the project area is currently used as a memorial park and cemetery. It includes current buildings, access roads, memorials, burials and landscaped gardens and lawns (refer to **Plate 7**). The majority of this portion of the project area has been clearly and observably disturbed by the current land use and had little to no visibility or exposure. In consultation with the Aboriginal parties, the highly disturbed areas were not targeted for survey and were assessed as having nil to low archaeological potential based on current disturbance.

Instead, survey effort was focussed on the western boundary of this area where regrowth/mature native vegetation is present (refer to **Plate 8**). Several access tracks and vehicle tracks lead into this area and an area of former curb and guttering was also identified. In general terms, exposures within this area comprised A<sub>2</sub> soils. Landforms comprised low inclination slopes bordering the former drainage line that is connected by the three major dams shown in **Figure 3**.



**Plate 7 View of Memorial Park**



**Plate 8 Extant vegetation on the western boundary**

Two new sites were recorded in this area, as shown in **Figures 1** and **3**.

Memorial Park 01 was recorded on the exposure of an existing service track and consisted of two broken silcrete flakes. While these flakes are manufactured of a consistent raw material, they are not conjoins but appear to comprise the proximal and distal portions of two different flakes. Despite good visibility in the extension of the track, no further artefacts were present. Based on the exposed soils within the adjoining areas, there is limited depth of topsoil (refer to **Plates 9** and **10**) both at the site location and in the surrounding area.

Memorial Park 02 was recorded on an existing pedestrian dirt pathway exposure and consisted of a broken flake of fine grained red silcrete (refer to **Plates 11** and **12**).

More non-artefactual red silcrete material was found in the surrounding area and it is possible that the artefact may have been introduced with gravel. However, this cannot be confirmed based on current evidence. As with Memorial Park 01, the soils associated with this site comprised skeletal A<sub>2</sub> soils.

With reference to the potential for further artefacts to be present within the western portion of this area, while the area is less disturbed than the main section of the Memorial Park, it has been subject to ongoing erosion such that only skeletal topsoil deposits remain. In addition, the landforms comprise largely undifferentiated slopes that would have supported transitional use only, containing the types of evidence identified within the two sites. Based on the nature of the landforms and the limited depth of topsoil, the western section of the portion of the project area currently zoned RU2 has low archaeological potential.



**Plate 9** Memorial Park 01 silcrete flakes



**Plate 10 Context of Memorial Park 01 facing north east**



**Plate 11 Memorial Park 02 silcrete flake**



**Plate 12 Context of Memorial Park 02 facing north**

## 7.2 Consideration of Proposed Work against the Due Diligence Code

Section 8 of the due diligence code outlines the process to guide due diligence assessments, summarised below in relation to the proposed works.

1: *Will the activity disturb the ground surface or any culturally modified trees?*

Yes. The proposed works will involve ground subsurface disturbance to facilitate the proposed expansion of the existing Memorial Park. In addition, the proposed rezoning from E3 to RU2 will allow for future disturbance, as shown in **Figure 3**. The current proposal includes the removal of trees within the project area. Irrespective, no culturally modified trees have been registered within the project area, and none were identified as part of the visual inspection undertaken to inform this assessment.

2: *Are there any:*

- a) *Relevant confirmed site records or other associated landscape feature information on AHIMS?*
- b) *Any other sources of information of which a person is already aware?*
- c) *Landscape features that are likely to indicate the presence of Aboriginal objects?*

As discussed in **Section 5.0**, no sites have been previously recorded within the project area.

Based on the environmental context, as well as the results of previous archaeological investigations undertaken in proximity to the project area, it is considered the most likely site type to occur in the area (if present) would be low density stone artefact scatters and scarred trees, with some potential for grinding grooves should sandstone exposures be present within drainage lines.

Other site types, including stone arrangements and rock shelters do not have any potential to be present within the project area based on both the environmental context and extent to which the project area has been previously disturbed.

### 3: *Desktop Assessment and Visual Inspection:*

**Sections 4.0 to 7.0** of this letter report provide the details of the desktop assessment and visual inspection of the project area. During the visual inspection two new sites were recorded on the western side of the project area, as shown in **Figure 1** and **Figure 3**. An area identified as having low to moderate archaeological potential was recorded in the south-eastern end of the project area, as shown in **Figure 3**.

With the exception of these areas, the remainder of the project area is assessed as having low archaeological potential based on the nature of the landforms it contains, the skeletal nature of remnant topsoil and/or the extent of disturbance from historical land use. In relation to the above, it is noted that no works are currently proposed within the area of low-moderate archaeological potential or in the immediate vicinity of site Memorial Park 01, as shown in **Figure 3**. Site Memorial Park 02 is located on the boundary of an area proposed for impact.

## 8.0 Management Recommendations

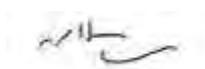
The following recommendations are made with reference to the requirements of the NPW Act, the NPW Regulation and the due diligence code. It is noted that these management recommendations reflect in-field discussions with Aboriginal parties and were provided to the Aboriginal parties for review and comment.

- The results of this assessment do not preclude rezoning of the portion of the project area currently zoned E3. However, any such rezoning should give consideration to the remaining recommendations documented below.
- Prior to the commencement of any ground disturbance works in the vicinity of the area of low-moderate potential and the recorded archaeological sites, clarification is required as to whether ground disturbance impacts will impact on this area and/or the recorded sites.
  - If impacts are required to the recorded archaeological sites, the proponent will be required to apply to the Biodiversity Conservation Division of the Department of Planning, Infrastructure and Environment for an Aboriginal Heritage Impact Permit (AHIP) in accordance with the *National Parks and Wildlife Act 1974* to allow impacts to the identified Aboriginal objects. Any such application will require the completion of an Aboriginal cultural heritage assessment in accordance with relevant guidelines and codes of practice.
  - If impacts are required within the area of low-moderate archaeological potential, further assessment should be undertaken, potentially including the completion of archaeological test excavations in accordance with the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b).

- Activities may proceed in the remainder of the project area without any further Aboriginal cultural heritage or archaeological investigation provided that the impacts and extent of the proposed works are consistent with those discussed in this report. Works should, however, proceed with caution. All persons that are involved in ground disturbing works should be made aware that it is an offence under Section 86 of the NPW Act to harm or desecrate an Aboriginal object unless that harm or desecration is the subject of an approved Aboriginal Heritage Impact Permit (AHIP).

We trust this information meets with your current requirements. Please do not hesitate to contact me on 02 4950 5322 should you require clarification or further information.

Yours sincerely



Nicola Roche  
Manager, Cultural Heritage

## 9.0 References

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accessed 17 June 2019

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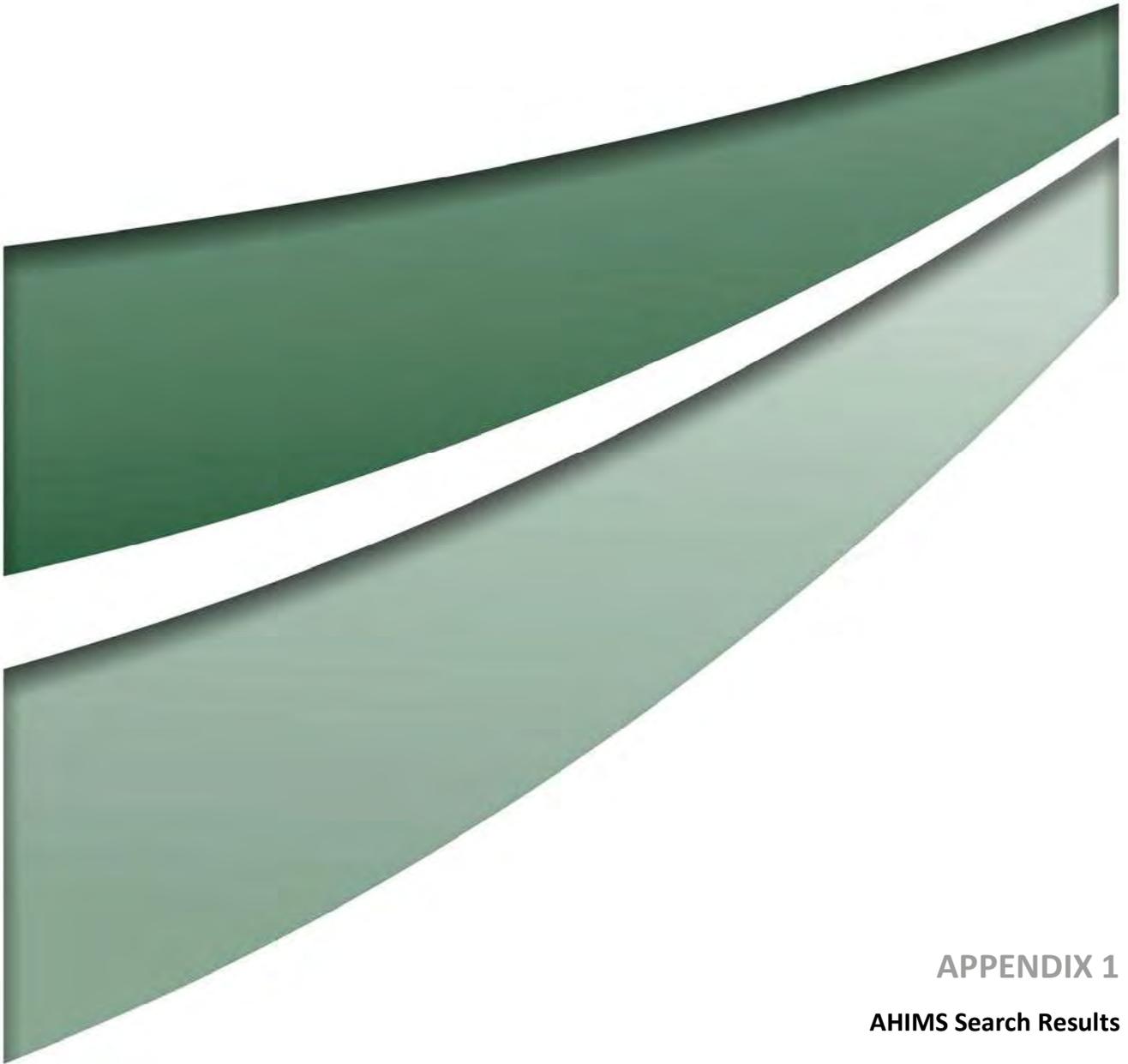
National Parks and Wildlife Act, 1997

National Parks and Wildlife Regulation, 2009

Office of Environment and Heritage, 2011, *Guide to investigating, assessing, and reporting on Aboriginal Cultural Heritage in NSW*.

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Umwelt (Australia) Pty Ltd, 2016, *Aboriginal Cultural Heritage and Archaeological Assessment of Sugarloaf Range Road*



**APPENDIX 1**  
**AHIMS Search Results**

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
38-4-0102	Palmers Creek PC1	AGD	56	362500	6347750	Open site	Valid	Grinding Groove : -, Water Hole : -	Axe Grinding Groove,Water Hole/Well	102458
<b><u>Contact</u></b>										
38-4-1007	Palmers Creek 1	GDA	56	362909	6349347	Open site	Valid	Grinding Groove : -		
<b><u>Contact</u></b> Searle										
38-4-1693	Palmers Creek Scarred Tree 1	GDA	56	362845	6349217	Open site	Valid	Modified Tree (Carved or Scarred) :		
<b><u>Contact</u></b>										
<b><u>Recorders</u></b> Ms.Amanda Reynolds										
38-4-1694	Palmers Creek IF5	GDA	56	362719	6349367	Open site	Valid	Artefact : -		
<b><u>Contact</u></b> Ms.Amanda Reynolds										
38-4-1949	Palmers Creek IF6	GDA	56	362907	6349226	Open site	Valid	Artefact : -		
<b><u>Contact</u></b> Umwelt (Australia) Pty Limited,Mr-Kirwan Williams										
<b><u>Recorders</u></b> Ms.Amanda Reynolds										

## **Attachment 3 – Traffic Impact Assessment**



# TRAFFIC IMPACT ASSESSMENT

**PLANNING PROPOSAL  
ADDITIONS TO LAKE MACQUARIE MEMORIAL PARK**

**LOT 1 IN DP 833614  
405 CESSNOCK ROAD, RYHOPE**

**PREPARED FOR: KDC PLANNING DEVELOPMENT PROPERTY**

**AUGUST 2019**

19/074

**TRAFFIC & PARKING ASSESSMENT  
KDC PLANNING DEVELOPMENT PROPERTY  
PLANNING PROPOSAL  
ADDITIONS TO LAKE MACQUARIE MEMORIAL PARK**

**LOT 1 IN DP 833614  
405 CESSNOCK ROADRYHOPE**

Intersect Traffic Pty Ltd (ABN: 43 112 606 952)

**Address:**

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**Contact:**

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Email: jeff@intersecttraffic.com.au

## QUALITY ASSURANCE

This document has been prepared, checked and released in accordance with the Quality Control Standards established by Intersect Traffic Pty Ltd.

Issue	Date	Description	By
A	28/06/19	Draft	PA
B	15/07/19	Edit	JG
C	01/08/19	Final Proof	JG
D	01/08/19	Approved	JG

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This document has been authorised by

  
Date 1<sup>st</sup> August 2019



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# CONTENTS

<b>1.0</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>2.0</b>	<b>SITE DESCRIPTION</b>	<b>2</b>
<b>3.0</b>	<b>EXISTING ROAD NETWORK</b>	<b>4</b>
3.1	CESSNOCK ROAD	4
3.2	COZZIE LANE	4
<b>4.0</b>	<b>ROAD NETWORK IMPROVEMENTS</b>	<b>5</b>
<b>5.0</b>	<b>TRAFFIC VOLUMES</b>	<b>5</b>
<b>6.0</b>	<b>ROAD CAPACITY</b>	<b>6</b>
<b>7.0</b>	<b>ALTERNATIVE TRANSPORT MODES</b>	<b>8</b>
<b>8.0</b>	<b>DEVELOPMENT PROPOSAL</b>	<b>9</b>
<b>9.0</b>	<b>TRAFFIC GENERATION</b>	<b>9</b>
<b>10.0</b>	<b>TRIP DISTRIBUTION</b>	<b>10</b>
<b>11.0</b>	<b>TRAFFIC IMPACTS OF DEVELOPMENT</b>	<b>11</b>
11.1	ROAD NETWORK CAPACITY	11
11.2	INTERSECTION CAPACITY	11
11.3	ACCESS	13
11.4	OFF-STREET PARKING	14
<b>12.0</b>	<b>PEDESTRIAN FACILITIES</b>	<b>14</b>
<b>13.0</b>	<b>ALTERNATE TRANSPORT MODE FACILITIES</b>	<b>14</b>
<b>14.0</b>	<b>CONCLUSIONS</b>	<b>15</b>
<b>15.0</b>	<b>RECOMMENDATION</b>	<b>15</b>

# ATTACHMENTS

<b>ATTACHMENT A</b>	<b>DEVELOPMENT PLANS</b>
<b>ATTACHMENT B</b>	<b>TRAFFIC COUNT SHEETS</b>
<b>ATTACHMENT C</b>	<b>SIDRA MOVEMENT SUMMARY TABLES</b>

# FIGURES

<i>Figure 1 – Site Location</i>	2
<i>Figure 2 – Bus Routes near the site</i>	8
<i>Figure 3 – Development Traffic Distribution</i>	10

# PHOTOGRAPHS

<i>Photograph 1 – Existing site</i>	3
<i>Photograph 2 – Existing vehicular access</i>	3
<i>Photograph 3 – Cessnock Road near the site</i>	4
<i>Photograph 4 – Cozzie Lane near the site</i>	5

# TABLES

<i>Table 1 – Mid-block 2019 and 2029 traffic volumes</i>	6
<i>Table 2 - Road Capacity Assessment</i>	11
<i>Table 3 – Cessnock Road / Access Road T-intersection – Sidra Results Summary</i>	12



## 1.0 INTRODUCTION

Intersect Traffic Pty Ltd was engaged by KDC Planning Development Property on behalf of APP Corporation to prepare a traffic impact assessment report for a planning proposal of part of Lot 1 in DP 833614, 405 Cessnock Road, Ryhope. The property is known as InvoCare Pty Ltd's - Lake Macquarie Memorial Park Cemetery and Crematorium. The planning proposal is for a rezoning of the eastern section of the above lot which is currently zoned Environmental Management land. It is proposed to rezone the land to rural landscape to allow the expansion of the existing funeral services and facilities to accommodate additional lawn burials, headstones burial sites, monuments, burial estates, cremation memorials and gardens. The proposal is a continuation of the existing business and does not include additional large chapel funeral services. Roadworks and landscaping will occur with associated on-site car parking as the need for expansion arises with the on-site car parking required for convenient access to the new burial sites and gardens.

The proposed site development will continue to utilise the existing vehicular crossing that has been designed to cater for minor to major funerals with vehicles accessing the site and the existing internal roads to ensure suitable manoeuvrability through the site and forward entry and exit from the site for all vehicles. The proposed development concept plan is shown in **Attachment A**.

This report which is required to support a Planning Proposal to Lake Macquarie City Council as the consent authority, presents the findings of the traffic and parking assessment and includes the following;

1. An outline of the existing situation near the site.
2. An assessment of the traffic impacts of the future development including the predicted traffic generation and its impact on existing road and intersection capacities.
3. Reviews parking, public transport, pedestrian and cycle way requirements for the future development, including assessment against Council, Australian Standards and the NSW Roads and Maritime Services (RMS) standards as required.
4. Presentation of conclusions and recommendations.

## 2.0 SITE DESCRIPTION

The subject site is located near the western boundary of the Lake Macquarie City Council area. The M1 Motorway, Freemans Waterhole and Cessnock are approximately 0.5, 4 and 30 kilometres, respectively northwest of the site and Awaba and Toronto are approximately 3.5 and 8 kilometres, respectively east of the site. The northern boundary of the property adjoins Cessnock Road and Cozzie Lane whilst its eastern, southern and western boundaries adjoin heavily vegetated rural land. The western section of the site contains many structures and memorial sites related to the existing funeral and crematorium development. The eastern section of the site for which the planning proposal relates, is predominately vacant land. The planning proposal site is shown in the context of the surrounding roads, development and land in **Figure 1** below.



**Figure 1 – Site Location**

The planning proposal site contains the following property descriptors:

- ◆ Part Lot 1 in DP 833614;
- ◆ Postal address of 405 Cessnock Road, Ryhope;
- ◆ Eastern site area of approximately 8.5 ha (total site approximately 26 ha); and
- ◆ Land zoning of E3 – Environmental Management in accordance with Lake Macquarie LEP (2014).

Access to the entire site is via an urban style sealed median separated vehicular access adjacent to the Cessnock Road and Cozzie Lane which provides access to all buildings, memorials, etc via internal access roads. **Photographs 1 & 2** below shows some of the section of land, predominately cleared, proposed for rezoning and the existing vehicular access currently used for the entire site.



*Photograph 1 – Site conditions*



*Photograph 2 – Existing vehicular access*

## 3.0 EXISTING ROAD NETWORK

### 3.1 Cessnock Road

Cessnock Road is a major transport route distributing traffic to and from the M1 Motorway, Freemans Waterhole and Cessnock to the northwest of the site and to outer western urban suburbs of Lake Macquarie east of the site. It connects the Coalfields area to Lake Macquarie. It is a classified main road (MR 220) and serves as a sub-arterial road. Therefore under a functional road hierarchy it is under the care and control of Lake Macquarie City Council with assistance from the NSW Roads and Maritime Services (RMS).

Adjacent to the site, Cessnock Road is a two-lane two-way sealed rural road with 3.3 to 3.5 metre travel lanes and sealed shoulders / cycleway lanes varying from 1.2 metre to 2.0 metres in width except where widening occurs at intersections. It has an 80 km/h speed zoning near the site and at the time of inspection Cessnock Road was in good condition. **Photograph 3** shows Cessnock Road east of and adjacent to the existing access to the site.



**Photograph 3 – Cessnock Road near the site**

### 3.2 Cozzie Lane

Cozzie Lane is a 150-metre-long road providing access to rural properties along its length. It performs a local road role and therefore, under a road hierarchy, it is under the care and control of Lake Macquarie City Council. Cozzie Lane runs parallel to the western end of the site frontage and, at its eastern end, connects to the site Access Road at a T-intersection. (The Access Road is a two-way median separated urban road that forms a T-intersection with Cessnock Road and a T-intersection with Cozzie Lane.) Cozzie Lane is a two-lane two-way sealed urban road with a sealed width approximately 6 metres wide with gravel / grassed shoulders of various widths. A 50 km/h speed limit applies to this section of road and at the time of inspection it was observed to be in good condition. **Photograph 4** shows Cozzie Lane west of the Access Road to the site.



*Photograph 4 – Cozzie Lane near the site*

## 4.0 ROAD NETWORK IMPROVEMENTS

There are no known road upgrades near the site that will increase the capacity of the local road network. Improvements to the local road network may be undertaken in the future in line with Lake Macquarie City Council's and NSW Roads and Maritime Services Works Programmes.

## 5.0 TRAFFIC VOLUMES

To determine current traffic volumes on the local road network, Intersect Traffic carried out manual traffic counts during the morning peak period at the Cessnock Road / Access Road give way-controlled T-intersection and the Access Road / Cozzie Lane T-intersection. These counts were carried out during a funeral service peak hour time of 9.30am – 10.30am on Wednesday 10<sup>th</sup> July 2019 AM. The traffic count results are provided in **Attachment B** and the mid-block peak hour volumes were as follows:

- ◆ Cessnock Road east of Access Road – 447 vph AM;
- ◆ Cessnock Road west of Access Road – 452 vph AM;
- ◆ Access Road north of Cozzie Lane – 40 vph AM;
- ◆ Access Road south of Cozzie Lane – 29 vph AM; and
- ◆ Cozzie Lane west of Access Road – 11 vph AM.

These mid-block traffic volumes would not represent the maximum peak hour traffic volumes on Cessnock Road which would likely occur 8.00am to 9.00am and would be in the order of 20% greater than that counted. The Access Road peak traffic would be in the order of 50 vph in and 50 vph out and in the case of overlapping highest attendance funeral ceremonies this would equate to 75 vph in and 75 vph out. It is also assumed that the PM peak and AM peak traffic are the same for the purposes of the assessment. To calculate the predicted 2029 traffic figures the calculated 2019 peak traffic volumes on Cessnock Road and Cozzie Lane have been increased using an annual growth rate factor of 2.0% per annum. The predicted 2019 and 2029 worst case mid-block traffic volumes based on current development only are as shown in **Table 1** below.

**Table 1 – Mid-block 2019 and 2029 traffic volumes**

Road	Section	2019		2029	
		AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)
Cessnock Road	East of Access Road	526	526	641	641
Cessnock Road	West of Access Road	546	546	666	666
Access Road	North of Cozzie Lane	161	161	163	163
Access Road	South of Cozzie Lane	150	150	150	150
Cozzie Lane	West of Access Road	11	11	13	13

## 6.0 ROAD CAPACITY

The capacity of rural roads is generally determined by the capacity of intersections. However, Table 4.5 of the RMS's *Guide to Traffic Generating Developments* provides some guidance on mid-block capacities for rural roads and likely levels of service. The table is reproduced below.

**Table 4.5**  
peak hour flow on two-lane rural roads (veh/hr)  
(Design speed of 100km/hr)

Terrain	Level of Service	Percent of Heavy Vehicles			
		0	5	10	15
Level	B	630	590	560	530
	C	1030	970	920	870
	D	1630	1550	1480	1410
	E	2630	2500	2390	2290
Rolling	B	500	420	360	310
	C	920	760	650	570
	D	1370	1140	970	700
	E	2420	2000	1720	1510
Mountainous	B	340	230	180	150
	C	600	410	320	260
	D	1050	680	500	400
	E	2160	1400	1040	820

The data for Table 4.5 assumes the following criteria:

- *terrain level* with 20% no overtaking.
- *rolling* with 40% no overtaking.
- *mountainous* with 60% no overtaking.
- 3.7 m traffic lane width with side clearances of at least 2m.
- 60/40 directional split of traffic.

The criteria for Cessnock Road are a level terrain, 5% heavy vehicles and 80 km/h speed zoning. A desirable level of service on a rural road is generally considered to be a level of service (LoS) C or better. Noting a LoS D on a two-lane rural road occurs when mid-block traffic 80 km/h speed zoning volumes exceed 1,550 vph for a 100 km/h speed zoning. A reduction factor of 0.9 is applied for an 80 km/h speed zoning and the two-way two-lane mid-block traffic volume threshold for a LoS C is 1,395 vph. Therefore, it is considered that Cessnock Road in the vicinity of the site, as a two-way rural road has a mid-block road capacity of 1,395 vtph.

Cozzie Lane and the Access Road are considered as urban roads for the purposes of this assessment due to their speed zoning and / or construction type. The capacity of urban roads is generally determined by the capacity of its intersections. However Table 4.3 of the *RTA's Guide to Traffic Generating Developments* provides some guidance on mid block capacities for urban roads and likely levels of service. These tables are reproduced below.

**Table 4.3**  
Typical mid-block capacities for urban roads with interrupted flow

Type of Road	One-Way Mid-block Lane Capacity (pcu/hr)	
Median or inner lane:	Divided Road	1,000
	Undivided Road	900
Outer or kerb lane:	With Adjacent Parking Lane	900
	Clearway Conditions	900
	Occasional Parked Cars	600
4 lane undivided:	Occasional Parked Cars	1,500
	Clearway Conditions	1,800
4 lane divided:	Clearway Conditions	1,900

Source: - *RTA's Guide to Traffic Generating Developments (2002)*.

Noting the local road network as a 2-lane undivided road from **Table 4.3** above both Cozzie Lane and the Access Road have a mid-block two-way road capacity of 1,800 vtp.

However, as local roads with predominately residential dwellings along their length the Environmental Capacity of the road as a measure of acceptable residential amenity within the street also needs to be considered for Cozzie Lane. The environmental road capacity thresholds accepted by NSW Roads and Maritime Service (NSW RMS) are provided within *Table 4.6* of the *RTA's Guide to Traffic Generating Developments (2002)* as reproduced below.

**Table 4.6**  
Environmental capacity performance standards on residential streets

Road class	Road type	Maximum Speed (km/hr)	Maximum peak hour volume (veh/hr)
Local	Access way	25	100
	Street	40	200 environmental goal 300 maximum
Collector	Street	50	300 environmental goal 500 maximum

Note: Maximum speed relates to the appropriate design maximum speeds in new residential developments. In existing areas maximum speed relates to 85th percentile speed.

Source: - *RTA's Guide to Traffic Generating Developments (2002)*.

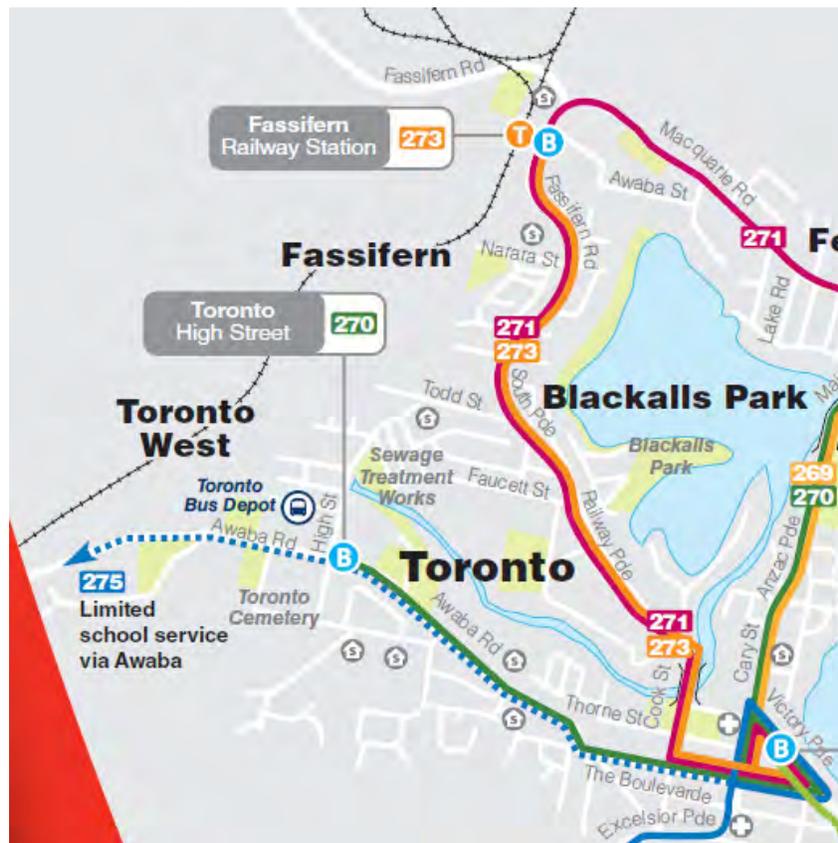
The environmental capacity of a local road is therefore determined from the above table as 300 vtp. A maximum capacity of 300 vtp has been adopted in this assessment for Cozzie Lane.

Therefore, in the vicinity of the site it is considered that Cessnock Road, as two lane two way rural road has a two-way mid-block road capacity of 1,375 vtp, the Access Road as a two lane two way urban road has a two-way mid-block road capacity of 1,800 vtp and Cozzie Lane as a two lane two way urban road has an environmental mid-block road capacity of 300 vtp.

From the traffic data collected in **Section 5** and noting the likely two-way mid-block technical road capacities of Cessnock Road, the Access Road and Cozzie Lane are in excess of the existing traffic volumes it is considered that all roads near the development site are operating within their technical capacities and have scope to cater for additional traffic generated by new development.

## 7.0 ALTERNATIVE TRANSPORT MODES

The nearest bus services operating to the site is provided by Hunter Valley public bus services. However the closest public bus service (route 270) ends 4.5 kilometres southeast of the site. The nearest train station, Awaba Station (south west of Toronto West) is approximately 3.5 kilometres southeast of the site. These public transport services are not conveniently located for servicing the site however could provide a location for travellers who wish to be picked up by others travelling by car to the funeral / memorial service site. An extract of the Hunter Valley bus route map described above is shown in **Figure 2** below.



**Figure 2 – Bus Routes near the site**

There are no constructed hardstand footpaths in Cessnock Road or Cozzie Lane near the development as can be seen in previous **Photographs 3 & 4** however there are grassed verges between the kerb & gutter and the boundary fences of properties for use by pedestrians. Pedestrian activity and demand in the area is non-existent, as was noted during inspections and whilst the traffic counts were carried out.

There are no designated on or off-road cycleways in Cessnock Road or Cozzie Lane. However, the sealed shoulders on either side of Cessnock Road (varying in width between 1.2 and 2.0 metres) east and west of the site may be used by cyclists for site access. This would allow cyclists on Cessnock Road to connect to the M1 Motorway and Freemans Waterhole to the west and to Toronto to the east of the site and provide access for the experienced riders. No cyclists were observed whilst undertaking the site inspections or traffic counts for this assessment. Previous **Photograph 3** shows the cycle friendly shoulders on Cessnock Road near the site.

## 8.0 DEVELOPMENT PROPOSAL

The existing development involves the operation of a crematorium on the site including an administration building, a memorial service building and a post service gathering building with associated on-site car parking. The existing possible chapel memorial service times are 9am, 10am, 11am, 12noon, 1.00 pm, 2.00pm and 3.00pm, however this may occur once per year. Services range from 30 minutes to a maximum of 2 hours duration. The usual regular maximum services occur at 10am, 12noon, 1.00 pm and 3.00pm which occurs approximately 30 times per year, with a regular range of attendees from 30 to 150 persons per service.

The planning proposal is for a rezoning of the eastern section of the subject site which is currently zoned Environmental Management land to a rural landscape zoning. This will allow the expansion of grave site memorial services (small gatherings) and an expansion of a range of commemorative burial sites. The proposed development concept plan is shown in **Attachment A**.

Specifically, the future development will include the addition of the following elements:

- ◆ Burials;
- ◆ Headstone burial sites;
- ◆ Monuments;
- ◆ Burial estates;
- ◆ Cremation memorials;
- ◆ Landscape / garden areas;
- ◆ Extension of internal roadways;
- ◆ Footway areas; and
- ◆ Parking areas.

Access for the expansion works will be via the existing sealed Access Road that intersects with Cessnock Road and runs past / intersects with Cozzie Lane near Cessnock Road and then via the existing internal roads and extension of these internal roads.

## 9.0 TRAFFIC GENERATION

The *RTA's Guide to Traffic Generating Development's* provides specific advice on the traffic generation potential of various land uses. However, the guide does not provide suitable rates for a crematorium facility and funeral home. Details of the business operations have been provided and a first principles method is proposed to determine traffic generation.

The relevant worst-case daily data provided for the additional aspects of development is:

- ◆ Employment for an additional 2 staff, 1 permanent staff and 1 casual staff or contractor;
- ◆ Up to a maximum of 20 people attending a memorial (grave or crematorium) site entering / exiting the site over a 1-hour period (say 100 throughout the day); and
- ◆ This includes a celebrant entering / exiting the site.

Therefore, the following conservative traffic generation rates assumed from this data have been devised for this assessment:

*Daily vehicle trips = all staff x 2.2 + attendees / 3 per vehicle x 5 memorial visits per day*  
*Peak hour vehicle trips = attendees / 3 (same as for church services)*

Therefore, the maximum total in and out additional peak hour and daily traffic volume generation from the development adopted in this assessment (rounded up) can be calculated as follows noting that this would be a rare occurrence:

**Daily Traffic**

$$\begin{aligned} \text{Traffic Generation} &= 2 \times 2.2 + 100 / 3 \times 2 \\ &= 4.4 + 66.7 \text{ vtpd} \\ &= 71.1 \text{ vtpd say } \mathbf{72 \text{ vtpd}} \end{aligned}$$

**AM or PM Peak Hour**

$$\begin{aligned} \text{Traffic Generation (single ceremony)} &= 20 / 3 \times 2 \\ &= 14 \text{ vtpd} \end{aligned}$$

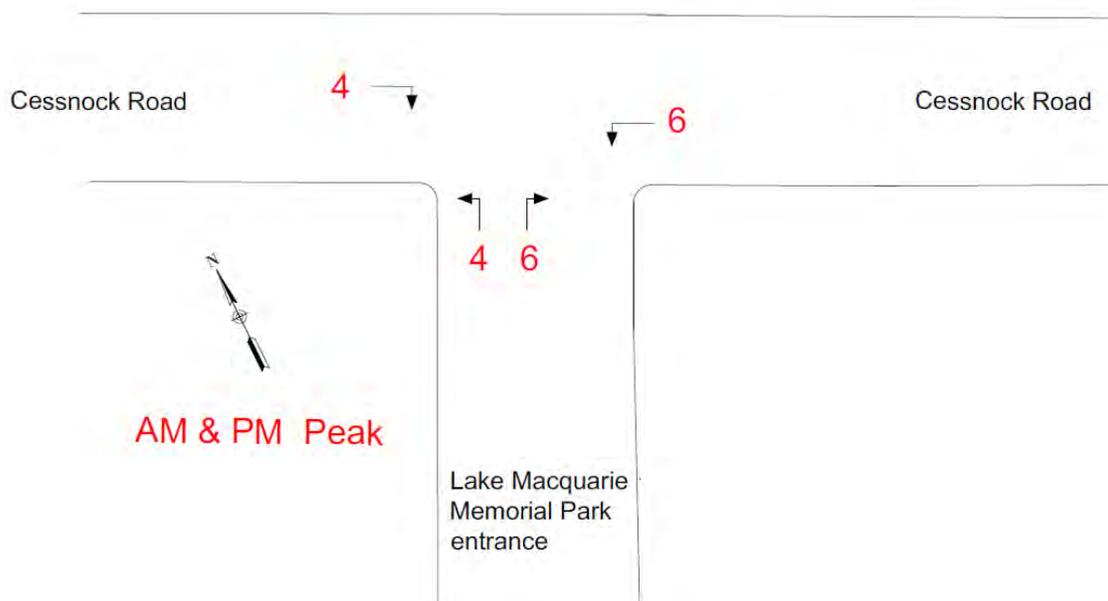
For overlapping ceremonies this will be times 1.5 = **20 vtpd**

## 10.0 TRIP DISTRIBUTION

Before considering the traffic impacts of the development, the traffic generated by the development needs to be distributed onto the local road network. Whilst some traffic may choose other routes this is considered insignificant to the analysis. Assumptions need to be made regarding origins and destinations of trips and the nature of the trips to and from the site. Assumptions of the peak hour traffic made in this assessment are as follows:

- ◆ All additional traffic will enter and exit the site from Cessnock Road / Access Road intersection and the existing access road;
- ◆ Traffic to and from the site will have origin / destinations east / west 60:40 via Cessnock Road;
- ◆ Visitor stays for the scenario are generally approximately 1 hour therefore each visitor generally generates an inbound or an outbound trip in the peak hour; and
- ◆ Where there is an overlap of memorial site ceremonies the inbound traffic and outbound traffic during the peak hour will be 1.5 times that of one of the ceremonies.

The resulting trip distribution onto the local road network is therefore likely to be as shown below in **Figure 3**:



**Figure 3 – Development Traffic Distribution**

# 11.0 TRAFFIC IMPACTS OF DEVELOPMENT

The traffic impacts that the development will have on the local road network includes;

- ◆ The impact of the additional traffic generated by the development on the capacity of the road network;
- ◆ The road safety issues associated with the proposed access to the development; and
- ◆ The parking demand generated by the development.

## 11.1 Road Network Capacity

It has previously been shown in **Section 6** of this report that the local road network is currently operating well within its technical mid-block capacity.

Lake Macquarie Memorial Park is likely to generate the following additional traffic (maximum / overlap situation) on the local road network based on the trip distributions shown in **Figure 3**:

- ◆ Cessnock Road – east of Cozzie Lane 12 vtpm AM peak and PM peak.
- ◆ Cessnock Road – west of Cozzie Lane 8 vtpm AM peak and PM peak.
- ◆ Access Road – north of Cozzie Lane 20 vtpm AM and PM peak.
- ◆ Access Road – south of Cozzie Lane 20 vtpm AM and PM peak.
- ◆ Cozzie Lane – west of Access Road 0 vtpm AM and PM peak.

The addition of this traffic onto the 2019 traffic volumes determined in **Section 5** will not result in the capacity thresholds for the local road network determined in **Section 6** to be reached. Even with the 2029 traffic volumes, determined by increasing the 2019 volumes by 2.0% per annum traffic growth over a ten-year period, these road capacity thresholds are not reached. This is demonstrated in **Table 2** below.

**Table 2 - Road Capacity Assessment**

Road	Section	2019 + development		2029 + development		Capacity (vtpm)	Development Traffic	
		AM (vtpm)	PM (vtpm)	AM (vtpm)	PM (vtpm)		AM (vtpm)	PM (vtpm)
Cessnock Road	East of Access Road	538	538	653	653	1395	12	12
Cessnock Road	West of Access Road	554	554	674	674	1395	8	8
Access Road	North of Cozzie Lane	181	181	183	183	1800	20	20
Access Road	South of Cozzie Lane	170	170	170	170	1800	20	20
Cozzie Lane	West of Access Road	11	11	13	13	300	0	0

Therefore, in adding the peak development traffic generation volumes determined above to the various existing and likely future peak road traffic volumes in **Table 2** it can be concluded that the local and state road network has sufficient spare capacity to cater for the increase in traffic generated by the proposed rezoning and future development will not adversely impact on the two-way mid-block traffic flows on the local road network.

## 11.2 Intersection Capacity

The main intersection likely to be impacted by the development is the Cessnock Road / Access Road T-intersection. The Sidra 7.0 intersection modelling software, a micro-analytical program identifies “Level of Service” (LoS) criteria for intersection analysis which range from LoS A to LoS F. Assessment is then based on the LoS requirements of the RMS shown below.

**Table 4.2**  
Level of service criteria for intersections

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode

Source: - RTA's Guide to Traffic Generating Developments (2002).

The intersection was modelled using the traffic count data recorded by Intersect Traffic Pty Ltd, July 2019 with traffic on Cessnock Road increased by 20% and the determined Access Road traffic as shown in **Table 1 of Section 5** and utilising the development traffic worst case trip distributions shown in **Figure 3**. 2019 models were developed with and without development traffic and 2029 models were also developed with a background traffic growth of 2% per annum. The PM models are assumed to be the same as the AM models. The full Sidra movement summary tables generated by the models are provided in **Attachment C**. Summarised results of the modelling for the “all vehicles” case with worst leg case Level of Service have been shown below in **Table 3**.

**Table 3 – Cessnock Road / Access Road T-intersection – Sidra Results Summary**

Model	Degree of Saturation (v/c)	Average Delay (s)	Worst Leg Level of Service	95 % back of queue length (cars)
2019 AM/PM + development	0.153	2.5	B	0.5
2029 AM/PM + development	0.209	2.8	B	0.8

Traffic volumes at the Access Road / Cozzie Lane T-intersection are in the order of a maximum of 170 vtpd Access Road and 13 vtpd Cozzie Lane and any internal roads would be a maximum of 170 vtpd at any internal intersection and therefore all will be below the thresholds contained in the following table (see below) sourced from Austroads *Guide to Traffic Management – Part 6 – Intersections, Interchanges & Crossings (2010)* for which the Guide states a detailed analysis to demonstrate adequate capacity is available is unlikely to be necessary as uninterrupted flow conditions would prevail. As such uninterrupted flow conditions will continue to prevail at the access road / Cozzie Lane intersection.

Major road type <sup>1</sup>	Major road flow (vph) <sup>2</sup>	Minor road flow (vph) <sup>3</sup>
Two-lane	400	250
	500	200
	650	100
Four-lane	1000	100
	1500	50
	2000	25

Source: - Austroads Guide to Traffic Management – Part 6 – Intersections, Interchanges & Crossings (2010)

In relation to intersections east and west of the development the impact of the 8 vph west of the development access and 12 vph east of the development access is considered insignificant as these figures will be no more than 2% of traffic at any intersection. As the hourly and daily peak hourly traffic seasonal variation is usually 10% of counted traffic it is reasonable to assume that this increase will be unnoticed and not impact on other intersections. It can therefore be assumed that all intersections on the local road network will not be significantly impacted upon by the proposed rezoning (development) planning proposal.

### 11.3 Access

Any new car parking areas for the development within the rezoning area will be accessed via the existing internal roads which in turn connect to the high level existing combined entry / exit median separated vehicular crossing at the Access Road / Cessnock Road T-intersection. There are no new additional vehicular accesses to the public road system for this proposal.

Under *Austroads Guide to Road Design Part 4A – Unsignalised and Signalised Intersections (2009)* an intersection with an 80 km/h speed zone should provide the following sight distances:

- ◆ Safe Intersection Sight Distance (SISD) – 185 metres desirable or 170 metres minimum; and
- ◆ Approach Sight Distance (ASD) – 115 metres desirable or 105 metres minimum.

By observation on site the available sight distance at the Access Road / Cessnock Road intersection would exceed 300 metres. Therefore, the location of the existing access is considered suitable as a public road intersection in accordance with *Austroads Guide to Road Design Part 4A – Unsignalised and Signalised Intersections (2009)* as constructed.

Similarly, for the Cozzie Lane / Access Road T-intersection a 50 km/h speed zone the *Austroads Guide to Road Design Part 4A – Unsignalised and Signalised Intersections (2009)* requires the following sight distances:

- ◆ Safe Intersection Sight Distance (SISD) – 100 metres desirable or 90 metres minimum; and
- ◆ Approach Sight Distance (ASD) – 55 metres desirable or 50 metres minimum OR

As a Category 5 access facility the access is suitable to handle greater than 600 car parks on site. On-site car parking will remain well below 600 car parks even with the proposed planning proposal therefore the existing access is suitable to handle the likely traffic from the site.

The access as constructed is therefore considered suitable and compliant to Austroads and Lake Macquarie City Council standards.

## 11.4 Off-Street Parking

On-site parking and manoeuvrability on the development site should comply with Australian Standard *AS2890.1-2004 Parking facilities – Off-street car parking* and Lake Macquarie City Council's *DCP (2014) Revision 20 Part 2 – Development in Rural Zones*. However as mainly burial sites within the planning proposal area the DCP does not specifically provide a rate for this use. Based on the traffic generation calculation it is considered an additional 20 car spaces may be warranted for each burial and these will be provided adjacent to the burial areas when developed. Assessment of car parking will therefore be also required at DA stage for the new development within the planning proposal.

At this stage the development does not designate parking however ample area is available for the provision of car parking on the site. It is considered that development of the site for funeral purposes following rezoning of the land would comply with the Lake Macquarie DCP 2014 requirements as there is ample area available for this purpose.

It is therefore concluded that satisfactory on-site car parking supply and design as well as the internal road system can be provided for the development. In connecting to the existing internal road system it would encourage forward entry and exit from the site as convenient turning movements within the car park could be achieved and would comply with Australian Standard *AS2890.1 – 2004 Parking facilities – Part 1 Off street car parking* and Lake Macquarie City Council's *DCP (2014)*.

## 12.0 PEDESTRIAN FACILITIES

The proposed development is not likely to generate any significant external pedestrian traffic. Therefore, the existing external pedestrian facilities are considered adequate for the level of additional demand generated by this development and no additional infrastructure is considered warranted. Marked internal pedestrian linkages are provided facilitating safe access and travel throughout the carpark to and from the development buildings.

## 13.0 ALTERNATE TRANSPORT MODE FACILITIES

The proposed development is not expected to generate significant increased patronage of the existing public transport system (buses). No additional public transport infrastructure or services is considered warranted resulting from this development. The development may generate additional use of bicycles however it is very unlikely to generate any significant additional bicycle traffic therefore there is no nexus for the provision cycle ways near the site.



## 14.0 CONCLUSIONS

This traffic impact assessment for a planning proposal for the eastern section of Lot 1 in DP 833614 - 405 Cessnock Road, Ryhope to allow the expansion of the existing funeral services and facilities, has determined the following:

- ◆ Existing traffic volumes on the road network are below the two-way mid-block capacity of the existing road network indicating the existing local and state road network has spare capacity to cater for development in the area.
- ◆ It is expected that the maximum additional traffic generated by the development will be in the order of 20 vtpm in the AM and the PM peak.
- ◆ The local and state road network has sufficient spare mid-block capacity to cater for the additional development traffic without adversely impacting on current mid-block levels of service (LOS) experienced by motorists on the local and state road network as well as for ten years background traffic growth at 2 % per annum.
- ◆ Sidra modelling of the Cessnock Road / Access Road T-intersection indicates that the intersection will function satisfactorily post development in 2019 and in 2029.
- ◆ The impact of the development on the wider road network will be insignificant and will not result in any loss of LoS at any intersection.
- ◆ Overall the development will not adversely impact on the efficiency and effectiveness of the state and local road network.
- ◆ The proposed vehicular access arrangements to the on-site car parking areas within the site comply with Lake Macquarie DCP (2014) and Australian Standard requirements and are deemed suitably safe.
- ◆ The development would require approximately 20 on-site car spaces at each new burial site which can easily be provided on the available land area, and therefore could comply with the Lake Macquarie DCP (2014). The proposed on-site parking layout could comply with Australian Standard *AS2890.1 – 2004 Parking facilities – Part 1 Off-street car parking* and Lake Macquarie DCP (2014).
- ◆ The internal road system encourages forward entry and exit from the site and provides good circulation for traffic on its internal road system for all vehicle movements required on the site particularly for visitors to the site.
- ◆ The proposed development will not generate any significant external pedestrian or cycle traffic therefore no nexus exists for the provision of additional external pedestrian or bicycle infrastructure.
- ◆ The proposed development is not expected to generate significant increased patronage of the existing public transport system (buses). Changes to the existing public transport system or additional infrastructure are therefore not required.

## 15.0 RECOMMENDATION

Having carried out this traffic impact assessment for a planning proposal of the eastern section of Lot 1 in DP 833614 - 405 Cessnock Road, Ryhope to allow an expansion of the existing funeral services and facilities, it is recommended that the proposal can be supported from a traffic perspective as it will not adversely impact on the local and state road network and complies with all relevant Lake Macquarie City Council, Australian Standard and NSW Roads and Maritime Services (RMS) requirements.



**JR Garry BE (Civil), Masters of Traffic**  
**Director**  
**Intersect Traffic Pty Ltd**

# ATTACHMENT A

## Concept Plan



# ATTACHMENT B

## Traffic Count Data

Intersect Traffic Pty Ltd  
PO Box 268  
East Maitland, NSW, 2323  
0423324188

## Turn Count Summary

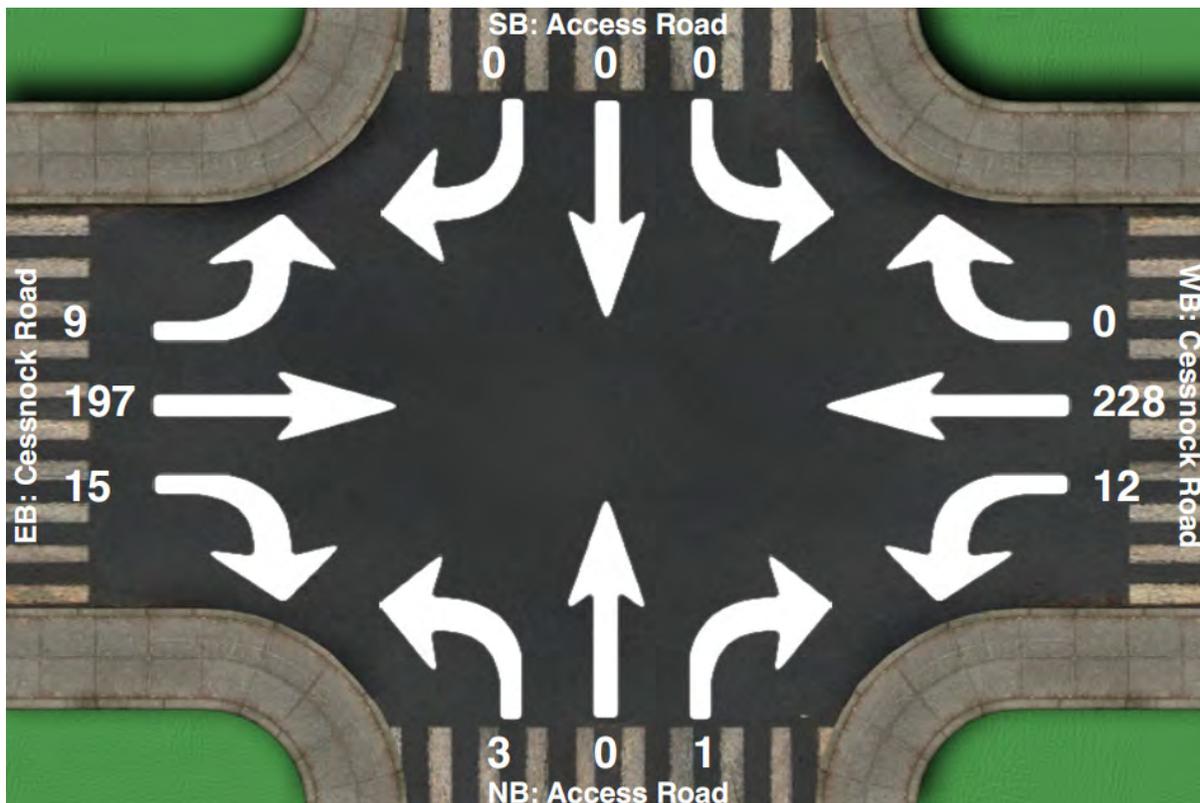
**Location:** Access Road at Cessnock Road, Ryhope  
**GPS Coordinates:** Lat=-32.993496, Lon=151.515873  
**Date:** 2019-07-10  
**Day of week:** Wednesday  
**Weather:** Sunny  
**Analyst:** Peter

### Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
09:30	0	0	0	4	54	0	2	0	0	3	53	8	124
09:45	0	0	0	4	51	0	1	0	1	3	46	5	111
10:00	0	0	0	2	64	0	0	0	0	0	54	0	120
10:15	0	0	0	2	59	0	0	0	0	3	44	2	110

### Intersection Peak Hour

09:30 - 10:30



Correction – NB Access Road left-turn movements total 12 vph (no Cessnock Road left-turn)

# ATTACHMENT C

## Sidra Movement Summary Tables

## MOVEMENT SUMMARY

**STOP** Site: 101 [2019AM +DEV]

Ryhope Rezoning Planning Proposal  
 Cessnock Road / Access Road T-intersection  
 Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Cessnock Road											
21	L2	56	5.0	0.031	7.0	LOS A	0.0	0.0	0.00	0.63	62.7
22	T1	288	5.0	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	79.9
Approach		344	5.0	0.153	1.2	NA	0.0	0.0	0.00	0.10	76.8
NorthWest: Cessnock Road											
28	T1	249	5.0	0.132	0.0	LOS A	0.0	0.0	0.00	0.00	80.0
29	R2	40	5.0	0.041	6.2	LOS A	0.2	1.1	0.41	0.60	50.0
Approach		289	5.0	0.132	0.9	NA	0.2	1.1	0.06	0.08	74.3
SouthWest: Access Road											
30	L2	40	5.0	0.048	9.3	LOS A	0.2	1.2	0.38	0.89	50.4
32	R2	55	5.0	0.143	15.2	LOS B	0.5	3.8	0.64	1.00	46.3
Approach		95	5.0	0.143	12.7	LOS A	0.5	3.8	0.53	0.96	48.0
All Vehicles		728	5.0	0.153	2.5	NA	0.5	3.8	0.09	0.21	70.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: C:\Work Documents\Project Files\2019\19.074 - Ryhope Planning Proposal\Cessnock Rd\_Access Rd T intrn.sip7

## MOVEMENT SUMMARY

**STOP** Site: 101 [2029AM +DEV]

Ryhope Rezoning Planning Proposal  
 Cessnock Road / Access Road T-intersection  
 Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Cessnock Road											
21	L2	65	5.0	0.036	7.0	LOS A	0.0	0.0	0.00	0.63	62.7
22	T1	346	5.0	0.183	0.0	LOS A	0.0	0.0	0.00	0.00	79.9
Approach		412	5.0	0.183	1.1	NA	0.0	0.0	0.00	0.10	76.8
NorthWest: Cessnock Road											
28	T1	299	5.0	0.158	0.0	LOS A	0.0	0.0	0.00	0.00	79.9
29	R2	47	5.0	0.053	6.7	LOS A	0.2	1.5	0.46	0.64	49.6
Approach		346	5.0	0.158	0.9	NA	0.2	1.5	0.06	0.09	74.3
SouthWest: Access Road											
30	L2	47	5.0	0.061	9.8	LOS A	0.2	1.6	0.43	0.91	50.1
32	R2	64	5.0	0.209	18.5	LOS B	0.8	5.6	0.73	1.01	44.4
Approach		112	5.0	0.209	14.8	LOS B	0.8	5.6	0.60	0.97	46.6
All Vehicles		869	5.0	0.209	2.8	NA	0.8	5.6	0.10	0.21	70.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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**Attachment 4 – Hydro-Geology Study for Proposed Lawn Cemetery – Ryhope (1993)**

Prof H G Poulos, BE PhD DSc(Eng) FIEAust FAA  
P G Redman, BE PhD MIEAust  
C P Thorne, BE MEngSc FIEAust  
B C Burman, BE MEngSc PhD FIEAust MAIMM  
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Your Reference

Our Reference **N4514/1-AF ABL:KLW**

Date **27th April 1993**

The Manager,  
Valentine & Dick Architects Pty. Ltd.,  
454 Hunter Street,  
NEWCASTLE N.S.W. 2300

ATTENTION: MR. GORDON LEWINS

Dear Sir,

RE: **HYDRO-GEOLOGY OF THE SITE - PROPOSED LAWN CEMETERY -  
RYHOPE**

This letter presents a summary of the findings of the hydro-geology study carried out on the site as reported in our reference N4514/1-AD in light of the response from the Water Resources Commission.

The subsurface materials on site are generally of low permeability being less than 1mm/day. This indicates that in general the time required for the groundwater to travel across the site is measured in decades. The exception to this would be the spring areas where the soils are locally more permeable. This may be illustrated by the permeability result from BH9 located close to some springs which gave a permeability thirty times larger than the average permeability indicated in the other tests. These springs appear to consist of local permeable zones at the interface of the soil and the underlying conglomerate/sandstone rock. Even in these more permeable zones the permeability is low and the potential to produce a significant quantity of water is low.

Soil and rock engineering  
Environmental technology  
Engineering geology  
Groundwater hydrology  
Foundation engineering  
Mining geotechnics  
Dam engineering  
Computer applications  
Construction control & monitoring



Offices and NATA Registered Laboratories  
Adelaide Albury-Wodonga Alstonville  
Brisbane Canberra Gosford Logan City  
Melbourne Newcastle Penrith Perth  
Sydney Townsville Wollongong  
Bangkok, Kuala Lumpur, Manila

N4514/1-AF  
27th April 1993

-2-



The Water Resources Commission indicated that although it is desirable to install graves above the level of the fluctuating water table graves can be installed below the water table if the soils are adequately impervious to limit the risk of leachate from the exiting site. The contamination potential from cemeteries is generally considered low and due to the low permeability of the subsurface materials on this site the contamination potential would be very low.

If the regional water table does not have to be kept below the grave level then the required subsurface drainage measures can be simplified and reduced.

The very low permeability of the soil and the lack of a groundwater level in BH1 indicates that no special subsurface drainage measures are required in the western half of the site where the soils are underlain by siltstone/claystone rock.

On the eastern half of the site where the soils are underlain by conglomerate/sandstone the drainage measures should consist of a perimeter subsurface drainage installed to a depth of about 2.5m. This drain is intended to intercept uncontaminated groundwater entering the site from uphill through the more permeable transition zone between the soil and the weathered rock and conduct the water to the lowest detention dam on site. The drain may be installed uphill of the highest burial plots on site.

In addition to this a subsurface drain should be installed into each of the recognised spring areas. Such drains should be installed to the depth of the more permeable seepage source zone. It may be possible to incorporate such subsoil drains into the stormwater or road drainage systems.

In conclusion it would appear that the soils on site are generally adequately impervious to allow normal operation of the cemetery. Even though grave excavation will penetrate below the water table the expected inflow during the time the grave is open should be small and at worst could involve de-watering with a sump pump prior to the burial. Inflow into the open excavation due to surface runoff during wet weather would appear to be a greater inconvenience than that imposed by the expected small inflow of groundwater.

The low permeability of the subsurface materials appears to impose a low risk of contaminants leaving the site and polluting downstream water supplies.

N4514/1-AF  
27th April 1993

-3-



If you have any questions regarding this matter please contact Mr. Geoff Padgett or the undersigned.

For and on behalf of  
**COFFEY PARTNERS INTERNATIONAL PTY. LTD.**

*Arthur Love*  
**ARTHUR LOVE**

# IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

As the client of a consulting geotechnical engineer, you should know that site subsurface conditions cause more construction problems than any other factor. ASFE/The Association of Engineering Firms Practicing in the Geosciences offers the following suggestions and observations to help you manage your risks.

## **A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS**

Your geotechnical engineering report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. These factors typically include: the general nature of the structure involved, its size, and configuration; the location of the structure on the site; other improvements, such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask your geotechnical engineer to evaluate how factors that change subsequent to the date of the report may affect the report's recommendations.

Unless your geotechnical engineer indicates otherwise, do not use your geotechnical engineering report:

- when the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or a refrigerated warehouse will be built instead of an unrefrigerated one;
- when the size, elevation, or configuration of the proposed structure is altered;
- when the location or orientation of the proposed structure is modified;
- when there is a change of ownership; or
- for application to an adjacent site.

Geotechnical engineers cannot accept responsibility for problems that may occur if they are not consulted after factors considered in their report's development have changed.

## **SUBSURFACE CONDITIONS CAN CHANGE**

A geotechnical engineering report is based on conditions that existed at the time of subsurface exploration. Do not base construction decisions on a geotechnical engineering report whose adequacy may have been affected by time. Speak with your geotechnical consultant to learn if additional tests are advisable before construction starts. Note, too, that additional tests may be required when subsurface conditions are affected by construction operations at or adjacent to the site, or by natural events such as floods, earthquakes, or ground water fluctuations. Keep your geotechnical consultant apprised of any such events.

## **MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL JUDGMENTS**

Site exploration identifies actual subsurface conditions only at those points where samples are taken. The data were extrapolated by your geotechnical engineer who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your geotechnical engineer can work together to help minimize their impact. Retaining your geotechnical engineer to observe construction can be particularly beneficial in this respect.

## **A REPORT'S RECOMMENDATIONS CAN ONLY BE PRELIMINARY**

The construction recommendations included in your geotechnical engineer's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Because actual subsurface conditions can be discerned only during earthwork, you should retain your geotechnical engineer to observe actual conditions and to finalize recommendations. Only the geotechnical engineer who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations are valid and whether or not the contractor is abiding by applicable recommendations. The geotechnical engineer who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

## **GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS**

Consulting geotechnical engineers prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your geotechnical engineer prepared your report expressly for you and expressly for purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the geotechnical engineer. No party should apply this report for any purpose other than that originally contemplated without first conferring with the geotechnical engineer.

## **GEOENVIRONMENTAL CONCERNS ARE NOT AT ISSUE**

Your geotechnical engineering report is not likely to relate any findings, conclusions, or recommendations

about the potential for hazardous materials existing at the site. The equipment, techniques, and personnel used to perform a geoenvironmental exploration differ substantially from those applied in geotechnical engineering. Contamination can create major risks. If you have no information about the potential for your site being contaminated, you are advised to speak with your geotechnical consultant for information relating to geoenvironmental issues.

#### **A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION**

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical engineering report. To help avoid misinterpretations, retain your geotechnical engineer to work with other project design professionals who are affected by the geotechnical report. Have your geotechnical engineer explain report implications to design professionals affected by them, and then review those design professionals' plans and specifications to see how they have incorporated geotechnical factors. Although certain other design professionals may be familiar with geotechnical concerns, none knows as much about them as a competent geotechnical engineer.

#### **BORING LOGS SHOULD NOT BE SEPARATED FROM THE REPORT \***

Geotechnical engineers develop final boring logs based upon their interpretation of the field logs (assembled by site personnel) and laboratory evaluation of field samples. Geotechnical engineers customarily include only final boring logs in their reports. Final boring logs should not under any circumstances be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to minimize the possibility of contractors misinterpreting the logs during bid preparation. When this occurs, delays, disputes, and unanticipated costs are the all-too-frequent result.

To minimize the likelihood of boring log misinterpretation, give contractors ready access to the complete geotechnical engineering report prepared or authorized for their use. (If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared and that developing construction cost esti-

mates was not one of the specific purposes for which it was prepared. In other words, while a contractor may gain important knowledge from a report prepared for another party, the contractor would be well-advised to discuss the report with your geotechnical engineer and to perform the additional or alternative work that the contractor believes may be needed to obtain the data specifically appropriate for construction cost estimating purposes.) Some clients believe that it is unwise or unnecessary to give contractors access to their geotechnical engineering reports because they hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems. It also helps reduce the adversarial attitudes that can aggravate problems to disproportionate scale.

#### **READ RESPONSIBILITY CLAUSES CLOSELY**

Because geotechnical engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against geotechnical engineers. To help prevent this problem, geotechnical engineers have developed a number of clauses for use in their contracts, reports, and other documents. Responsibility clauses are not exculpatory clauses designed to transfer geotechnical engineers' liabilities to other parties. Instead, they are definitive clauses that identify where geotechnical engineers' responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your geotechnical engineering report. Read them closely. Your geotechnical engineer will be pleased to give full and frank answers to any questions.

#### **RELY ON THE GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE**

Most ASFE-member consulting geotechnical engineering firms are familiar with a variety of techniques and approaches that can be used to help reduce risks for all parties to a construction project, from design through construction. Speak with your geotechnical engineer not only about geotechnical issues, but others as well, to learn about approaches that may be of genuine benefit. You may also wish to obtain certain ASFE publications. Contact a member of ASFE or ASFE for a complimentary directory of ASFE publications.

- \* For further information on this aspect reference should be made to "Guidelines for the Provision of Geotechnical Information in Construction Contracts" published by the Institution of Engineers Australia, National Headquarters, Canberra, 1987.

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## **Attachment 5 – Initial Contamination Evaluation Checklist**

### Initial Contamination Evaluation Checklist

<b>Assessment Details</b>	RZ/6/2019
<b>Address:</b>	405 Cessnock Road, RYHOPE
<b>Staff &amp; Date</b>	Adam Kennedy 25 October 2019
<b>Site inspection</b>	Undertaken 25 October 2019

<b><u>Part 1 - Initial Evaluation Requirements</u></b>	<b>Yes/No/Uncertain</b>
<p><b>1. Have any previous investigations relating to land contamination been conducted on the property, or adjacent land, that indicate the potential for land contamination?</b></p>	Yes
<p><i>Details: (Provide details of a search of the <u>Lake Macquarie Contaminated Land or Potentially Contaminated Land Database</u> and s.149 certificate notations)</i></p>	<p>Subject site – not identified as contaminated land. Adjacent land – 25 Cozzie Lane identified as contaminated land containing hydrocarbons and heavy metals. Remediation Action Plan approved (D08260848) remediation works ongoing.</p>
<p><b>2. Has the property at any time been zoned for industrial, agricultural or defence purposes?</b></p>	Yes
<p><i>Details: (Provide details of a review Northumberland District Planning Scheme 1966, LMLEP 1984, and LMLEP 2004)</i></p>	<ul style="list-style-type: none"> <li>• Northumberland District Planning Scheme 1968 applied a rural zone to the property. Aerial photographs circa 1961 displayed pasture agricultural activities undertaken on the site.</li> <li>• LMLEP 1984 applied an Environmental Protection 7(a) (Scenic) zone. Amendment 53 to LMLEP 1984 applied additional permissible use to the western portion of the land for cemetery and crematoria uses. Development of the cemetery/crematoria was approved in 1992, with stormwater management infrastructure.</li> <li>• LMLEP 2004 applied a 1(1) Rural (Production) zone and 7(3) Environmental (General) zone, which was converted to the current zoning under LMLEP 2014.</li> </ul>
<p><b>3. Has an activity listed in Table 1 ever occurred on the property or been approved on the property?</b></p>	Agricultural
<p><i>Details: (Provide a history of past and current land uses and development approvals for the property)</i></p>	Aerial photographs circa 1961 display the subject site as containing rural dwellings and undertaking pasture agricultural activities. However, no

	<p>development approval exists for these uses.</p> <p>Aerial photographs circa 1991 display continued agricultural uses. No development approvals exist for these uses.</p> <p>Aerial photographs circa 1993 display the site as cleared pasture land, with development of the adjoining cemetery and crematorium. Development approval for the use of cemetery and crematoria (DA/574/1992).</p> <p>Site inspection on 25 October 2019 identified that the site was occupied by several horses.</p>
<p><b>4. Has the property ever been regulated through licensing or other mechanisms in relation to any activity listed in Table 1?</b></p>	<p>No - Regulated under <i>Cemeteries and Crematoria Act 2013</i>.</p>
<p><i>Details: (Provide details of a search of the Protection of the Environment Operations Act 1997 (the POEO Act) licence register</i>  <a href="http://www.epa.nsw.gov.au/prpoeo/">http://www.epa.nsw.gov.au/prpoeo/</a> )</p>	
<p><b>5. Are there any land use restrictions on the property relating to possible contamination, such as notices issued by the EPA or other regulatory authority?</b></p>	<p>No</p>
<p><i>Details: (Provide details of a search of the Contaminated Land Management Act 1997 (CLM Act) record of notices</i>  <a href="http://www.environment.nsw.gov.au/prclmapp/aboutregister.aspx">www.environment.nsw.gov.au/prclmapp/aboutregister.aspx</a>)</p>	
<p><b>6. Does a site inspection suggest that the property may have been associated with any activities listed in Table 1?</b></p>	<p>Yes. The site is characterised by pastured grasslands and 2 deteriorating farm shed structures made from corrugated iron and brick/cement material. The site also contains landscaping material bays and associated storage to the south-west. This area was observed to be in regular use by the proponent.</p>
<p><i>Details: (Comment on site inspection findings)</i></p>	<p>Agriculture</p>
<p><b>7. Are you aware of information of contamination on land immediately adjacent to the property, which may result in potential contamination of the property?</b>  <i>Details: (Comment on land use history of adjacent land and s.149 certificate notations)</i></p>	<p>Adjacent land – 25 Cozzie Lane identified as contaminated land containing hydrocarbons and heavy metals. Remediation Action Plan approved (D08260848) remediation works ongoing.</p>

**Table 1 - Some Activities that may Cause Contamination** (referenced from p. 12 of the Guidelines)

<ul style="list-style-type: none"> <li>• acid/alkali plant and formulation</li> <li>• agricultural/horticultural activities</li> <li>• airports</li> <li>• asbestos production and disposal</li> <li>• chemicals manufacture and formulation</li> <li>• defence works</li> <li>• drum re-conditioning works</li> <li>• dry cleaning establishments</li> <li>• electrical manufacturing (transformers)</li> <li>• electroplating and heat treatment premises</li> </ul>	<ul style="list-style-type: none"> <li>• engine works</li> <li>• explosives industry</li> <li>• gas works</li> <li>• iron and steel works</li> <li>• landfill sites</li> <li>• metal treatment</li> <li>• mining and extractive industries</li> <li>• oil production and storage</li> <li>• paint formulation and manufacture</li> <li>• pesticide manufacture and formulation</li> </ul>	<ul style="list-style-type: none"> <li>• power stations</li> <li>• railway yards</li> <li>• scrap yards</li> <li>• service stations</li> <li>• sheep and cattle dips</li> <li>• smelting and refining</li> <li>• tanning and associated trades</li> <li>• waste storage and treatment</li> <li>• wood preservation</li> </ul>
--	---	---

<b>Part 2 – Additional Evaluation Requirements</b>	<b>Yes/No/Uncertain</b>
<p><b>8. Does a site inspection indicate that any current structures on the property contain asbestos building materials? (typically structures built prior to the mid-1980s)</b></p> <ul style="list-style-type: none"> <li>• <i>Comment on site inspection findings</i></li> </ul>	<p>No. An existing farm shed and demolished farm structure were identified on the site. Materials comprised of corrugated sheet metal and brick and were not identified to contain asbestos.</p>
<p><b>9. Have any structures been demolished on the property that could have contained asbestos building materials?</b></p> <ul style="list-style-type: none"> <li>• <i>Comment on site inspection findings and past aerial photographs</i></li> </ul>	<p>Yes. Previous farm structures were identified on site and found within the western strip of remnant vegetation. Materials consistent of brick, and corrugated iron. No items were considered to contain asbestos.</p>
<p><b>10. Have any parts of the property been excavated that have the potential for acid sulphate soils?</b></p> <ul style="list-style-type: none"> <li>• <i>Review Potential for Acid Sulphate Soil maps and comment on site inspection findings</i></li> </ul>	<p>No. The site is not identified to contain Acid Sulphate Soils.</p>
<p><b>11. Have any parts of the property been filled with off-site material that could include:</b></p> <ol style="list-style-type: none"> <li><b>i. black slag from the former Pasminco Cockle Creek lead smelter;</b></li> <li><b>ii. fill contaminated with asbestos; and/or</b></li> <li><b>iii. any other unidentified potentially contaminated material?</b></li> </ol> <ul style="list-style-type: none"> <li>• <i>Comment on site inspection findings</i></li> </ul>	<p>No</p>

<p><b>12. Is the site categorized by Department of Defence as having substantial or slight potential of containing Unexploded Ordnance (UXO)? (applicable to the localities of Redhead, Jewells, Belmont North, Belmont South and Catherine Hill Bay only)</b></p> <ul style="list-style-type: none"> <li><i>If applicable comment on findings from Department of Defence UXO Home Page <a href="http://www.defence.gov.au/uxo/index.asp">www.defence.gov.au/uxo/index.asp</a></i></li> </ul>	No
---	----

## Appendix 2 - INFORMATION CHECKLIST

### > STEP 1: REQUIRED FOR ALL PROPOSALS

(under s3.33 (2)(a) – (e) of the EP&A Act 1979)

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>Objectives and intended outcome</li> <li>Mapping (including current and proposed zones)</li> <li>Community consultation (agencies to be consulted)</li> <li>Compliance assessment against relevant State Environmental Planning Policies</li> </ul> | <ul style="list-style-type: none"> <li>Explanation of provisions</li> <li>Justification and process for implementation (including compliance assessment against relevant section 9.1 direction/s)</li> </ul> |
|--|--|

### > STEP 2: MATTERS - CONSIDERED ON A CASE BY CASE BASIS

(Depending on complexity of planning proposal and nature of issues)

PLANNING MATTERS OR ISSUES	To be considered	N/A	PLANNING MATTERS OR ISSUES	To be considered	N/A
Strategic Planning Context			Urban Design Considerations		
<ul style="list-style-type: none"> <li>Demonstrated consistency with relevant Regional Strategy</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Existing site plan (buildings vegetation, roads, etc)</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Demonstrated consistency with relevant sub-regional strategy</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Building mass/block diagram study (changes in building height and FSR)</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Demonstrated consistency with or support for the outcomes and actions of relevant DG endorsed local strategy</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Lighting impact</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Demonstrated consistency with Threshold Sustainability Criteria</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Development yield analysis (potential yield of lots, houses, employment generation)</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Site Description/Context			Economic Considerations		
<ul style="list-style-type: none"> <li>Aerial photographs</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Economic impact assessment</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Site photos/photomontage</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Retail centres hierarchy</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traffic and Transport Considerations			<ul style="list-style-type: none"> <li>Employment land</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Local traffic and transport			Social and Cultural Considerations		
<ul style="list-style-type: none"> <li>TMAP</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Heritage impact</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Public transport</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Aboriginal archaeology</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Cycle and pedestrian movement</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Open space management</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Considerations			• European archaeology	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Bushfire hazard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	• Social and cultural impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Acid Sulphate Soil	<input type="checkbox"/>	<input checked="" type="checkbox"/>	• Stakeholder engagement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Noise impact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Infrastructure Considerations		
• Flora and/or fauna	<input checked="" type="checkbox"/>	<input type="checkbox"/>	• Infrastructure servicing and potential funding arrangements	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Soil stability, erosion, sediment, landslip assessment, and subsidence	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Miscellaneous/Additional Considerations		
• Water quality – Potentially DA stage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>List any additional studies</i>		
• Stormwater management – Potentially DA Stage	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
• Flooding	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mine Subsidence	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Land/site contamination (SEPP55)	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
• Resources (including drinking water, minerals, oysters, agricultural lands, fisheries, mining)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
• Sea level rise	<input type="checkbox"/>	<input checked="" type="checkbox"/>			