



# AEP

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# Riparian Assessment Report

Proposed residential subdivision at 527, 507, 501, 463 and 457  
Cessnock Road, Gillieston Heights NSW 2321



Prepared for: **Walker Gillieston Heights Pty Ltd**

**AEP Ref: 2665.02**

**Revision: 00**

**16 June 2023**

**Document Control**

<b>Document Name</b>	Riparian Assessment Report for proposed residential subdivision at 527, 507, 501, 463 and 457 Cessnock Road, Gillieston Heights NSW 2321
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<b>AEP Project Team</b>	Simon Purcell Kelly Drysdale Byron de Jager Brendon Young

**Revision**

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00	16 June 2023	Dean Davies	Walker Gillieston Heights

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## 1.0 Introduction

Anderson Environment & Planning was commissioned by Walker Gillieston Heights (the client) to undertake a Riparian assessment Report (RAR) to inform a potential residential subdivision development at 501, 507, 527, 463, 464 and 457 Cessnock Road, Gillieston Heights, 2321 NSW, refer **Figure 1**.

For the purposes of referencing, this document should be referred to as:

Anderson Environment & Planning (2023). *Riparian Assessment Report for proposed residential subdivision at 501, 507, 527, 463, 464 and 457 Cessnock Road, Gillieston Heights, 2321 NSW, Rev 00*. Unpublished report for Walker Corporation Pty Ltd.

## 2.0 Site Particulars





**Table 1 – Site Details**


Detail	Comments
<b>Client</b>	Walker Corporation Pty Ltd
<b>Address</b>	527, 507, 501, 463 & 457 Cessnock Rd Gillieston Heights, NSW
<b>Title(s)</b>	Lot 2 DP 601226, Lot 1 DP 601226, Lot 1 DP 311179, Lot 2 DP 302745 and Lot 1 DP 302745 It is noted that an easement over a portion of 65 Redwood Drive Gillieston Height Part Lot 2 DP1230739 is applicable to this proposal and the portion where impact assessment has been applicable.
<b>Study area</b>	The Study Area consists of the proposed residential subdivision of 322 lots and a portion of the retained lands (3.56ha) is to be placed under a Biodiversity Management Plan (BMP). The Study Area totals 43.94ha (refer to <b>Figure 1</b> ).
<b>Subject Site</b>	The Subject Site/development footprint covers 31.83ha, comprising approx. 0.27ha (PCT 1600) and 0.10ha (PCT 1525) of native remnant vegetation and 0.33ha of planted native vegetation. The majority of the Subject Site totalling 31.14ha consists of exotic / cleared / existing infrastructure and includes 0.17ha dam / waterbody (refer <b>Figure 4</b> ).
<b>LGA</b>	Maitland City Council
<b>Zoning</b>	Under the <i>Maitland Local Environmental Plan 2011</i> (the LEP) (pub. 16-12-2011), the Study Area is currently zoned R1 – ‘General Residential’ and RU2 – ‘Rural Landscape’, C2 – ‘Environmental Conservation’ and C3 – ‘Environmental Management’.
<b>Current Land Use</b>	The Subject Site is currently used for cattle grazing with five residential homes and associated agricultural infrastructure. The Subject Site is highly managed with a few patches of remnant and planted native vegetation, and scattered trees which is in a highly degraded condition.
<b>Surrounding Land Use</b>	The site is bounded by: <ul style="list-style-type: none"> <li>• Urban development to the north zoned R1 – General Residential and C3 – Environmental Management.</li> <li>• Wallis Creek to the east with floodplains/pastures. The zoning is a combination of RU2 – Rural Landscape and C2 – Environmental Conservation.</li> <li>• Testers Hollow to the south with floodplains/pasture. The zoning is a combination of RU2 – Rural Landscape and C2 – Environmental Conservation.</li> <li>• Cessnock Road to the west with rural properties zoned RU2 – Rural Landscape and R1 – General Residential.</li> </ul>

Detail	Comments
<b>Regional Vegetation</b>	<p>Previous datasets consulted include <i>Lower Hunter Regional Vegetation Mapping 2013</i>. There was no regionally mapped land within the Subject Site with PCT 1525 and PCT 1736 identified within the Study Area <b>refer Figure 2</b>.</p> <p>Ground truthing of the Subject Site revealed that it consists predominately of exotic dominant grasslands cleared for pasture with non-endemic assemblages of native and exotic trees planted around the residential dwellings and roadways. There are patches of native vegetation which is associated with PCT1600 <i>Spotted Gum - Red Ironbark - Narrow-leaved Ironbark - Grey Box shrub-grass open forest of the lower Hunter</i>.</p> <p>PCT 1525 <i>Sandpaper Fig - Whalebone Tree warm temperate rainforest</i> exists in the riparian zone of Wallis creek to the east of the Subject Site with some scattered tree species from this community within the Subject Site.</p>
<b>Proposed Development</b>	The proposal includes a residential subdivision and associated civil works.
<b>Riparian areas</b>	There are five farm dams located within the Subject Site and two state mapped hydrolines. One first Order Stream in the north western portion of the main allotment and the beginning of another first order stream along the northern boundary <b>refer Figure 1 and 2</b> . It is noted that Wallis Creek runs along the eastern boundary of the Study Area and is partially Biodiversity Mapped Land (BV Map).

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**

-  Study Area
-  Cadastre
-  Hydroline
-  Hydroarea



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



# AEP

Title: Figure 1 - Site Location

Date: June 2023

Location: 527 Cessnock Rd, Gilleston Heights NSW 2321

Client: Walker Gilleston Heights Pty Ltd

AEP ref: 2665.02

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.

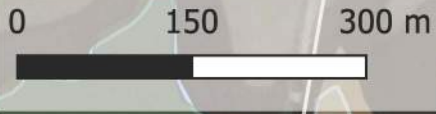


### Legend

- Study Area
- Cadastre
- Hydroline
- Hydroarea

### Lower Hunter Regional Vegetation

- Unidentified
- PCT 1525 Sandpaper Fig - Whalebone Tree warm temperate rainforest
- PCT 1591 Grey Gum - Rough-barked Apple shrubby open forest of the lower Hunter
- PCT 1598 Forest Red Gum grassy open forest on floodplains of the lower Hunter
- PCT 1600 Spotted Gum - Red Ironbark - Narrow-leaved Ironbark - Grey Box shrub-grass open forest of the lower Hunter
- PCT 1736 Water Couch - Tall Spike Rush freshwater wetland of the Central Coast and lower Hunter



Note:  
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# AEP

Title: Figure 2 - Regional Vegetation Date: June 2023  
Location: 527 Cessnock Rd, Gilleston Heights NSW 2321  
Client: Walker Gilleston Heights Pty Ltd AEP ref: 2665.02

## 3.0 Methodology

Field surveys for determining the status of waterfront land occurring within the Subject Site have been prepared and performed as per the Natural Resources Access Regulator, 2020, *Waterfront Land Tool*. The tool identifies waterfront land based on three key factors:

- The presence of defined bed and banks;
- Evidence of flow and geomorphic features (whether water is present or not); and
- The presence of aquatic/riparian vegetation.

## 3.1 Information Sources

Information and spatial data provided within this RAR has been compiled from various sources including:

- Department of Planning, Industry and Environment (2020), Natural Resources Access Regulator Waterfront Land Tool;
- Aerial Photograph Interpretation (API) of the site using the latest Nearmap imagery (September 2022) and SixMaps and surrounding locality;
- NSW Government (2018) *Determining Stream Order* Fact Sheet;
- Water Management (General) Regulation 2018 Hydroline spatial data, accessed March 2022;
- Regional Vegetation Mapping assessed utilising Lower Hunter Vegetation Mapping 2013; and
- Collective knowledge gained from previous ecological survey and assessment in the area over the past 30 years.

## 3.2 Desktop Assessment

The following desktop analysis was conducted for the Subject Site:

- Stream orders were determined using the Strahler Order system via both API and *Water Management (General) Regulation 2018 Hydroline spatial data 1.0* refer **Figure 3** Desktop Stream Order;
- Regional Vegetation Mapping assessed utilising Lower Hunter Vegetation mapping 2013 was utilised to identify vegetation communities occurring within the Subject Site (refer **Figure 2**);
- Literature review of stream ordering assessment and field assessment criteria to determine accuracy of mapped hydrolines;
- Assignment of segment identification numbers to potential watercourses (Segment ID) (refer **Figure 4**); and
- Investigations for streams outside of the Subject Site will consist of roadside visual inspections and further desktop analysis.

## 3.3 Field Survey

Field surveys were completed in 2022 with the majority of the Riparians fieldwork undertaken in February 2023. The mapped hydrolines within the northern and western boundaries of the Subject Site were assessed in order to determine the presence of one or more of the following features: defined bed



and banks; evidence of flow and geomorphic features (whether water is present or not); and the presence of aquatic/riparian vegetation within the unnamed tributaries.

General observations outside of the Subject Site were undertaken to assess the hydrolines in the broader locality (refer **Figure 5** for survey effort).

The following data was collected to ground-truth desktop level assessments:

- Assessing each mapped hydroline to determine if defined bed and banks (including locating high bank) are present;
- Identifying what type of watercourse is present (in accordance with NRAR Guide – Watercourse types);
- Determine and notate watercourse features;
- Determine presence of any lakes or wetlands; and
- Determine and notate any changes in vegetation communities.

## 4.0 Riparian Assessment Results





Fieldwork was undertaken to ground-truth the stream order of the watercourses within the Subject Site and in the surrounding locality as is mapped in the New South Wales Hydroline Data Set. Desktop investigations revealed two (2) 1<sup>st</sup> order streams are mapped within the Study Area (refer **Figure 3**). Fieldwork was primarily conducted in February 2023 to ground-truth the stream order as mapped in the New South Wales Hydroline Data Set (refer **Appendix A**)

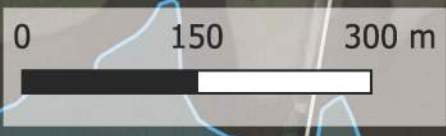

**Table 2 – Assignment of survey identification numbers to potential watercourses**

Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
<b>Preparation</b>			
Prepare map allocating survey identification numbers	Yes	A desktop assessment indicated that the mapped hydrolines may have varying features representative of watercourses. Therefore, two segments were identified with eight individual targeted assessments.	4

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**

-  Study Area
-  Cadastre
-  Hydroline
-  Hydroarea



Note:  
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2. Do not scale off the plan






# AEP

Title: Figure 3 - Desktop Stream Order  
Location: 527 Cessnock Rd, Gilleston Heights NSW 2321  
Client: Walker Gilleston Heights Pty Ltd  
Date: June 2023  
AEP ref: 2665.02

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**

-  Study Area
- Study Segments**
-  1
-  2



Note:  
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**AEP**

Title: Figure 4 - Survey Identification Number

Date: June 2023

Location: 527 Cessnock Rd Gilleston Heights 2321

Client: Walker Gilleston Heights Pty Ltd

AEP ref: 2665.02

**Table 3 – Segment ID 1.1 Riparian Assessment**

Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
<b>Desktop Assessment Segment ID – 1.1</b>			
Is your property located on a watercourse, lake or estuary within the shaded area in any of the NRAR waterfront land maps? (Appendix 1- NRAR Guidelines, 2020)	No	No, the nearest mapped shaded waterfront land is the Hunter River, Newcastle, approximately 22.4km to the South East of the Subject Site.	-
Is your property within the shaded area on the <i>NRAR Map—Western land map local government area?</i> (Appendix 2- NRAR Guidelines, 2020)	No	No, the property is located in the Maitland LGA, which is excluded from the Western Land map.	-
Is there a watercourse visible on your property?	Yes	Yes, as per the desktop assessment there are two (2) mapped hydro-lines within the Study Area.	3
Is there a lake or wetland on your property or within 40 metres of the proposed work? (Appendix 3 - NRAR Guidelines, 2020—Lakes and Wetlands)	No	No wetland or lake are located on or within 40m from the site. The nearest large body of water is Louth Park wetland located 300m to the east of the Subject Site.	-
Using the <i>Determining Stream Order</i> fact sheet (Appendix 4 - NRAR Guidelines, 2020) and the <i>NSW Hydro Line Spatial Data Map</i> , what is the stream order of your watercourse?	1	Based on the desktop assessment, this hydroline is mapped as a 1 <sup>st</sup> order stream.	3
<b>Field Assessment – Segment ID – 1.1</b>			
Defined Bed and Banks (Yes / No)	No	-	-
Type of Watercourse: Type 1, Type 2, Type 3a, Type 3b, Type 3c, Type 4, Type 5, Type 6, Type 7, None (Refer Appendix 5 - NRAR Guidelines, 2020)	None	-	-
Watercourse Feature Present (Pool, Riffle, Erosion and Disposition, None)	No	-	-
Lakes or Wetlands (Appendix 3 - NRAR Guidelines, 2020)	No	-	-
Vegetation Present to Indicate Wetlands (Appendix 7 - NRAR Guidelines, 2020)	No	-	-
High Bank (Appendix 8 - NRAR Guidelines, 2020)	No	-	-
Ground-truthed Waterfront land Present (Y / N)	No	The inspection shows no defined bed and bank, or any watercourse features described in Appendix 6 of the Waterfront Land Tool. The 1st order stream as mapped was not observed and does not constitute waterfront land.	5
Ground-truthed Numbering to Determine VRZ	N/A	-	6
Controlled Activity Approval Required (Y / N)	No	-	-
Vegetated Riparian Zone Required (m)	N/A	-	-
Comments	No bed and banks were observed at field survey segment 1.1.		

Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
		<p>Watercourse features as defined by Appendix 6 of the Waterfront Land Tool were not identified.</p> <p>It is likely this Survey Point represents an area of dam over flow during periods of heavy rain, and does not meet the definition for waterfront land.</p> <p>The mapped 1st order stream is not present within the Subject Site</p>	



late 1: Segment ID 1.1 Showing dam facing north.



Plate 2: Segment ID 1.1 Facing east across dam.

**Table 4 – Segment ID 1.2 Riparian Assessment**

Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
<b>Desktop Assessment Segment ID – 1.2</b>			
Is your property located on a watercourse, lake or estuary within the shaded area in any of the NRAR waterfront land maps? (Appendix 1- NRAR Guidelines, 2020)	No	No, the nearest mapped shaded waterfront land is the Hunter River, Newcastle, approximately 22.4km to the South East of the Subject Site.	-
Is your property within the shaded area on the <i>NRAR Map—Western land map local government area?</i> (Appendix 2- NRAR Guidelines, 2020)	No	No, the property is located in the Maitland LGA, which is excluded from the Western Land map.	-
Is there a watercourse visible on your property?	Yes	Yes, as per the desktop assessment there are two (2) mapped hydro-lines within the Study Area.	3
Is there a lake or wetland on your property or within 40 metres of the proposed work? (Appendix 3 - NRAR Guidelines, 2020—Lakes and Wetlands)	No	No wetland or lake are located on or within 40m from the site.	-
Using the <i>Determining Stream Order</i> fact sheet (Appendix 4 - NRAR Guidelines, 2020) and the NSW <i>Hydro Line Spatial Data Map</i> , what is the stream order of your watercourse?	1	Based on the desktop assessment, this hydroline is mapped as a 1 <sup>st</sup> order stream.	3
<b>Field Assessment – Segment ID – 1.2</b>			
Defined Bed and Banks (Yes / No)	No	-	-
Type of Watercourse: Type 1, Type 2, Type 3a, Type 3b, Type 3c, Type 4, Type 5, Type 6, Type 7, None (Refer Appendix 5 - NRAR Guidelines, 2020)	None	-	-
Watercourse Feature Present (Pool, Riffle, Erosion and Disposition, None)	No	-	-
Lakes or Wetlands (Appendix 3 - NRAR Guidelines, 2020)	No	-	-
Vegetation Present to Indicate Wetlands (Appendix 7 - NRAR Guidelines, 2020)	No	-	-
High Bank (Appendix 8 - NRAR Guidelines, 2020)	No	-	-
Ground-truthed Waterfront land Present (Y / N)	No	The inspection shows no defined bed and bank, or any watercourse features described in Appendix 6 of the Waterfront Land Tool. The 1st order stream as mapped was not observed and does not constitute waterfront land.	5
Ground-truthed Numbering to Determine VRZ	N/A	-	6
Controlled Activity Approval Required (Y / N)	No	-	-
Vegetated Riparian Zone Required (m)	N/A-	-	-
Comments	Field survey segment 1.2 is located downhill (south-west) of segment 1.1 just below the farm dam. This wet area does not meet the criteria for a 1st order stream due to the lack of defined bed		

Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
		<p>and banks, lack of riparian/ aquatic vegetation and no visible high bank. The vegetation is greener due to the convergence of overland flow in between landscape undulations.</p> <p>Watercourse features as defined by Appendix 6 of the Waterfront Land Tool were not identified.</p> <p>The mapped 1st order stream is not present within the Subject Site.</p>	



**Plate 3 Segment ID 1.2 (left) facing SW**



**Plate 4: Segment ID 1.2 (right) facing NE. The dam wall can be seen.**

**Table 5 – Segment ID 1.3 Riparian Assessment**

Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
<b>Desktop Assessment Segment ID – 1.3</b>			
Is your property located on a watercourse, lake or estuary within the shaded area in any of the NRAR waterfront land maps? (Appendix 1- NRAR Guidelines, 2020)	No	No, the nearest mapped shaded waterfront land is the Hunter River, Newcastle, approximately 22.4km to the South East of the Subject Site.	-
Is your property within the shaded area on the <i>NRAR Map—Western land map local government area?</i> (Appendix 2- NRAR Guidelines, 2020)	No	No, the property is located in the Maitland LGA, which is excluded from the Western Land map.	-
Is there a watercourse visible on your property?	Yes	Yes, as per the desktop assessment there are two (2) mapped hydro-lines within the Study Area.	3
Is there a lake or wetland on your property or within 40 metres of the proposed work? (Appendix 3 - NRAR Guidelines, 2020—Lakes and Wetlands)	No	No wetland or lake are located on or within 40m from the site.	-
Using the <i>Determining Stream Order</i> fact sheet (Appendix 4 - NRAR Guidelines, 2020) and the NSW <i>Hydro Line Spatial Data Map</i> , what is the stream order of your watercourse?	1	Based on the desktop assessment, this hydroline is mapped as a 1 <sup>st</sup> order stream.	3
<b>Field Assessment – Segment ID – 1.3</b>			
Defined Bed and Banks (Yes / No)	No	-	-
Type of Watercourse: Type 1, Type 2, Type 3a, Type 3b, Type 3c, Type 4, Type 5, Type 6, Type 7, None (Refer Appendix 5 - NRAR Guidelines, 2020)	None	-	-
Watercourse Feature Present (Pool, Riffle, Erosion and Disposition, None)	No	-	-
Lakes or Wetlands (Appendix 3 - NRAR Guidelines, 2020)	No	-	-
Vegetation Present to Indicate Wetlands (Appendix 7 - NRAR Guidelines, 2020)	No	-	-
High Bank (Appendix 8 - NRAR Guidelines, 2020)	No	-	-
Ground-truthed Waterfront land Present (Y / N)	No	The inspection shows no defined bed and bank, or any watercourse features described in Appendix 6 of the Waterfront Land Tool.  The 1st order stream as mapped was not observed and does not constitute waterfront land.	6
Ground-truthed Numbering to Determine VRZ	N/A	-	-
Controlled Activity Approval Required (Y / N)	No	-	-
Vegetated Riparian Zone Required (m)	No	-	-
Comments	Field survey segment 1.3 is located further downhill (south-west) along field survey segment 1. This wet area does not meet the		



Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
		<p>criteria for a 1st order stream due to the lack of defined bed and banks, lack of riparian/ aquatic vegetation and lack of water.</p> <p>Watercourse features as defined by Appendix 6 of the Waterfront Land Tool were not identified.</p> <p>The mapped 1st order stream is not present within the Subject Site.</p>	



**Plate 5: Segment ID 1.3 facing NE.**



**Plate 6: Segment ID 1.3 facing NE.**

**Table 6– Segment ID 1.4 Riparian Assessment**

Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
<b>Desktop Assessment– Segment ID – 1.4</b>			
Is your property located on a watercourse, lake or estuary within the shaded area in any of the NRAR waterfront land maps? (Appendix 1- NRAR Guidelines, 2020)	No	No, the nearest mapped shaded waterfront land is the Hunter River, Newcastle, approximately 22.4km to the South East of the Subject Site.	-
Is your property within the shaded area on the <i>NRAR Map—Western land map local government area?</i> (Appendix 2 - NRAR Guidelines, 2020)	No	No, the property is located in the Maitland LGA, which is excluded from the Western Land map.	-
Is there a watercourse visible on your property?	Yes	Yes, as per the desktop assessment there are two (2) mapped hydro-lines within the Study Area.	3
Is there a lake or wetland on your property or within 40 metres of the proposed work? (Appendix 3 - NRAR - NRAR Guidelines, 2020)—Lakes and wetlands)	No	No wetland or lake are located on or within 40m from the site.	-
Using the <i>Determining Stream Order</i> fact sheet (Appendix 4 - NRAR Guidelines, 2020) and the NSW <i>Hydro Line Spatial Data Map</i> , what is the stream order of your watercourse?	1	Based on the desktop assessment, this hydroline is mapped as a 1 <sup>st</sup> order stream.	3
<b>Field Assessment – Segment ID – 1.4</b>			
Defined Bed and Banks (Yes / No)	No	-	-
Type of Watercourse: Type 1, Type 2, Type 3a, Type 3b, Type 3c, Type 4, Type 5, Type 6, Type 7, None (Refer Appendix 5 - NRAR Guidelines, 2020)	None	-	-
Watercourse Feature Present (Pool, Riffle, Erosion and Disposition, None)	No	-	-
Lakes or Wetlands (Appendix 3 - NRAR Guidelines, 2020)	No	-	-
Vegetation Present to Indicate Wetlands (Appendix 7 - NRAR Guidelines, 2020)	No	-	-
High Bank (Appendix 8 - NRAR Guidelines, 2020)	No	-	-
Ground-truthed Waterfront land Present (Y / N)	No	The inspection shows no defined bed and bank, or any watercourse features described in Appendix 6 of the Waterfront Land Tool.  The 1st order stream as mapped was not observed and does not constitute waterfront land.	6
Ground-truthed Numbering to Determine VRZ	N/A	-	-
Controlled Activity Approval Required (Y / N)	No	-	-
Vegetated Riparian Zone Required (m)	No	-	-
Comments	Field survey segment 1.4, does not meet the criteria for a 1 <sup>st</sup> order stream due to the lack of defined bed and banks, lack of		

	<p>riparian vegetation and no water present in spite of recent rain before time of survey.</p> <p>Watercourse features as defined by Appendix 6 of the Waterfront Land Tool were not identified.</p> <p>The mapped 1st order stream is not present within the Subject Site.</p>
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**Plate 7: Segment ID 1.4 facing NE.**



**Plate 8: Segment ID 1.4**

**Table 7 – Segment ID 1.5 Riparian Assessment**

<b>Desktop Assessment – Segment ID – 1.5</b>			
Is your property located on a watercourse, lake or estuary within the shaded area in any of the NRAR waterfront land maps? (Appendix 1- NRAR Guidelines, 2020)	No	No, the nearest mapped shaded waterfront land is the Hunter River, Newcastle, approximately 22.4km to the South East of the Subject Site.	-
Is your property within the shaded area on the <i>NRAR Map—Western land map local government area?</i> (Appendix 2- NRAR Guidelines, 2020)	No	No, the property is located in the Maitland LGA, which is excluded from the Western Land map.	-
Is there a watercourse visible on your property?	Yes	Yes, as per the desktop assessment there are two (2) mapped hydro-lines within the Study Area.	3
Is there a lake or wetland on your property or within 40 metres of the proposed work? (Appendix 3 - NRAR Guidelines, 2020—Lakes and Wetlands)	No	No wetland or lake are located on or within 40m from the site.	-
Using the <i>Determining Stream Order</i> fact sheet (Appendix 4 - NRAR Guidelines, 2020) and the <i>NSW Hydro Line Spatial Data Map</i> , what is the stream order of your watercourse?	1	Based on the desktop assessment, this hydroline is mapped as a 1 <sup>st</sup> order stream.	3
<b>Field Assessment – Segment ID – 1.5</b>			
Define Bed and Banks (Yes / No)	No	-	-
Type of Watercourse: Type 1, Type 2, Type 3a, Type 3b, Type 3c, Type 4, Type 5, Type 6, Type 7, None (Appendix 5 - NRAR Guidelines, 2020)	None	-	-
Watercourse Feature Present (Pool, Riffle, Erosion and Disposition, None)	No	-	-
Lakes or Wetlands (Appendix 3 - NRAR Guidelines, 2020)	No	-	-
Vegetation Present to indicate Wetlands (Appendix 7 - NRAR Guidelines, 2020)	No	-	-
High Bank (Appendix 8 - NRAR Guidelines, 2020)	No	-	-
Ground-truthed Waterfront land Present (Y / N)	No	The inspection shows no defined bed and bank, or any watercourse features described in Appendix 6 of the Waterfront Land Tool.  The 1st order stream as mapped was not observed and does not constitute waterfront land.	6
Ground-truthed Numbering to Determine VRZ	N/A	-	-
Controlled Activity Approval Required (Y / N)	No	-	-
Vegetated Riparian Zone Required (m)	No	-	-
Comments	<p>Field survey segment 1.5, does not meet the criteria for a 1<sup>st</sup> order stream due to the lack of defined bed and banks, lack of riparian/ aquatic vegetation and lack of water.</p> <p>Watercourse features as defined by Appendix 6 of the Waterfront Land Tool were not identified.</p> <p>The mapped 1st order stream is not present within the Subject Site.</p>		



**Plate 9: Segment ID 1.5 facing NE, the lower dam can be seen.**



**Plate 10: Segment ID 1.5 facing SE.**

**Table 8 – Segment ID 1.6 Riparian Assessment**

<b>Desktop Assessment – Segment ID – 1.6</b>			
Is your property located on a watercourse, lake or estuary within the shaded area in any of the NRAR waterfront land maps? (Appendix 1- NRAR Guidelines, 2020)	No	No, the nearest mapped shaded waterfront land is the Hunter River, Newcastle, approximately 22.4km to the South East of the Subject Site.	-
Is your property within the shaded area on the <i>NRAR Map—Western land map local government area?</i> (Appendix 2- NRAR Guidelines, 2020)	No	No, the property is located in the Maitland LGA, which is excluded from the Western Land map.	-
Is there a watercourse visible on your property?	Yes	Yes, as per the desktop assessment there are two (2) mapped hydro-lines within the Study Area.	3
Is there a lake or wetland on your property or within 40 metres of the proposed work? (Appendix 3 - NRAR Guidelines, 2020—Lakes and Wetlands)	No	No wetland or lake are located on or within 40m from the site.	-
Using the <i>Determining Stream Order</i> fact sheet (Appendix 4 - NRAR Guidelines, 2020) and the <i>NSW Hydro Line Spatial Data Map</i> , what is the stream order of your watercourse?	1	Based on the desktop assessment, this hydroline is mapped as a 1 <sup>st</sup> order stream.	3
<b>Field Assessment – Segment ID – 1.6</b>			
Define Bed and Banks (Yes / No)	No	-	-
Type of Watercourse: Type 1, Type 2, Type 3a, Type 3b, Type 3c, Type 4, Type 5, Type 6, Type 7, None (Appendix 5 - NRAR Guidelines, 2020)	None	-	-
Watercourse Feature Present (Pool, Riffle, Erosion and Disposition, None)	No	-	-
Lakes or Wetlands (Appendix 3 - NRAR Guidelines, 2020)	No	-	-
Vegetation Present to indicate Wetlands (Appendix 7 - NRAR Guidelines, 2020)	No	-	-
High Bank (Appendix 8 - NRAR Guidelines, 2020)	No	-	-
Ground-truthed Waterfront land Present (Y / N)	No	The inspection shows no defined bed and bank, or any watercourse features described in Appendix 6 of the Waterfront Land Tool.  The 1st order stream as mapped was not observed and does not constitute waterfront land.	6
Ground-truthed Numbering to Determine VRZ	N/A	-	-
Controlled Activity Approval Required (Y / N)	No	-	-
Vegetated Riparian Zone Required (m)	No	-	-
Comments	A farm dam is located at field survey segment 1.6. A gully to the south east channels overland flow during heavy rainfall into the dam, however, no defined bad and banks are visible, or any		

	<p>watercourse features as defined by Appendix 6 of the Waterfront Land Tool.</p> <p>Watercourse features as defined by Appendix 6 of the Waterfront Land Tool were not identified.</p> <p>The mapped 1st order stream is not present within the Subject Site.</p>
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**Plate 11: Segment ID 1.6 facing NE**



**Plate 12: Segment ID 1.6 facing SE**

**Table 9 – Segment ID 1.7 Riparian Assessment**

<b>Desktop Assessment – Segment ID – 1.7</b>			
Is your property located on a watercourse, lake or estuary within the shaded area in any of the NRAR waterfront land maps? (Appendix 1- NRAR Guidelines, 2020)	No	No, the nearest mapped shaded waterfront land is the Hunter River, Newcastle, approximately 22.4km to the South East of the Subject Site.	-
Is your property within the shaded area on the <i>NRAR Map—Western land map local government area?</i> (Appendix 2- NRAR Guidelines, 2020)	No	No, the property is located in the Maitland LGA, which is excluded from the Western Land map.	-
Is there a watercourse visible on your property?	Yes	Yes, as per the desktop assessment there are two (2) mapped hydro-lines within the Study Area.	3
Is there a lake or wetland on your property or within 40 metres of the proposed work? (Appendix 3 - NRAR Guidelines, 2020—Lakes and Wetlands)	No	No wetland or lake are located on or within 40m from the site.	-
Using the <i>Determining Stream Order</i> fact sheet (Appendix 4 - NRAR Guidelines, 2020) and the NSW <i>Hydro Line Spatial Data Map</i> , what is the stream order of your watercourse?	1	Based on the desktop assessment, this hydroline is mapped as a 1 <sup>st</sup> order stream.	3
<b>Field Assessment – Segment ID – 1.7</b>			
Define Bed and Banks (Yes / No)	No	-	-
Type of Watercourse: Type 1, Type 2, Type 3a, Type 3b, Type 3c, Type 4, Type 5, Type 6, Type 7, None (Appendix 5 - NRAR Guidelines, 2020)	None	-	-
Watercourse Feature Present (Pool, Riffle, Erosion and Disposition, None)	No	-	-
Lakes or Wetlands (Appendix 3 - NRAR Guidelines, 2020)	No	-	-
Vegetation Present to indicate Wetlands (Appendix 7 - NRAR Guidelines, 2020)	No	-	-
High Bank (Appendix 8 - NRAR Guidelines, 2020)	No	-	-
Ground-truthed Waterfront land Present (Y / N)	No	Field survey segment 1.7 is associated with low depressions in the landscape formed to allow for the water movement through culverts under the road. The inspection shows no defined bed and bank, or any watercourse features described in Appendix 6 of the Waterfront Land Tool.  The 1st order stream as mapped was not observed and does not constitute waterfront land.	6
Ground-truthed Numbering to Determine VRZ	N/A	-	-
Controlled Activity Approval Required (Y / N)	No	-	-
Vegetated Riparian Zone Required (m)	No	-	-



<p>Comments</p>	<p>Field survey segment 1.7, does not meet the criteria for a 1<sup>st</sup> order stream due to the lack of defined bed and banks, lack of riparian/aquatic vegetation. At the time of survey there was water present from recent rain but it was clear that it would diminish within a relatively short time frame.</p> <p>Watercourse features as defined by Appendix 6 of the Waterfront Land Tool were not identified.</p> <p>The mapped 1st order stream is not present within the Subject Site.</p>
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**Plate 13: Left Segment ID 1.7 Culvert showing no defined bed or bank along eastern side of Cessnock Rd facing west.**



**Plate 14: Right Segment ID 1.7 (right) Culvert on western downstream side of Cessnock Rd.**

**Table 10 – Segment ID 2.1 Riparian Assessment**

Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
<b>Desktop Assessment Segment ID – 2.1</b>			
Is your property located on a watercourse, lake or estuary within the shaded area in any of the NRAR waterfront land maps? (Appendix 1- NRAR Guidelines, 2020)	No	No, the nearest mapped shaded waterfront land is the Hunter River, Newcastle, approximately 22.4km to the South East of the Subject Site.	-
Is your property within the shaded area on the <i>NRAR Map—Western land map local government area</i> ? (Appendix 2- NRAR Guidelines, 2020)	No	No, the property is located in the Maitland LGA, which is excluded from the Western Land map.	-
Is there a watercourse visible on your property?	Yes	Yes, as per the desktop assessment there are two (2) mapped hydro-lines within the Study Area.	3
Is there a lake or wetland on your property or within 40 metres of the proposed work? (Appendix 3 - NRAR Guidelines, 2020—Lakes and Wetlands)	No	No wetland or lake are located on or within 40m from the site.	-
Using the <i>Determining Stream Order</i> fact sheet (Appendix 4 - NRAR Guidelines, 2020) and the <i>NSW Hydro Line Spatial Data Map</i> , what is the stream order of your watercourse?	No	Based on the desktop assessment, this hydroline is mapped as a 1 <sup>st</sup> order stream.	3
<b>Field Assessment – Segment ID – 2.1</b>			
Defined Bed and Banks (Yes / No)	Yes	Bed and banks visible and present.	-
Type of Watercourse: Type 1, Type 2, Type 3a, Type 3b, Type 3c, Type 4, Type 5, Type 6, Type 7, None (Refer Appendix 5 - NRAR Guidelines, 2020)	None	Type 1 – Confined Valley Headwater	-
Watercourse Feature Present (Pool, Riffle, Erosion and Disposition, None)	No	Erosion	-
Lakes or Wetlands (Appendix 3 - NRAR Guidelines, 2020)	No	-	-
Vegetation Present to Indicate Wetlands (Appendix 7 - NRAR Guidelines, 2020)	No	-	-
High Bank (Appendix 8 - NRAR Guidelines, 2020)	Yes	-	5
Ground-truthed Waterfront land Present (Y / N)	Yes	This location represents the beginning of a 1 <sup>st</sup> order watercourse.	6
Ground-truthed Numbering to Determine VRZ	1	As per Appendix 4 of the Waterfront Land Tool, Segment ID 2 has been determined to be commensurate with a 1 <sup>st</sup> order stream for the purposes of defining the associated VRZ.	6
Controlled Activity Approval Required (Y / N)	Yes	The watercourse begins approx. 15m to the north of the boundary of Lot 2 DP 601226 and within Lot 2 DP1230739 and the proposed development will encroach and require a CAA.	-
Vegetated Riparian Zone Required (m)	Yes	10m from top of bank.	-

Task – Waterfront Land Tool (2020)	Assessment	Comments (provide evidence)	Figures
Comments		<p>Field survey segment 2.1 is located on the northern boundary of the Subject Site. From the south overland flow converges down steep paddock grassland transitioning to a thick patch of non-native shrubs. A defined bed and bank are visible within the vegetation approximately 15m to the north of the boundary of Lot 2 DP601226 and within Lot 2 DP1230739. Additionally, an outlet pipe discharges water at the boundary, artificially contributing to the watercourse.</p> <p>Watercourse features as defined by Appendix 6 of the Waterfront Land Tool were identified in this location.</p> <p>Ground-truthing of the NSW Hydroline spatial data identified the mapped 1<sup>st</sup> order stream is present within the Subject Site within Lot 2 DP1230739. The proposed VRZ for this first order stream is 10m and as works will occur within 40m of waterfront land, a Controlled Activity Approval will be required to accompany this development application.</p>	



**Plate 15: Segment ID 2.1 downstream**

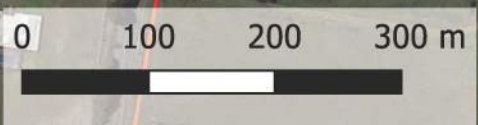



**Plate 16: Segment ID 2.1 upstream**

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**

- Study Area
- NSW Hydroline Spatial Data
- Ground-truthed Hydroline
- Field Survey Segment



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







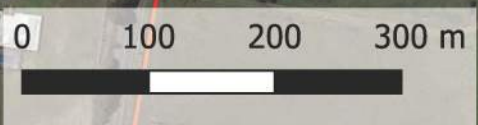
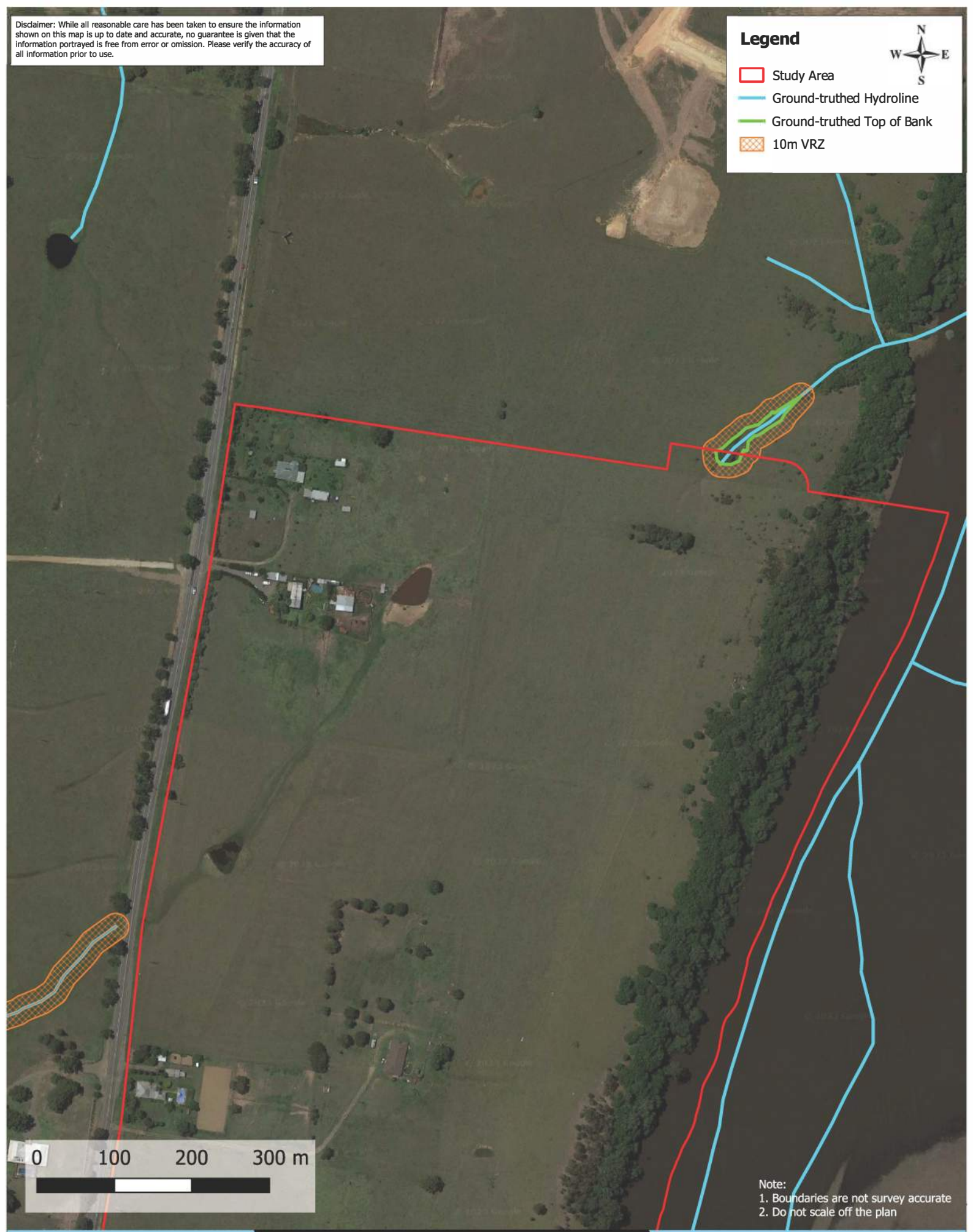
# AEP

Figure 5 - Survey Effort Date: June 2023  
Location: 527 Cessnock Rd, Gilleston Heights NSW 2321  
Client: Walker Gilleston Heights Pty Ltd AEP ref: 2665.02

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

-  Study Area
-  Ground-truthed Hydroline
-  Ground-truthed Top of Bank
-  10m VRZ



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



# AEP

Title: Figure 5 - Ground-Truthed VRZ  
Date: June 2023  
Location: 527 Cessnock Rd, Gilleston Heights NSW 2321  
Client: Walker Gilleston Heights Pty Ltd  
AEP ref: 2665.02

## 5.0 Summary of Investigation

Desktop surveys indicated the presence of two (2) 1<sup>st</sup> order hydrolines across the Subject Site. However, field surveys identified a lack of watercourse features in Segment ID 1. This segment predominately represents minor gullies within the undulating landscape where a confluence of overland flow converges from surrounding flat paddocks and pastoral land. As a result, at the time of field surveys and ground-truthing of state mapped hydrolines there was no Watercourse features present as defined by Appendix 6 of the Waterfront Land Tool along Segment ID 1.

The desktop and field surveys have shown that Segment ID 2 constitutes a Type 1 – Confined Valley Headwater. At the time of field surveys no additional tributaries were identified connected to this segment. Therefore this segment was assigned ground-truthed numbering 1 for the purposes of defining the Vegetation Riparian Zone (VRZ). Segment ID 2 requires a VRZ of 10m either side of the ground truthed high banks, as defined in **Table 11**.

**Table 11 – Riparian Corridor Matrix**

Type	VRZ width (each side of WC)	Total RC width	Cycleways and pathways	Detention basins		Stormwater outlet structures and essential services	Stream realignment	Road crossings		
				Only within 50% outer VRZ	Online			Any	Culvert	Bridge
1 <sup>st</sup> order	10m	20m + channel width	Yes	Yes	Yes	Yes	Yes	-	-	
2 <sup>nd</sup> order	20m	40m + channel width	Yes	Yes	Yes	Yes	-	Yes	-	
3 <sup>rd</sup> order	30m	60m + channel width	Yes	Yes	-	Yes	-	-	Yes	Yes
4 <sup>th</sup> order or greater	40m	80m + channel width	Yes	Yes	-	Yes	-	-	Yes	Yes

**Note: Where a watercourse (WC) does not exhibit the features of a defined channel with bed and banks, the NRAR may determine that the watercourse is not waterfront land for the purpose of the WM Act.**

The DPE (Water) administers the 2000 WM Act and is required to assess activities carried out on waterfront land. Waterfront land includes the bed and bank of any river, lake or estuary and all land within 40 meters of the highest bank of the river, lake or estuary. Certain activities within this land is defined as a ‘controlled activity’ and requires approval from the Office of Water.

One (1) unnamed first order mapped hydroline is located within the Subject Site. Site investigations indicate that the closest top of bank stream measurement is **within 10m** of the Subject Site and as such a VRZ encroachment is applicable with offsets required that can be included within the BMP Lands within the Study Area. A Controlled Activity Approval (CAA) will be required to be submitted with the Development Application as works will occur within 40m of Waterfront Land.

It should be noted that the applicable 40m VRZ for Wallace Creek that is a 5<sup>th</sup> order stream encroaches the BMP Lands (refer **Table 12**), however as this area is not being impacted by the development no further consideration is required.

**Table 12 - VRZ Wallace Creek**

40m VRZ that encroaches BMP lands (indicated in brown) that lies outside of the Subject Site.



## 6.0 References

Department of Planning, Industry and Environment (2020) Natural Resources Access Regulator Waterfront Land Tool <https://www.dpie.nsw.gov.au/nrar/how-to-apply/controlled-activities/tools> accessed April 2023.

Department of Primary Industries Office of Water (2018) Guideline for Riparian Corridors on Waterfront Lands, [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0003/160464/licensing\\_approvals\\_controlled\\_activities\\_riparian\\_corridors.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0003/160464/licensing_approvals_controlled_activities_riparian_corridors.pdf), accessed April 2023.

NSW Government (2018) Determining Stream Order Fact Sheet; [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0020/172091/Determining-Strahler-stream-order-fact-sheet.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0020/172091/Determining-Strahler-stream-order-fact-sheet.pdf) accessed April 2023.

NSW Government (2021) Water Management (General) Regulation 2018 Hydroline spatial data, <https://trade.maps.arcgis.com/apps/webappviewer/index.html?id=07b967fd0bdc4b0099fc5be45b6d1392> accessed April 2023.

NSW Government (2022) SEED Portal Geocortex Viewer. Accessed April 2023.

New South Wales Office of Water (2012) Controlled activities on waterfront land - Guidelines for riparian corridors on waterfront land. Department of Primary Industries.

Strahler, A.N. (1952) Dynamic basis of geomorphology. Geological society of America bulletin, 63(9), pp.923-938.

Water Management (General) Regulation 2018, NSW Government (2018), Current version for 29 April 2022, Schedule 2 Stream order of a watercourse <https://legislation.nsw.gov.au/view/html/inforce/current/sl-2018-0480#sch.2> accessed April 2023.

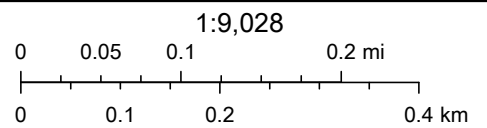


## **Appendix A – NRAR Hydroline Spatial Data**

# 527 Cessnock Road Gilleston Height



March 23, 2023



## **Appendix B – Author CVs**

# Brendon Young

## Curriculum Vitae

*Brendon works with AEP in the role of Ecologist. He graduated with a Bachelor of Applied Science (Honours) and a Masters in Environmental Management, majoring in fish conservation and management. Brendon has previously worked in large retail operations in staff and budget/data management, reporting and quality assurance which adds to the experience that he currently contributes to the AEP team.*

### Qualifications

- CPR and First Aid (Completed on 30/11/21)
- White Card (Completed on 11/02/22)

### Further Education & Training

- Master of Environmental Management (Natural Resources)
- Graduate Certificate of Fish Conservation and Management (Charles Sturt University)
- Bachelor of Applied Science (Fisheries) with Honours

### Fields of Competence

- Training with aquatic sampling techniques such as seine nets, gill nets and fyke nets.
- Training in the use of mist netting, bat harp traps, Elliot traps, pitfall traps and camera traps.
- Experience identifying fish, reptiles, insects, and plants to species level through honours research and other projects while studying.

### Relevant Employment History

**2022 – Present**

**Ecologist**

Anderson Environment & Planning, Newcastle

**2013-2022**

**Department Manager**

Woolworths Pty Ltd

Provision of leadership and coaching for a team of 5 to 20 members. Coach and guide daily activities to a high standard and achieve key performance indicators. Manage wage, sales, and wastage budgets. Plan for periodical events and long-term direction of the department.

**March 2019-Oct 2019**

**Produce Quality Control Officer**

Woolworths Pty Ltd

Inspection of produce as it arrives at the warehouse to ensure the required specifications for quality, size, weight and ripeness were met. Rejection of stock that did not meet company specification.

# BYRON DE JAGER

## Curriculum Vitae

*Byron works with AEP in the role of Ecologist has a Bachelor of Science, majoring in Natural Resource Management. Byron has experience in a variety of environmental work, in a professional and volunteer capacity, including flora, and field surveys, reporting and mapping, habitat restoration and community volunteering.*

### Qualifications

- Certificate III Conservation and Land Management, Ryde TAFE 2017
- Bachelor of Science, Sustainable Resource Management (GPA 5.1)

University of Newcastle

Relevant courses: Australian Flora, Restoration Ecology, Land Management, Catchment and Water Resource Management, Environmental Legislation. 2011-2015

### Further Education & Training

- Certificate II in Public Safety, through State Emergency Service (SES)
- Leadership fundamentals, SES
- Storm and Water Damage Operations, SES
- AQF3 Chemical user Certificate
- Chainsaw use statement of attainment: Feel small trees. Trim and cut felled trees
- First Aid Certificate, SES
- C-class Driver's License
- Cert IV Digital Media
- Cert II Office Applications for the Office TAFE Northern Sydney Institute

### Relevant Employment History

**October 2022- Present**

**Ecologist**

Anderson Environmental & Planning, Newcastle

**October 2019-present**

**Supervisor; Bush Regenerator**

Toolijooa Hunter Valley Special Projects Division  
Supervisor

**Mar – May 2014**

**Bushcare, Blackwall Mountain Landcare**

## Relevant Ecological Experience

**Oct- Dec 2015**

### **Trees in Newcastle, Environmental Sector Placement**

- Researched more water and power efficient irrigation specifically suitable to upgrading the nursery.
- Created a guide to help improve the existing system and installing the most efficient system possible in the new site including budget information
- Wrote a five-page report and presented findings to the Board

**Jun – Sept 2014**

### **Research assistant, Kooragang Island.**

- Assisted PhD Student with collecting data on frogs at night.
- Collected and identified frog species with careful hygiene and consideration to prevent transfer of pathogens
- Marked location using GPS releasing the frogs in the same place after tagging.

**Jun- Aug 2016**

### **Hunter Water; Catchment Management department**

- Database management including data entry, graphing and interpretation
- Imported Data from Lab Data program to Excel
- Explore and interpret data using Excel using graphs tables and formulas
- Updated procedures to latest format and information.
- WH & Safety induction including appropriate PPE, Take 5, incident reporting
- Water sample collecting from various sites around the catchment including drinking water in various locations in the catchment, supply test points and wastewater areas affected by high volumes of stormwater
- Introduction to water supply network including catchments, pumping stations, drinking treatment plants, reservoirs, wastewater treatment plants and recycling or disposal systems
- Learned to navigate and understand GIS data regarding the network

# Kelly Drysdale

## Curriculum Vitae

*Kelly works with AEP in the role of Ecology Project Manager. She has extensive experience in various land management operations in several regions, with both small and large enterprises, in Australia and internationally. Her strong environmental stewardship knowledge, lateral thinking, project and change management, business development, strategic planning and human resource management skills are adding value to the AEP team.*

### Qualifications

- Certificate IV in Training and Assessment TAE40110, TAFE Hunter Institute, NSW 2016
- Graduate Certificate in Business Administration (with honours), Newcastle University, Newcastle, NSW 2013
- Associate Diploma of Applied Science (VITICULTURE), Charles Sturt University, Wagga Wagga, NSW 1992

### Further Education & Training

- Australian Rural Leadership Foundation Program, Fellow 2011
- Class C NSW Drivers Licence Class, Defensive Driving, FL & experienced 4WD operator
- First Aid Certificate inc CPR 2021
- SafeWork NSW Construction White Card CGI1713214SEQ01
- Farm Chemical User Accreditation Certificate III (ChemCert Australia)
- Negotiation skills (Rogen International), Crucial conversations (ME Consulting)
- Media Training (Doyle Media Services)
- Various WHS management training, legislation and compliance courses, EEO, cultural competency and diversity in the workplace
- Workplace Trainer and Workplace Assessor
- Open Water PADI Dive Certificate

### Fields of Competence

- Field assessment including: targeted fauna and flora surveys, BAM plots, Koala Spot Assessment Technique (SAT) surveys, tree surveys, HBT and nest box inspections.
- Assessment of sites using the Biodiversity Assessment Method (BAM) under the Biodiversity Offsets Scheme, production of Biodiversity Development Assessment Reports and Ecological Assessment Reports
- Production of assessments against various legal instruments such as EPBC Act fauna and flora assessments, State Environmental Planning Policy Biodiversity and Conservation) 2021 – Chapter 4 Koala Habitat Protection 2021, State Environmental Planning Policy (Resilience and Hazards) 2021 – Chapter 2 Coastal Management, Water Management Act 2000 and the Environment Protection and Biodiversity Conservation Act 1999
- Bushfire threat analysis and reporting
- Liaison with clients/site/company/government representatives

## Relevant Employment History

**Feb 2021- Current Ecology Project Manager-** Anderson Environment & Planning, Newcastle, NSW

Assisting in the provision of consulting services to land, property, mining industry, legal and government sectors. Covering ecological, project management, environmental, planning services, advices, strategy and representation.

**Aug 2019 - July 2021 Business Development Manager - RLF**

Business development and strategic targeting of corporate and larger enterprises leveraging a vast network of contacts in the Australian Wine Industry and Agricultural sector to add value to farming systems with agronomic and fertiliser solutions.

**Jul 2015 - Aug 2019 Viticultural & Trade Resource Manager-** Hope Estate, Pokolbin, NSW

Operational and strategic management of five estate owned vineyards in NSW, WA & VIC. CRM & BDM of wine and beer portfolio of on/off premise sales on >1,800 customer base with PR responsibilities and hosting of events.

**Jul 2017 - Aug 2019 Casual teacher in Viticulture & Wine - Kurri Kurri Tafe NSW**

Revising, formulating and developing resources for and delivering all units of competency in the AHC51516 Diploma of Viticulture and strengthening relationships within the Hunter wine region.

**Jul 2014 – July 2015 Sales Acquisition Agent – Wine Selectors & Choice, NSW**

Wine appraisals, wine sales, developing staff training manuals, exceeding sales targets.

**Jan 2004 - May 2010 Viticultural Manager – Casella Family Brands, Yenda NSW**

Primarily responsible for the effective and efficient viticultural, land management operations and programs reporting to the company directors on 1,800ha with up to 160 staff. Primarily viticulture but also managed a large prune/plum orchard, broad acre cropping-dry and pivot, cattle, biodiversity tree planting program, compost making, winery waste water treatment plant and traded water.

**June 2002 - Jan 2004 Viticulturist - Brown Brothers, Milawa VIC**

Grower liaison for 84 growers and 5 diverse company owned vineyards; strategic plan development, asset assessments and evaluations.

**June 2001 - June 2002 One-year overseas travel - study/work tour**

Studied wine and agricultural markets in Asia and London, travelled through Italy, Switzerland and Spain's wine regions and worked vintage periods in Portugal, France and mostly in South Africa- Flagstone Wines, Cape Town, sourcing fruit from 48 vineyards across the Western Cape.

**May 2000 - June 2001 Viticultural Projects Manager – Nepenthe, Adelaide Hills**



Viticultural consultancy, contract management, development and management of investment projects, costing systems, reporting and management protocols.

**Jan 1998 - May 2000**  
SA

**General Manager** – Pertaringa Wines, McLaren Vale,

Strategic operational and financial planning for company land portfolio and brand development, including contract management for clients and winery liaison with 15 customer wineries.

**Dec 1992 - Jan 1998**

**Viticulturist** –Southcorp Wines, SA

Grower Liaison in McLaren Vale, Technical Officer in Barossa/Clare/Adelaide Hills and Riverland, Greenfield Vineyard Development in Barooga and Robe, and Vine Propagation Manager for the group successively.

**1993 - Vintages**

**Cellar hand** - Murphy-Goode Estate Winery- Alexander Valley, California USA and Willamette Valley Vineyards- Willamette Valley, Oregon USA and CSUR, Wagga Wagga, NSW

# **SIMON PURCELL**

## **Curriculum Vitae**

*Simon works with AEP in the role of Senior Ecologist. Simon has over 7 years of professional experience managing projects in the fields of terrestrial ecology, mining and mine rehabilitation and environmental management.*

### **Qualifications**

- Bachelor of Applied Science, Major Wildlife Science, University of Queensland Gatton 2013
- Certificate III in Animal Care and Management, Companion Animal Services (2008)

### **Further Education & Training**

- NSW Class C Driver's Licence

### **Fields of Competence**

- Terrestrial Ecology field survey, covering terrestrial flora and fauna
- Project Management

### **Relevant Employment History**

#### **2020 (November) -present Senior Ecologist**

Anderson Environment & Planning, Newcastle

- Currently employed by Anderson Environment & Planning to assist in the provision of consulting services to land, property, mining industry, legal and government sectors. Covering ecological, project management, environmental, planning services, advices, strategy and representation.

#### **2018-2019**

#### **Team Leader / Ecologist**

Ecotone Flora Fauna Consultants, Weipa, QLD

- Conducted client liaison meetings, providing ecological advice and recommendations for flora, fauna and land management, complying with Queensland state and Commonwealth environmental legislation.
- Wrote proposal and executed surveys for Prefeasibility studies and EIS on Western Cape York for multi-national mining company complying with Commonwealth environmental legislation.
- Negotiated increases to budget and survey requirements with the client in relation to ongoing changes and project requirements
- Led high level discussions with the client to provide new services.
- Developed wide scale camera monitoring program to assess presence /absence of EVNT fauna within the survey site.
- Complex logistical planning for remote work
- Co-developed and implemented new safety system within the business

- Mentored project managers through training, and leadership guidance to ensure quality and standards of business were met
- Managed human relation matters within the business
- Digitally transformed infield data collection through roll out of ArcGIS Collector, leading to the reduction in the use of paper in the field.

**2014-2018**

**Team Leader / Ecologist**

Ecotone Flora Fauna Consultants, Weipa, QLD

- Lead project manager (6 years) for all aspects of mine / drill preclearing environmental surveys across three different mine sites and exploratory sites, including during the construction phase of a new mine in the Weipa region.
- Project managed and participated in numerous annual EVNT projects that led to cultural and process practices changing within a multinational mining company.
- Played a critical role in maintaining client and stakeholder relationships and built stability with onsite leadership to further grow business opportunities.
- Maintained client confidentiality on sensitive and impactful projects.
- Ensured all projects complied with Queensland state and Commonwealth environmental legislation and clients Environmental Authority.
- Assisted in the development of growth and innovation projects such as cloud-based document storage solution to support multi-site users.

**2013-2014**

**Field Technician / Ecologist**

Ecotone Flora Fauna Consultants, Weipa, QLD

- Pre-clear flora and fauna mining and drilling programs
- Baseline fauna surveys of future mining areas
- Sensitive vegetation ground truthing
- EVNT flora and fauna surveys
- Seed Processing (storing, drying management of inventory)
- Mixing of seed in preparation for annual rehabilitation season

**2010-2012**

**Mine Operator and Trainer**

Rio Tinto, Weipa, QLD

- Acted as Crew Leader to manage 30 mine operators, production targets and minimising environmental impacts
- Skilled Caterpillar 992G, 993K & Komatsu WA900 Loader and 776D, 777F and 785C Caterpillar haul truck operator
- Crew Trainer/Assessor - completed five certificate IV modules to Training and Assessing.

**2009 - 2010**

**Parks and Garden Maintainer**

Spotless Group, Weipa, QLD

- Attained six competencies towards Certificate III Forest Growing and Management.
- Maintained local green spaces and houses.

**2009-2009**

**Vet Nurse**

Tableland Veterinary Service, Weipa, QLD

- Prepared surgery for surgeries including use of autoclave to sterilise implements
- Administered sedation via injections in the muscle and intravenously
- Prepared and monitored animals before, during and after surgeries
- Monitored animal and anaesthetic during surgery focussing on breath rate, colour of gum and pupil movements
- Took blood samples from veins and prepared samples of foreign bodies for analysis
- Successfully directed and carried out on-call emergency cases with vet assistance over the phone

**2003 – 2009**

**Manager**

The Pet Centre, Sydney, NSW

**2001 – 2003**

**Sales Assistant**

The Pet Centre, Sydney, NSW

- Implemented standard procedures for staff to follow
- Focussed on achieving a high level of OHS standards within the store
- Responsible for daily takings up to five thousand dollars per day
- Accountable for people management including rosters, recruitment and managing employee issues
- Responsible for management of store inventory
- Developed skills in handling a range of domestic animals
- Maintained animal's health and welfare in store and complied with state laws and regulations
- Analysed store's and customer's aquarium water quality
- Developed sound knowledge of animals including their origin, identification and general requirements

## **Relevant Volunteer Experience**

**2012**

**Fauna Spotter / Field Assistant**

Humble Bee Films

- Volunteered as a fauna spotter/field assistant with Dr Brad Purcell and Humble Bee Films in a ten day research camp, during the production of the natural history documentary "Dingo".

**2012**

**Volunteer Ecological Field Assistant**

Rio Tinto, Weipa, QLD

- Participated in an ethno-botanical workshop with Rio Tinto Alcan Land and Rehabilitation team.
- Participated as a field technician during pre-mining survey work. The work included assessing flora and the land formations to identify buffer zones for natural drainage systems and sensitive areas in the Andoom mine site Weipa.

**2012**

**Fauna Technician**

Brad Purcell PhD,

Greater Blue Mountains World Heritage Area

- Field technician for Brad Purcell during his doctoral research project on dingoes in the Greater Blue Mountains World Heritage Area. Developed skills in use of VHF radio tracking to retrieve collars, triangulation method to determine positioning of dingoes or deployed collars and traversing bushland.