

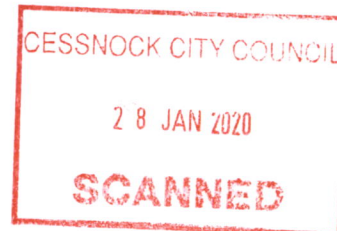
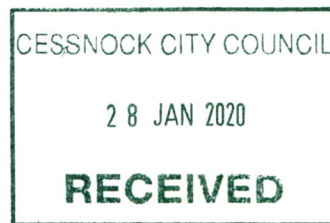


The Honourable Anthony Roberts MP
Minister for Counter Terrorism and Corrections

Ref: OM20/316

Mr Bob Pynsent
Mayor Cessnock City Council
PO Box 152
CESSNOCK NSW 2325

Dear Mayor Pynsent



CESSNOCK CORRECTIONAL CENTRE ACCESS ROAD

Further to our meeting 12 November 2019, Corrective Services NSW (CSNSW) now has concluded its investigation of possible new access road routes to Cessnock Correctional Centre.

As Council is aware, in October 2016 as part of the expansion of Cessnock Correctional Centre the NSW Government agreed to consider alternate road access options to the Correctional Centre. Investigations commenced in 2017 and have involved extensive analysis of various routes as alternates to the current Lindsay Street access. The final Option Analysis report is now available and is enclosed for reference. The report is publically available on the 'Better Prisons' website <https://www.correctiveservices.justice.nsw.gov.au/better-prisons>

After considering the merits and viability of various options, the Government has agreed to support and fund construction of a new access road from Cessnock Correctional Centre connecting to Occident St, Nulkaba which is an approximate combination of options 3a and 3b in the report attached and supplied to the General Manager. The final road alignment will be determined through detailed engineering and negotiation with the Ministry of Health and a private land owner. CSNSW is ready to commence this process and I am seeking that Cessnock City Council indicate their support for this investment so that planning and design work can commence in early 2020. Council endorsement and co-operation is essential to enable the project to proceed as it requires the voluntary acquisition, subdivision and rezoning of land; and Planning Approval which can only occur with the full support of Council.

I am aware the preference of Council and the Community was for a road route entirely on Health / Calvary Aged Care land connecting to Wine Country Drive. After lengthy consideration and consultation, these routes have been determined as unviable following discussions with the Ministry of Health who noted the impact on critical Health facilities. Further, I have legal advice advising that the existing 'right of access' over the Calvary site cannot be used as a vehicle access to the Correctional Centre.

At a recent meeting with CSNSW, Council staff requested advice regarding a possible route to Kerlew Street via the wooded area bounded by the Cemetery to the East and Occident Street to the West. I am advised use of this land was ruled out early in the options process as the site contains the ecological communities of 'Lower Hunter Spotted Gum – Ironbark Forest' and the 'Hunter Lowland Redgum Forest'. Both of these ecological communities have 'endangered ecological community' status in New South Wales.

If you require further information on this matter, please do not hesitate to contact me or CSNSW Executive Director Infrastructure Mr Leon Taylor on 02 8061 9309 or leon.taylor@justice.nsw.gov.au.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'AR', is written over the 'Yours sincerely' text.

22 JAN 2020

Anthony Roberts MP

Minister for Counter Terrorism and Corrections

Encl: Cessnock Correctional Complex Access Road Option Report Analysis. 13 December 2019

cc: Clayton Barr MP, Member for Cessnock



Report

Cessnock Correctional Complex Access Road Option Analysis

Prepared for Department of Justice

By Beca Pty Ltd (Beca)
ABN: 85 004 974 341

13 December 2019



Revision History

| Revision N° | Prepared By | Description | Date |
|-------------|-------------|---|------------|
| A | | First draft | 22/09/2017 |
| B | | Final | 2/11/2017 |
| C | | Revised final incorporating client's comments | 1/12/2017 |
| D | | Addition of Options 6A and 6B | 25/06/2019 |
| E | | Final Report | 13/12/2019 |

Document Acceptance

| Action | Name | Signed | Date |
|--------------|------|--------|------------|
| Prepared by | | | 13/12/2019 |
| Reviewed by | | | 13/12/2019 |
| Approved by | | | 13/12/2019 |
| on behalf of | | | |

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Appendices

Appendix 1 – Plans

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1 Background

The Department of Justice (DoJ) is proposing to expand the existing Cessnock Correctional Complex (the Complex) located on Lindsay Street, Nulkaba on the northern fringe of Cessnock, NSW. A REF has previously been prepared for these proposed works.

At present, the Complex is accessed via residential streets on Council maintained roads, primarily Lindsay St and Kerlew St and branching service roads. Current access is shown in Figure 1 below. The DoJ would like to determine alternative access options for the Complex so that Lindsay Street no longer needs to be used for access.

Beca has been commissioned to undertake the investigation, development and assessment of options and design of the new access road. As part of the investigation a site inspection was undertaken on 17 August 2017 with representatives from DoJ – Justice Infrastructure. The final version of the options report assessing Options 1, 2, 3A, 3B, 4 and 5, was submitted in December 2019.

Following stakeholder feedback on the initial options report, in May 2019 two additional route options have been put forward by the Department for assessment. These two options, 6A and 6B, were developed in discussion with DoJ.

The purpose of this report is to outline the options that have been considered, the approach taken to assessing these options and a summary for the outcomes of the assessment. This report should be read in conjunction with the Cessnock Correction Centre Access Road Optioneering Analysis (refer Appendix 2) which provides further detail about the specific criteria considered when assessing the options.



Figure 1: Current access to the Cessnock Correctional Complex via Lindsay St.

2 Description of Options

A total of eight alignment options have been investigated and developed by Beca for analysis of their suitability, constructability and potential risks/constraints. The preferred option will be determined by representatives from DoJ – Justice Infrastructure.

It is acknowledged that Nulkaba Public School has a petition against the access road works. Our understanding is that the impact on this school is equivalent for all Options described in this report. Figure 2 shows the location of Nulkaba Public School in relation to the Complex and the proposed access road works.



Figure 2: Nulkaba Public School in relation to the proposed access road works

Figure 3 shows the location of the options developed. These are described in further detail below and shown on Drawings SK00, SK01 Sheet 1 – SK01 Sheet 7 included in Appendix 1. All options, with the exception of Options 5, 6A and 6B, follow the existing access from Wine Country Drive on Kerlew Street.

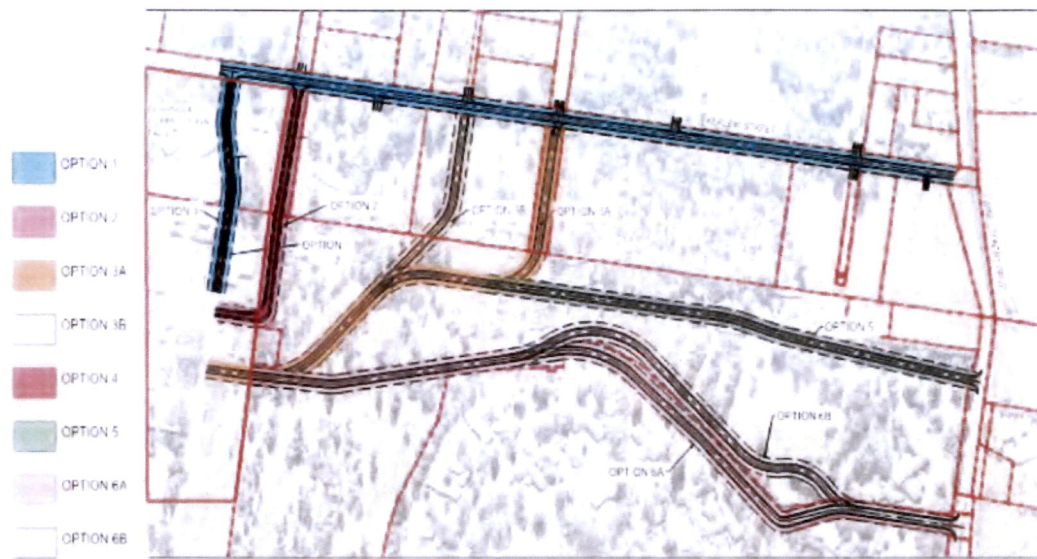


Figure 3: Access road alignment options

2.1 Option 1

Once on Kerlew Street, Option 1 continues west down Kerlew Street for approximately 820m. Connecting to the Complex via a proposed new section of road, generally following the existing construction access, linking Kerlew Street to the existing internal roads within the Complex. This option maximises the utilisation of existing road infrastructure, however, impacts on the operation of the Complex.

2.2 Option 2

Option 2 has a similar arrangement to Option 1, continuing down Kerlew Street from Wine Country Drive for approximately 755m. A new road would be constructed connecting Kerlew Street to the Complex, the alignment of which follows the western boundary of Lot 72 DP 755252 and then connects to existing internal roads within the Complex. This option maximises the utilisation of existing road infrastructure, however, has the most impact on Lot 72 DP 755252.

2.3 Option 3A

Option 3A follows Kerlew Street for approximately 460m before turning onto the southern-leg of Occident Street. The alignment then follows an existing internal road which traverses Lot 2 DP 1078864 before tying in with existing internal roads within the Complex. It is noted that the existing road through Lot 2 DP1078864 is classified as a road but it is expected that it would require upgrading to support the increased vehicle movements. This option disrupts fewer residents on Kerlew Street, however, requires vegetation removal and the demolition of operational structures.

2.4 Option 3B (Variation of Option 3A)

Option 3B follows a similar alignment to Option 3A, however, instead of accessing the Complex via Occident Street, Option 3B instead extends down Kerlew Street for 600m. A new road would be constructed and tie-in with the existing road on Lot 2 DP 1078864, following the same alignment as Option 3A to access the Complex. This option disrupts fewer residents on Kerlew Street, however, requires vegetation removal and purchase or

2.5 Option 4 (Variation of Options 1 and 2)

Option 4 is a combination of Options 1 and 2 creating a one-way loop road. Vehicles entering the Complex follow the same alignment as Option 1 while vehicles leaving the Complex follow the Option 2 alignment. This option maximises the utilisation of existing road infrastructure, however, has the same negative impacts as Options 1 and 2.

2.6 Option 5

Option 5 involves access from Wine Country Drive, however, instead of following Kerlew Street the access point would be a new road constructed approximately 200m south of the existing intersection with Kerlew Street and approximately 150m north of the retirement access. This alignment extends for approximately 530m along the north of Lot 2 DP 1078864 through land owned by the Department of Health before connecting to the existing road network on this site, following the same curved alignment as Options 3A and 3B to access the Complex. This Option limits the impact on the residents on Kerlew Street.

2.7 Option 6A

Option 6A utilises existing Calvary Cessnock Retirement Community access road from Wine Country Drive. This alignment follows this road for approximately 200m before turning right along an existing right of access within the northern boundary of Lot 11 DP 1169419 towards the Health Records building. The alignment bears left at the Health Records building, which will likely result in a relocation of this building, travelling along a new alignment within Lot 2 DP 1078864 before tying into existing internal roads within the Complex.

2.8 Option 6B (Variation of Option 6A)

Option 6B uses the same access road as in Option 6A; however, a new road will be constructed from the Storage building onwards to keep the alignment solely in Lot 2 DP 1078864 (land owned by the Department of Health). The new alignment will continue along the northern boundary of Lots 10 and 11 DP 1169419, and will likely require the relocation of the Health Records building. The road will then tie into the existing internal roads within the Complex. This option therefore eliminates the need to acquire land from the Calvary Cessnock Retirement Community.

3 Approach to Options Analysis

The Options Analysis is included in Appendix 2. A two-staged approach has been taken to assessing the eight different alignment options.

Firstly, a ranking of the different alignment options from 1 to 8 (a score of 1 being preferred / the least impact, a score of 8 being less-preferred) across a number of different criteria was applied. Where all options are equal for a given criteria they have all been given a ranking of 1. In the case where two are considered equal they are both given a ranking of 1 and the next criteria is given a ranking of 3 (and so on).

The ranking of criteria in the Options Analysis relied upon an assessment against the following factors - presence / absence of construction, environmental, social, planning and programming. These factors were identified by the DoJ and Beca as the key potential constraints and opportunities for the access road optioneering process.

Following the initial ranking of the options against the key criteria, weighting factors were applied to emphasise the options which best reflected the cost, social impacts and facility operations criteria

which are understood to be of most importance to DoJ. The weighting has been developed following a workshop discussion on 19/10/2017 and with reference to meeting minutes received from Robert McQueen, dated 27/10/2017 (refer Appendix 3 for attendees and meeting notes). Beca have assigned weightings to the best of our judgement based on these discussions.

A percentage approach was taken to weighting, with all criteria receiving a nominal 1% as a starting point. Six criteria relating to the features highlighted above then received additional weighting so that the overall weighting scores added up to 100%. The weighting factors were, therefore, entirely arbitrary and their only function was to differentiate the options rather than being considered as a performance scoring system. This ranking and weighting method is a typical approach used to support road optioneering studies [e.g. Multi Criteria Assessment used for Safe Roads Alliance project for NZTA] and aligns to the principles of the hazard likelihood component of Australian Risk Assessment Guidelines AS/NZS ISO 31000:2009. The six criteria in order of highest weighting first were: cost of construction (16%), cost of demolition (16%), cost of maintenance to DoJ (13 %), reconfiguration requirements (10 %), socio-economic impacts (10 %) and cost of maintenance to Cessnock City Council (6%).

An overall score is given to each options by multiplying the pre-weighted score by the weighted score for each sub-criteria. The scores are then added together to obtain the total score for each option. A lower overall score represents a preferred option.

We have used the LotSearch report (see Appendix 4) for the scoring of the environmental sub-criteria.

4 Option Analysis Outcomes

The following tables show overall ranking and a summary of the Options Analysis outcomes. Overall, across the criteria analysed, Option 2 has the lowest ranking indicating that it has fewer potential constraints with respect to the other options assessed. It is noted that the difference between the total scores for Option 2 and Option 3B is marginal, and thus these options may be deemed as equivalent. The two latest options, 6A and 6B, scored quite highly, and are thus the least preferable along with Option 5.

| Option | Option 1 | Option 2 | Option 3A | Option 3B | Option 4 | Option 5 | Option 6A | Option 6B |
|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Total Score | 237 | 225 | 370 | 226 | 380 | 492 | 490 | 558 |
| Overall Ranking | 3 | 1 | 4 | 2 | 5 | 7 | 6 | 8 |

The table below provides a summary of the full Options Analysis provided in Appendix 2. This is broken down by the criteria assessed to give a snapshot of how each option performs.

| Criteria | Summary of Option Analysis |
|----------|---|
| Social | Option 3B has the lowest score indicating it is the preferred option for this criteria. This reflects the initial engagement that has been undertaken with the community. |

| Criteria | Summary of Option Analysis |
|---------------|--|
| | <p>Option 1 scores higher than option 3B as the road alignment passes more private properties along Kerlew Street.</p> <p>Option 3A follows due to its impact on the retirement village and property acquisition requirements.</p> <p>Option 2 and Option 4 score the same overall value for the social sub-criteria. This is reflective of the impacts on Kerlew Street properties.</p> <p>Options 5 and 6A are the least preferred options for this criteria, followed closely by 6B. They are considered to have the greatest impact as they result in the disruption of a community facility, which impacts the future use and development potential of the site.</p> |
| Construction | <p>Option 2 has the lowest overall score across the construction sub-criteria indicating that it is the preferred option for this criteria.</p> <p>Option 1 has the next lowest score due to the required demolition of a structure as well as potential access safety risks. This is followed by 3B which has a higher score due to a combination of new road construction and maintenance costs for DoJ.</p> <p>Option 3A and Option 4 have the fourth highest scores for construction. For Option 3A this reflects the required demolition of two structures and maintenance costs for DoJ. Option 4 has a high score due to the length of this option being 350 metres longer than the others and therefore costlier as well as the potential access safety risks.</p> <p>Option 6B has the highest score for construction as it requires the greatest length of new road construction which has higher construction costs, followed by Option 5. For Options 5, 6A and 6B, the increased length of road on private property will require both higher maintenance costs for DoJ and the demolition of buildings within the retirement village.</p> |
| Environmental | <p>Option 3B has the lowest overall score across the environmental sub-criteria, followed by Option 1. Option 2 has the third lowest score, by virtue of higher scores for bushfire prone land, ecological constraints and visual impacts.</p> <p>This is followed by Option 4 due to higher scoring for bushfire risk, ecological, sustainability and waste management sub-criteria.</p> <p>Option 3A and option 5 received high scores in regards to environmental factors. Both Options received high scores for air quality impacts and contaminated land associated with proximity to the retirement home facilities and the requirement to demolish a building which may contain asbestos. Option 3A also scored high for soil management issues while Option 5 received a high score for visual impacts.</p> <p>Options 6A and 6B were the least preferable options, scoring highly on a number of sub-criteria. Both options received high scores for air quality impacts and contaminated land associated with proximity to the retirement home facilities and the requirement to demolish a building which may contain asbestos. Both options also require the removal of substantial roadside</p> |

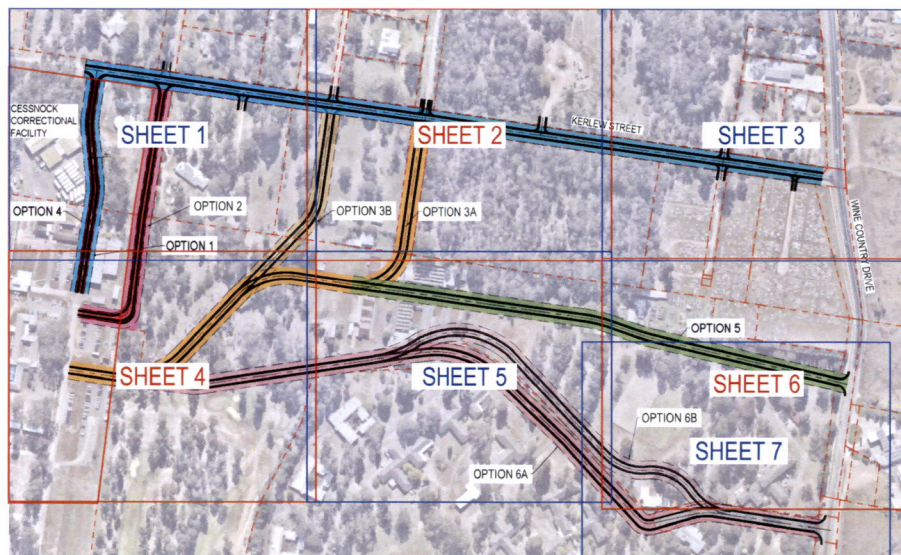
| Criteria | Summary of Option Analysis |
|--------------------|---|
| | vegetation, leading to a poor sustainability score, and will also have the greatest visual impact. |
| Planning Approvals | Options 1, 2 and 4 all have the same overall scores for the Planning Approvals sub-criteria, reflecting use of an existing road. These options are highly preferred in the Planning Approvals compared to the other options. Options 3A, 3B, 6A and 6B all scored very similarly, but significantly higher than Options 1, 2 and 4. Option 5 had the highest score across the Planning Approvals sub-criteria due to referrals for vegetation clearance and the presence of underground infrastructure. |
| Program | <p>Option 3B has the lowest score across the program sub-criteria indicating it is the preferred option for this criteria.</p> <p>This is followed by Option 2 then Option 1. While both of these Options require some reconfiguration, this will be undertaken on DoJ land and is therefore considered to have a lesser impact on program consideration.</p> <p>Option 4 requires additional reconfiguration (as a combination of Options 1 and 2), however, is also on DoJ land.</p> <p>Options 5, 6A and 6B require significant reconfiguration of the retirement facility. Option 6A will also have complications regarding staging, and so has the most undesirable of these options related to Program.</p> |

5 Risks and Assumptions

In addition to the risks and assumptions included in the Option Analysis (Appendix 2), we also note the following:

- It has been assumed that the intersection of Kerlew Street and Wine Country Drive is appropriate for the additional operational traffic volume. Refer to Appendix 5 for assessment undertaken in April 2018.
- The geotechnical assessment of options is based on a desktop analysis only. Further investigations will be undertaken once a preferred alignment is agreed.
- We have assumed that existing internal roads, parking and manoeuvring areas within the complex will remain unchanged. Any upgrades/alterations to these areas are understood to be out of scope and therefore have not been included in our option analysis.
- From a planning and approvals standpoint, the assessment provided of each of the options is based upon publicly available ecological mapping and data and the Cessnock LEP.
- It is assumed no new road reserve allocations will be created for any of the options.
- It is understood that initial (high level) consultation has been undertaken with the owner of DP7. The Options Analysis has been undertaken on this basis. Note that Option 3B relies on the voluntary procurement of this private land; if this is not readily achievable for an acceptable value in accordance with Government Guidelines, Option 3B would not be viable.
- We have assumed that the Department of Health land can be acquired.
- Boundary titles have been acquired from GIS mapping data exported from NSW Spatial Service Portal (1 July 2016), which uses NSW Spatial Data Catalogue (NSDC).

Appendix 1 – Plans



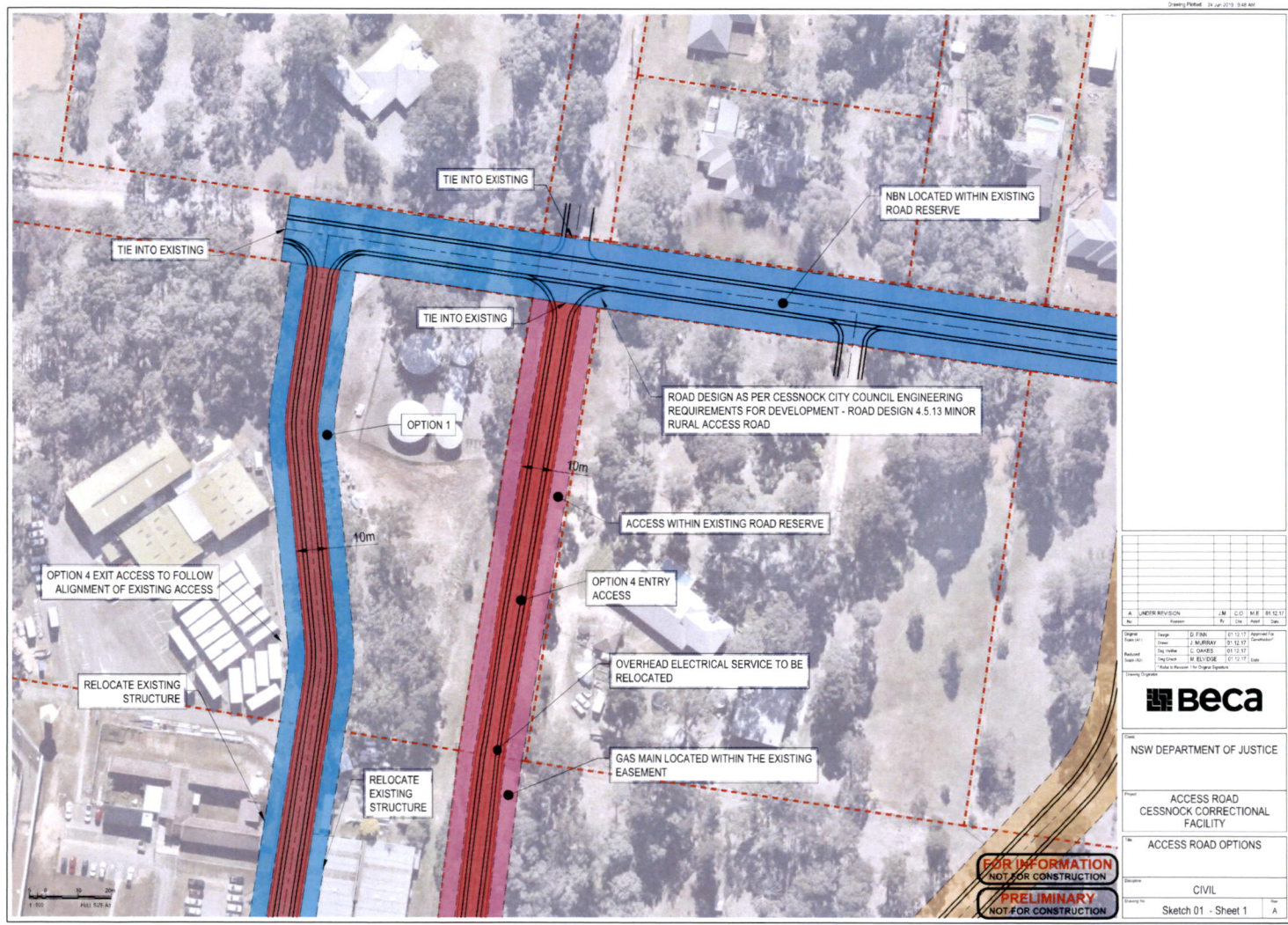
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| | Drawn | J. MURRAY | 14.06.15 | |
| Revised Scale (A): | Day Worker | D. EVANS | 14.06.15 | |
| | Draw Check | F. MQUES | 14.06.15 | |
| *Note to Revisions 1 for Original Signature | | | | |



COVER SHEET AND SHEET LAYOUT PLAN

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| Drawing No. | SK00 | Rev. B |





| A. LAYOUT REVISIONS | | Rev. | By | Date |
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| Drawn | Design | Checked | Reviewed |
| J. BURRILL | D. F. BARR | J. BURRILL | D. F. BARR |
| 12/12/17 | 12/12/17 | 12/12/17 | 12/12/17 |
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NSW DEPARTMENT OF JUSTICE

ACCESS ROAD
CESSNOCK CORRECTIONAL
FACILITY

ACCESS ROAD OPTIONS

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|-------------|---------------------|
| Discipline | CIVIL |
| Drawing No. | Sketch 01 - Sheet 2 |

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| No. | Revision | By | Date | App'd | Comments |
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| Original Scale (A) | Design | D. FINN | 01.12.17 | | Approved for Construction? |
| | Drawn | J. MURRAY | 01.12.17 | | |
| Revised Scale (A) | Day Worker | C. GARD | 01.12.17 | | |
| | Day Check | M. ELVIDGE | 01.12.17 | Done | |

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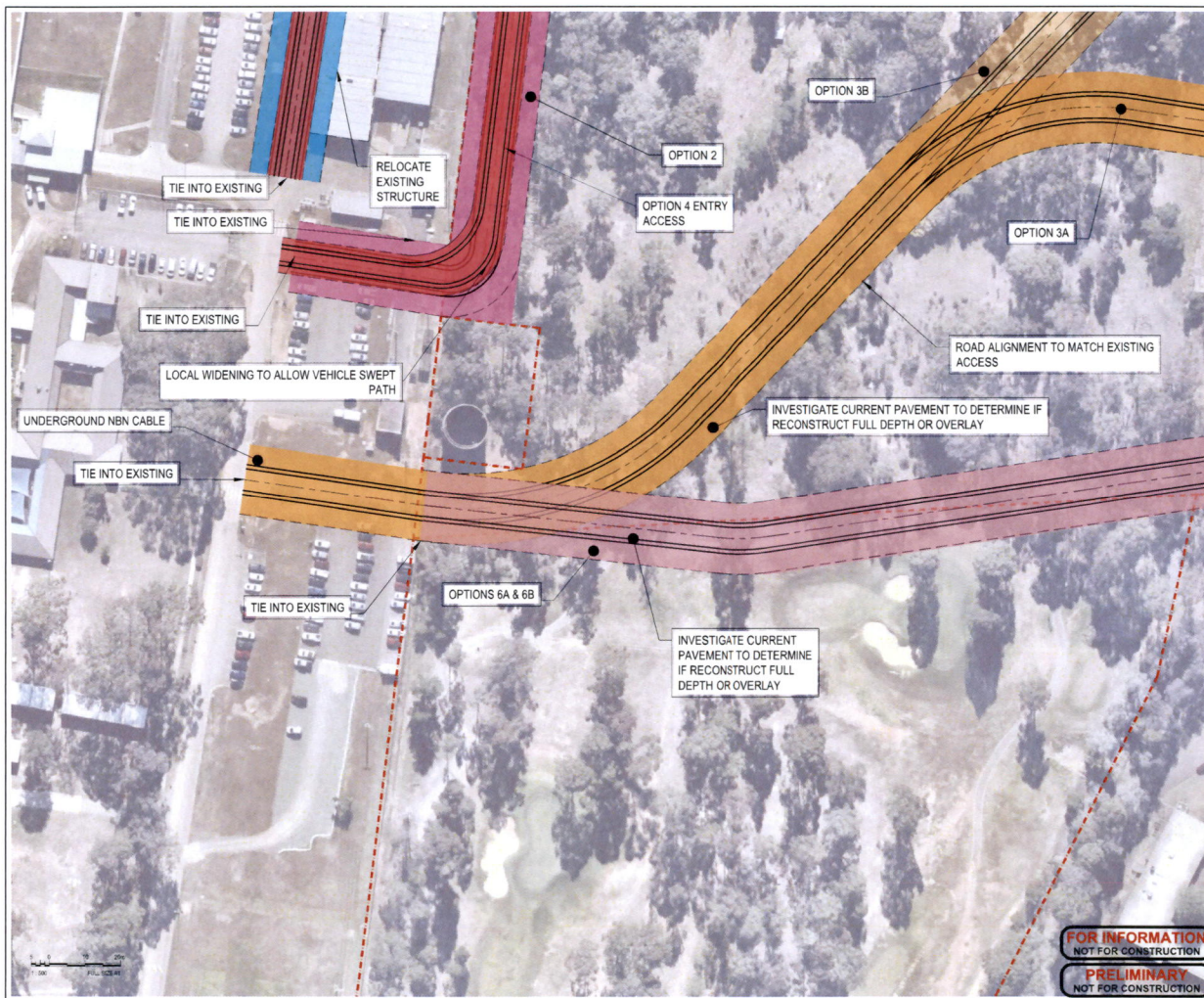
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FACILITY

CIVIL

Drawing No. **Sketch 01 -**

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| B. OPTION 6A AND 6B ADDED | | | | 1.0 | 1.0 | 2.0 | 2.0 | 1.0 | 1.0 |
| B. OPTION 6A AND 6B ADDED | | | | 1.0 | 1.0 | 2.0 | 2.0 | 1.0 | 1.0 |

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| Access Road | NSW Department of Justice | A. SHIELDS | J. SHIELDS | D. SHIELDS | 1:100 |
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NSW DEPARTMENT OF JUSTICE

ACCESS ROAD
CESSNOCK CORRECTIONAL FACILITY

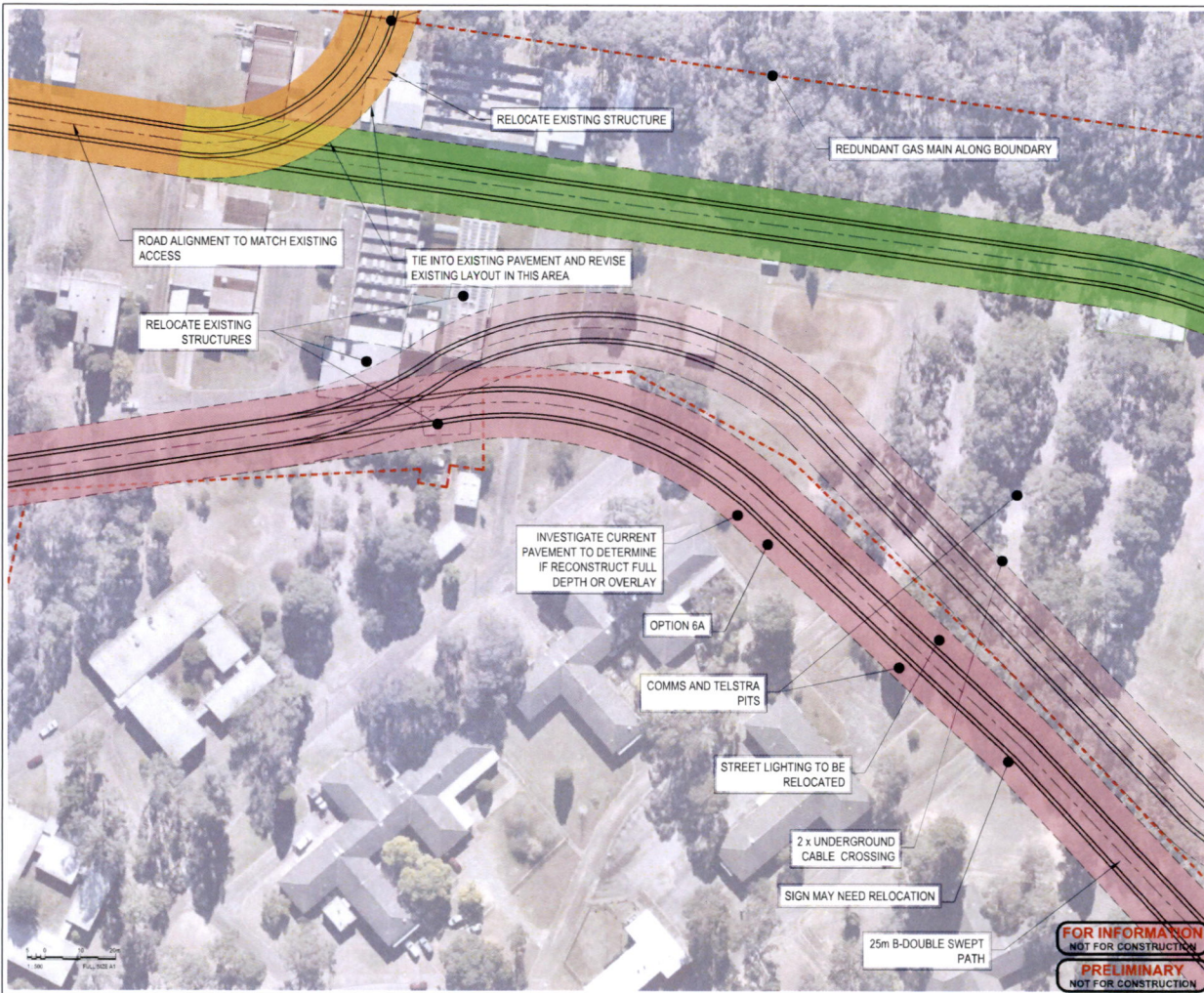
ACCESS ROAD OPTIONS

CIVIL

Sketch 01 - Sheet 4

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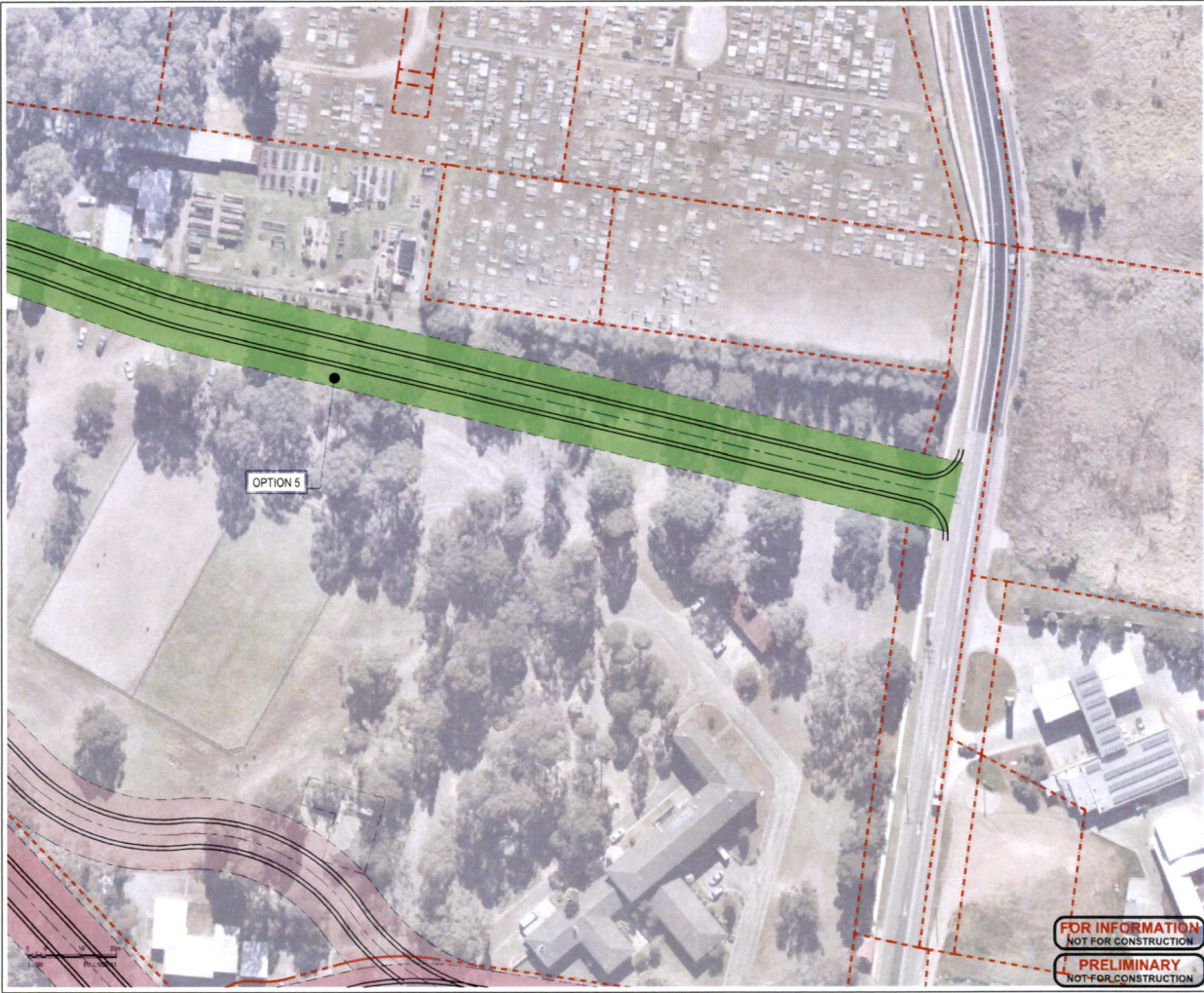


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| Checked by | Rev | D. ELAND | 14.36 | 13 | 14.36 |
| Drawn by | Rev | J. BULLOCK | 14.36 | 13 | 14.36 |
| Checked by | Rev | D. ELAND | 14.36 | 13 | 14.36 |

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| NSW DEPARTMENT OF JUSTICE | |
| ACCESS ROAD CESSNOCK CORRECTIONAL FACILITY | |
| ACCESS ROAD OPTIONS | |
| Project | CIVIL |
| Sheet No. | Sketch 01 - Sheet 5 |

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|---|---------|------------|----------|----------|----------|----|
| B - OPTION 5A AND 5B ADDED | | 2.57 | 2.52 | 21.8 | 14.16 | 13 |
| C - LANCER REVISION | | 1.58 | 2.02 | 14.8 | 15.13 | 13 |
| No. | Revised | By | On | Time | Date | |
| 1 | Issue | A. SHIELDS | 14.08.13 | 14.08.13 | 14.08.13 | |
| 2 | Issue | J. SHIELDS | 14.08.13 | 14.08.13 | 14.08.13 | |
| 3 | Issue | D. ELWOOD | 14.08.13 | 14.08.13 | 14.08.13 | |
| 4 | Issue | J. SHIELDS | 14.08.13 | 14.08.13 | 14.08.13 | |
| Drawing Originator: Beca | | | | | | |
| NSW DEPARTMENT OF JUSTICE | | | | | | |
| Project: ACCESS ROAD CESSNOCK CORRECTIONAL FACILITY | | | | | | |
| Title: ACCESS ROAD OPTIONS | | | | | | |
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Appendix 2 – Option Analysis

■ BECA

■ BECA

Disclaimer: The ranking of criteria in the Optima Analysis only indicates the previous relations of complexity, environmental, social, planning and program features identified by Department of Justice and does not indicate results for the current cost-reducing process. Following the initial ranking of criteria, weighting factors were applied to the criteria in the Optima Analysis. The intention of applying weighting is not to emphasize the criteria which best reflected the criteria that are understood to be of most importance to DoJ. This weighting

Disclaimer: The ranking of criteria in the Optima Analysis only indicates the previous relations of complexity, environmental, social, planning and program features identified by Department of Justice and does not indicate results for the current cost-reducing process. Following the initial ranking of criteria, weighting factors were applied to the criteria in the Optima Analysis. The intention of applying weighting is not to emphasize the criteria which best reflected the criteria that are understood to be of most importance to DoJ. This weighting

Appendix 4 – LotSearch Report

Lotsearch



Environmental Risk and Planning Report

Lindsay Street, Cessnock, NSW 2325

Report Date: 30 Aug 2017 13:21:19

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features. You should obtain independent advice before you make any decision based on the information within the report. The detailed terms applicable to use of this report are set out at the end of this report.

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Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading "LC" or "LocConf". These codes lookup to the following location confidences:

| LC Code | Location Confidence |
|---------|---|
| 1 | Georeferenced to the site location / premise or part of site |
| 2 | Georeferenced with the confidence of the general/approximate area |
| 3 | Georeferenced to the road or rail |
| 4 | Georeferenced to the road intersection |
| 5 | Feature is a buffered point |
| 6 | Land adjacent to Georeferenced Site |
| 7 | Georeferenced to a network of features |

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

| Dataset Name | Custodian | Supply Date | Currency Date | Update Frequency | Dataset Buffer (m) | No. Features Onsite | No. Features within 100m | No. Features within Buffer |
|--|---|-------------|---------------|------------------|--------------------|---------------------|--------------------------|----------------------------|
| Cadastre Boundaries | Department Finance, Services & Innovation | 30/08/2017 | 30/08/2017 | Daily | - | - | - | - |
| Topographic Data | Department Finance, Services & Innovation | 10/04/2015 | 01/04/2015 | As required | - | - | - | - |
| List of NSW contaminated sites notified to EPA | Environment Protection Authority | 28/08/2017 | 10/08/2017 | Monthly | 1000 | 0 | 0 | 0 |
| Contaminated Land: Records of Notice | Environment Protection Authority | 28/08/2017 | 28/08/2017 | Monthly | 1000 | 0 | 0 | 0 |
| Former Gasworks | Environment Protection Authority | 28/08/2017 | 16/01/2017 | Monthly | 1000 | 0 | 0 | 0 |
| National Waste Management Site Database | Geoscience Australia | 07/03/2017 | 15/11/2012 | Quarterly | 1000 | 0 | 0 | 0 |
| EPA PFAS Investigation Program | Environment Protection Authority | 28/08/2017 | 28/08/2017 | Monthly | 2000 | 0 | 0 | 0 |
| EPA Other Sites with Contamination Issues | Environment Protection Authority | 22/06/2017 | 22/06/2017 | Quarterly | 1000 | 0 | 0 | 0 |
| Licensed Activities under the POEO Act 1997 | Environment Protection Authority | 14/07/2017 | 14/07/2017 | Monthly | 1000 | 0 | 1 | 2 |
| Delicensed POEO Activities still Regulated by the EPA | Environment Protection Authority | 14/07/2017 | 14/07/2017 | Monthly | 1000 | 0 | 0 | 1 |
| Former POEO Licensed Activities now revoked or surrendered | Environment Protection Authority | 14/07/2017 | 14/07/2017 | Monthly | 1000 | 0 | 3 | 3 |
| UPSS Environmentally Sensitive Zones | Department of Environment, Climate Change and Water (NSW) | 14/04/2015 | 12/01/2010 | As required | 1000 | 0 | 0 | 1 |
| UBD Business Directory 1982 (Premise & Intersection Matches) | Hardie Grant | | | Not required | 150 | 0 | 0 | 0 |
| UBD Business Directory 1982 (Road & Area Matches) | Hardie Grant | | | Not required | 150 | - | 15 | 15 |
| UBD Business Directory 1970 (Premise & Intersection Matches) | Hardie Grant | | | Not required | 150 | 0 | 0 | 0 |
| UBD Business Directory 1970 (Road & Area Matches) | Hardie Grant | | | Not required | 150 | - | 9 | 9 |
| UBD Business Directory 1950 (Premise & Intersection Matches) | Hardie Grant | | | Not required | 150 | 0 | 0 | 0 |
| UBD Business Directory 1950 (Road & Area Matches) | Hardie Grant | | | Not required | 150 | - | 12 | 12 |
| UBD Business Directory Drycleaners & Motor Garages/Service Stations (Premise & Intersection Matches) | Hardie Grant | | | Not required | 1000 | 0 | 0 | 2 |
| UBD Business Directory Drycleaners & Motor Garages/Service Stations (Road & Area Matches) | Hardie Grant | | | Not required | 1000 | - | 6 | 6 |
| Points of Interest | Department Finance, Services & Innovation | 01/02/2017 | 01/02/2017 | Annually | 1000 | 0 | 3 | 27 |
| Tanks (Areas) | Department Finance, Services & Innovation | 01/02/2017 | 01/02/2017 | Annually | 1000 | 0 | 0 | 0 |
| Tanks (Points) | Department Finance, Services & Innovation | 01/02/2017 | 01/02/2017 | Annually | 1000 | 0 | 0 | 0 |
| Major Easements | Department Finance, Services & Innovation | 01/02/2017 | 01/02/2017 | As required | 1000 | 0 | 1 | 3 |
| State Forest | Department Finance, Services & Innovation | 01/02/2017 | 29/06/2016 | As required | 1000 | 0 | 0 | 0 |
| NSW National Parks and Wildlife Service Reserves | NSW Office of Environment and Heritage | 01/02/2017 | 31/12/2016 | Annually | 1000 | 0 | 0 | 0 |
| Hydrogeology Map of Australia | Commonwealth of Australia (Geoscience Australia) | 08/10/2014 | 17/03/2000 | As required | 1000 | 1 | 1 | 1 |
| Groundwater Boreholes | NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation; Commonwealth of Australia (Bureau of Meteorology) 2015 | 21/03/2016 | 01/12/2015 | Annually | 2000 | 0 | 0 | 2 |
| Geological Units 1:250,000 | NSW Department of Industry, Resources & Energy | 20/08/2014 | | None planned | 1000 | 2 | - | 3 |
| Geological Structures 1:250,000 | NSW Department of Industry, Resources & Energy | 20/08/2014 | | None planned | 1000 | 0 | - | 0 |

| Dataset Name | Custodian | Supply Date | Currency Date | Update Frequency | Dataset Buffer (m) | No. Features Onsite | No. Features within 100m | No. Features within Buffer |
|---|---|-------------|---------------|------------------|--------------------|---------------------|--------------------------|----------------------------|
| Naturally Occurring Asbestos Potential | NSW Department of Industry, Resources & Energy | 04/12/2015 | 24/09/2015 | Unknown | 1000 | 0 | 0 | 0 |
| Soil Landscapes | NSW Office of Environment and Heritage | 12/08/2014 | | None planned | 1000 | 2 | - | 2 |
| Standard Local Environmental Plan Acid Sulfate Soils | NSW Planning and Environment | 07/10/2016 | 07/10/2016 | As required | 500 | 0 | - | - |
| Dryland Salinity - National Assessment | National Land and Water Resources Audit | 18/07/2014 | 12/05/2013 | None planned | 1000 | 1 | 1 | 1 |
| Dryland Salinity Potential of Western Sydney | NSW Office of Environment and Heritage | 12/05/2017 | 01/01/2002 | None planned | 1000 | - | - | - |
| Mining Subsidence Districts | Department Finance, Services & Innovation | 13/07/2017 | 01/07/2017 | As required | 1000 | 0 | 0 | 0 |
| SEPP 14 - Coastal Wetlands | NSW Planning and Environment | 17/12/2015 | 24/10/2008 | Annually | 1000 | 0 | 0 | 0 |
| SEPP 26 - Littoral Rainforest | NSW Planning and Environment | 17/12/2015 | 05/02/1988 | Annually | 1000 | 0 | 0 | 0 |
| SEPP 71 - Coastal Protection | NSW Planning and Environment | 17/12/2015 | 01/08/2003 | Annually | 1000 | 0 | 0 | 0 |
| SEPP Major Developments 2005 | NSW Planning and Environment | 09/03/2013 | 25/05/2005 | Under Review | 1000 | 0 | 0 | 0 |
| SEPP Strategic Land Use Areas | NSW Planning and Environment | 01/08/2017 | 28/01/2014 | Annually | 1000 | 1 | 1 | 2 |
| Local Environmental Plan - Land Zoning | NSW Planning and Environment | 30/06/2017 | 23/06/2017 | Quarterly | 1000 | 5 | 9 | 36 |
| Local Environmental Plan - Minimum Subdivision Lot Size | NSW Planning and Environment | 30/06/2017 | 23/06/2017 | Quarterly | 0 | 2 | - | - |
| Local Environmental Plan - Height of Building | NSW Planning and Environment | 30/06/2017 | 23/06/2017 | Quarterly | 0 | 0 | - | - |
| Local Environmental Plan - Floor Space Ratio | NSW Planning and Environment | 30/06/2017 | 23/06/2017 | Quarterly | 0 | 0 | - | - |
| Local Environmental Plan - Land Application | NSW Planning and Environment | 30/06/2017 | 13/04/2017 | Quarterly | 0 | 1 | - | - |
| Local Environmental Plan - Land Reservation Acquisition | NSW Planning and Environment | 30/06/2017 | 23/06/2017 | Quarterly | 0 | 0 | - | - |
| State Heritage Items | NSW Office of Environment and Heritage | 01/08/2017 | 27/05/2016 | Quarterly | 1000 | 0 | 0 | 0 |
| Local Heritage Items | NSW Planning and Environment | 30/06/2017 | 16/06/2017 | Monthly | 1000 | 0 | 2 | 5 |
| Bush Fire Prone Land | NSW Rural Fire Service | 01/08/2017 | 09/06/2017 | Quarterly | 1000 | 3 | 3 | 3 |
| Lower Hunter and Central Coast Regional Vegetation Survey | NSW Office of Environment and Heritage | 28/02/2015 | 16/11/2009 | As required | 1000 | 6 | 6 | 9 |
| RAMSAR Wetlands | Commonwealth of Australia Department of the Environment | 08/10/2014 | 24/06/2011 | As required | 1000 | 0 | 0 | 0 |
| ATLAS of NSW Wildlife | NSW Office of Environment and Heritage | 30/08/2017 | 30/08/2017 | Daily | 10000 | - | - | - |

Aerial Imagery 2016

Lindsay Street, Cessnock, NSW 2325



Contaminated Land & Waste Management Facilities

Lindsay Street, Cessnock, NSW 2325

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

| Map Id | Site | Address | Suburb | Activity | Management Class | Status | Location Confidence | Dist (m) | Direction |
|--------|----------------------|---------|--------|----------|------------------|--------|---------------------|----------|-----------|
| N/A | No records in buffer | | | | | | | | |

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

| EPA site management class | Explanation |
|---|---|
| Contamination being managed via the planning process (EP&A Act) | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment. |
| Contamination currently regulated under CLM Act | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices. |
| Contamination currently regulated under POEO Act | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register. |
| Contamination formerly regulated under the CLM Act | The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act. |
| Contamination formerly regulated under the POEO Act | The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act). |
| Contamination was addressed via the planning process (EP&A Act) | The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act). |
| Ongoing maintenance required to manage residual contamination (CLM Act) | The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices. |
| Regulation being finalised | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised. |
| Regulation under the CLM Act not required | The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required. |
| Under assessment | The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order. |

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Contaminated Land & Waste Management Facilities

Lindsay Street, Cessnock, NSW 2325

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

| Map Id | Name | Address | Suburb | Notices | Area No | Location Confidence | Distance | Direction |
|--------|----------------------|---------|--------|---------|---------|---------------------|----------|-----------|
| N/A | No records in buffer | | | | | | | |

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
<http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm>

Former Gasworks

Former Gasworks within the dataset buffer:

| Map Id | Location | Council | Further Info | Location Confidence | Distance | Direction |
|--------|----------------------|---------|--------------|---------------------|----------|-----------|
| N/A | No records in buffer | | | | | |

Former Gasworks Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

| Site Id | Owner | Name | Address | Suburb | Landfill | Reprocess | Transfer | Location Confidence | Distance | Direction |
|---------|----------------------|------|---------|--------|----------|-----------|----------|---------------------|----------|-----------|
| N/A | No records in buffer | | | | | | | | | |

Waste Management Facilities Data Source: Australian Government Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

EPA PFAS Investigation Program

Lindsay Street, Cessnock, NSW 2325

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

| Id | Site | Address | Location Confidence | Distance | Direction |
|-----|----------------------|---------|---------------------|----------|-----------|
| N/A | No records in buffer | | | | |

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

EPA Other Sites with Contamination Issues

Lindsay Street, Cessnock, NSW 2325

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill

Sites within the dataset buffer:

| Site Id | Site Name | Site Address | Dataset | Comments | Location Confidence | Distance | Direction |
|---------|----------------------|--------------|---------|----------|---------------------|----------|-----------|
| N/A | No records in buffer | | | | | | |

EPA Other Sites with Contamination Issues: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Current EPA Licensed Activities

Lindsay Street, Cessnock, NSW 2325



EPA Activities

Lindsay Street, Cessnock, NSW 2325

Licensed Activities under the POEO Act 1997

Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

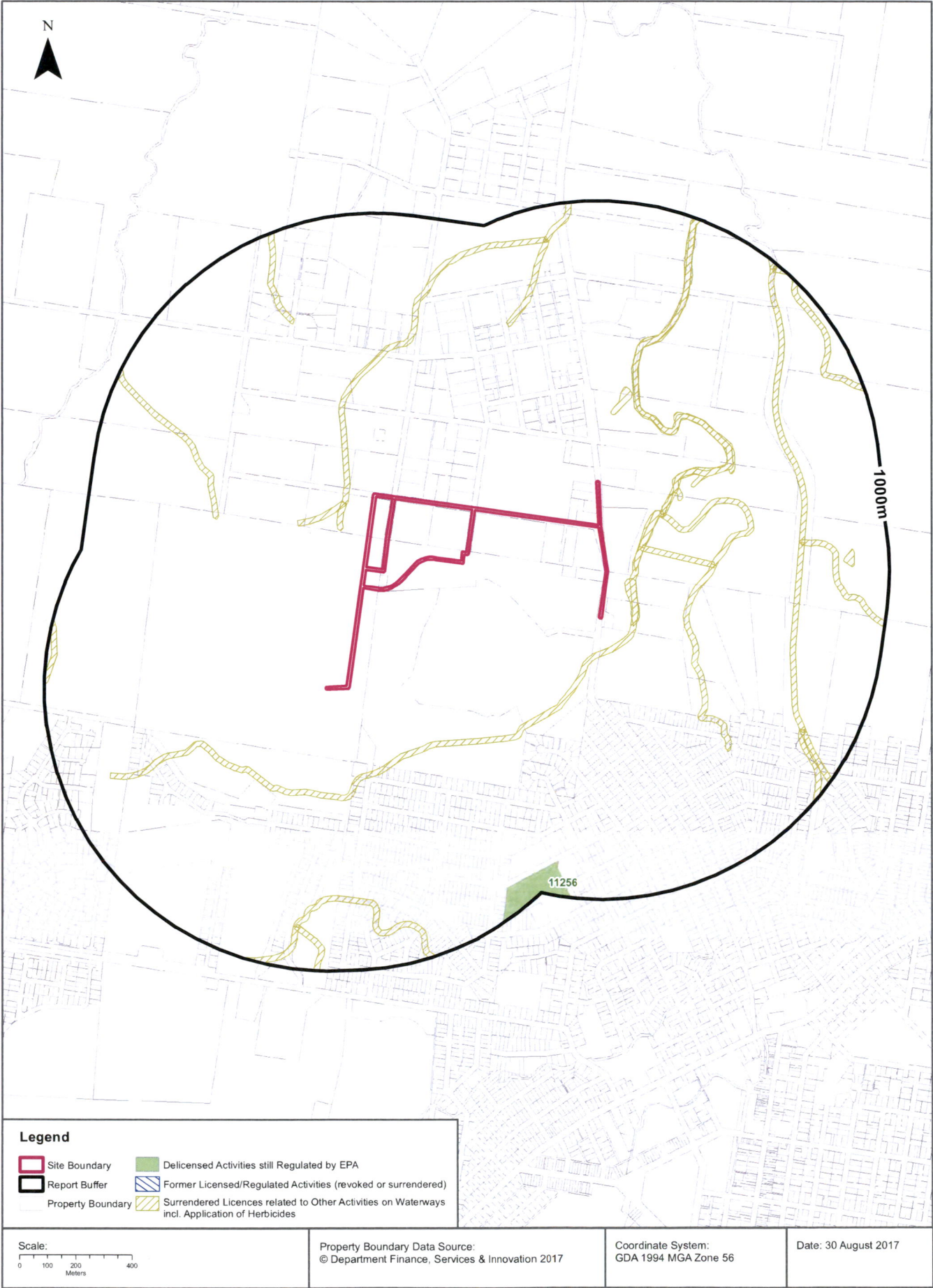
| EPL | Organisation | Name | Address | Suburb | Activity | Loc Conf | Distance | Direction |
|------|--------------------------|-------------------------------------|---------------------|----------|---|----------|----------|-----------|
| 4708 | CESSNOCK CITY COUNCIL | - | - | CESSNOCK | Other activities | 7 | 64m | East |
| 227 | HUNTER WATER CORPORATION | CESSNOCK WASTEWATER TREATMENT WORKS | OFF GOVERNMENT ROAD | CESSNOCK | Sewage treatment processing by small plants | 1 | 693m | East |

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Lindsay Street, Cessnock, NSW 2325



EPA Activities

Lindsay Street, Cessnock, NSW 2325

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

| Licence No | Organisation | Name | Address | Suburb | Activity | Loc Conf | Distance | Direction |
|------------|--|----------------------------|---------|----------|--|----------|----------|-----------|
| 11256 | HUNTER AND NEW ENGLAND AREA HEALTH SERVICE | CESSNOCK DISTRICT HOSPITAL | View St | CESSNOCK | Hazardous, Industrial or Group A Waste Generation or Storage | 1 | 878m | South |

Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

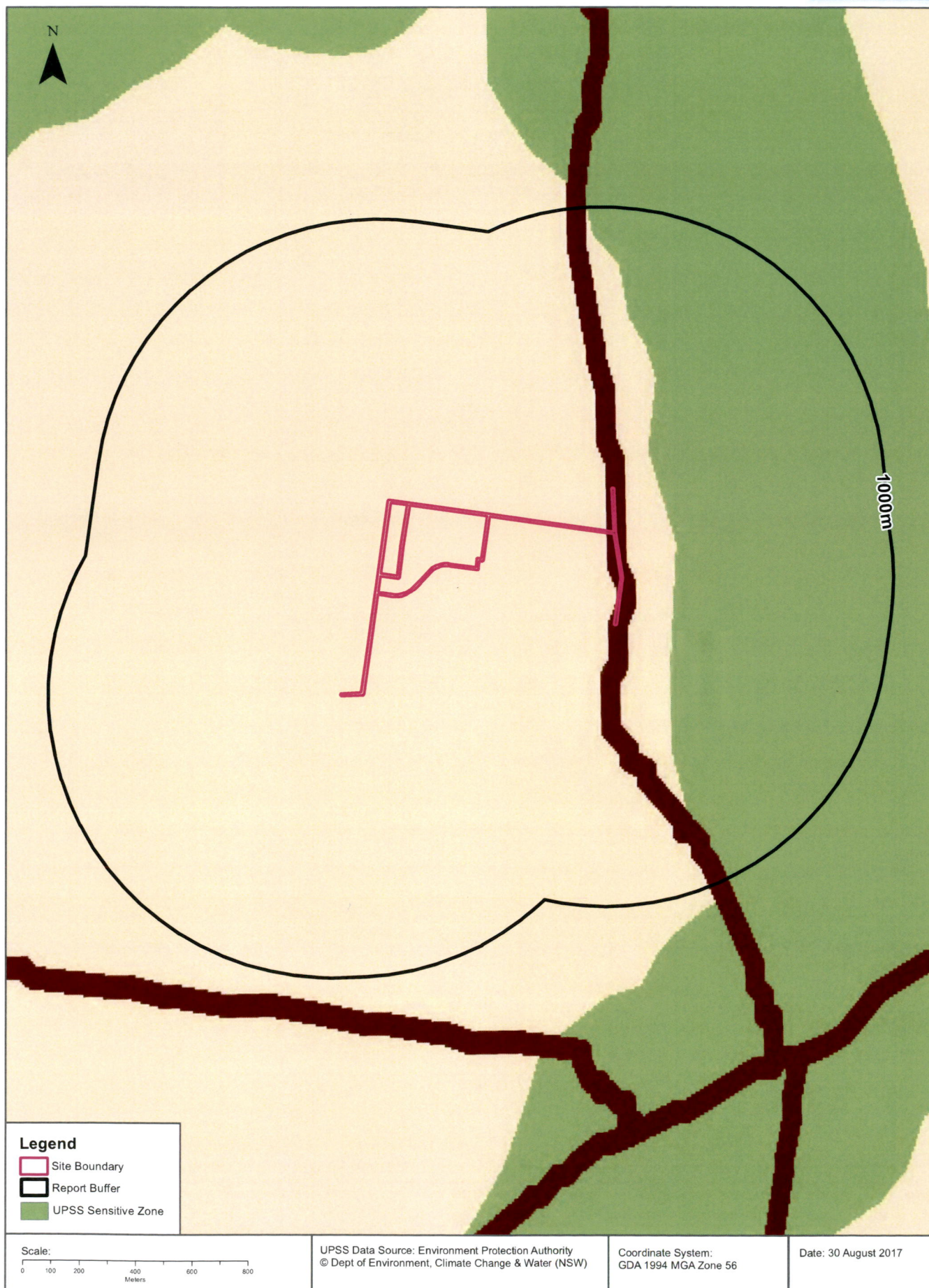
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

| Licence No | Organisation | Location | Status | Issued Date | Activity | Loc Conf | Distance | Direction |
|------------|---|--|-------------|-------------|---|----------|----------|-----------|
| 4653 | LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD | WATERWAYS THROUGHOUT NSW | Surrendered | | Other Activities / Non Scheduled Activity - Application of Herbicides | 7 | 64m | - |
| 4838 | Robert Orchard | Various Waterways throughout New South Wales - SYDNEY NSW 2000 | Surrendered | | Other Activities / Non Scheduled Activity - Application of Herbicides | 7 | 64m | - |
| 6630 | SYDNEY WEED & PEST MANAGEMENT PTY LTD | WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148 | Surrendered | | Other Activities / Non Scheduled Activity - Application of Herbicides | 7 | 64m | - |

Former Licensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

UPSS Sensitive Zones

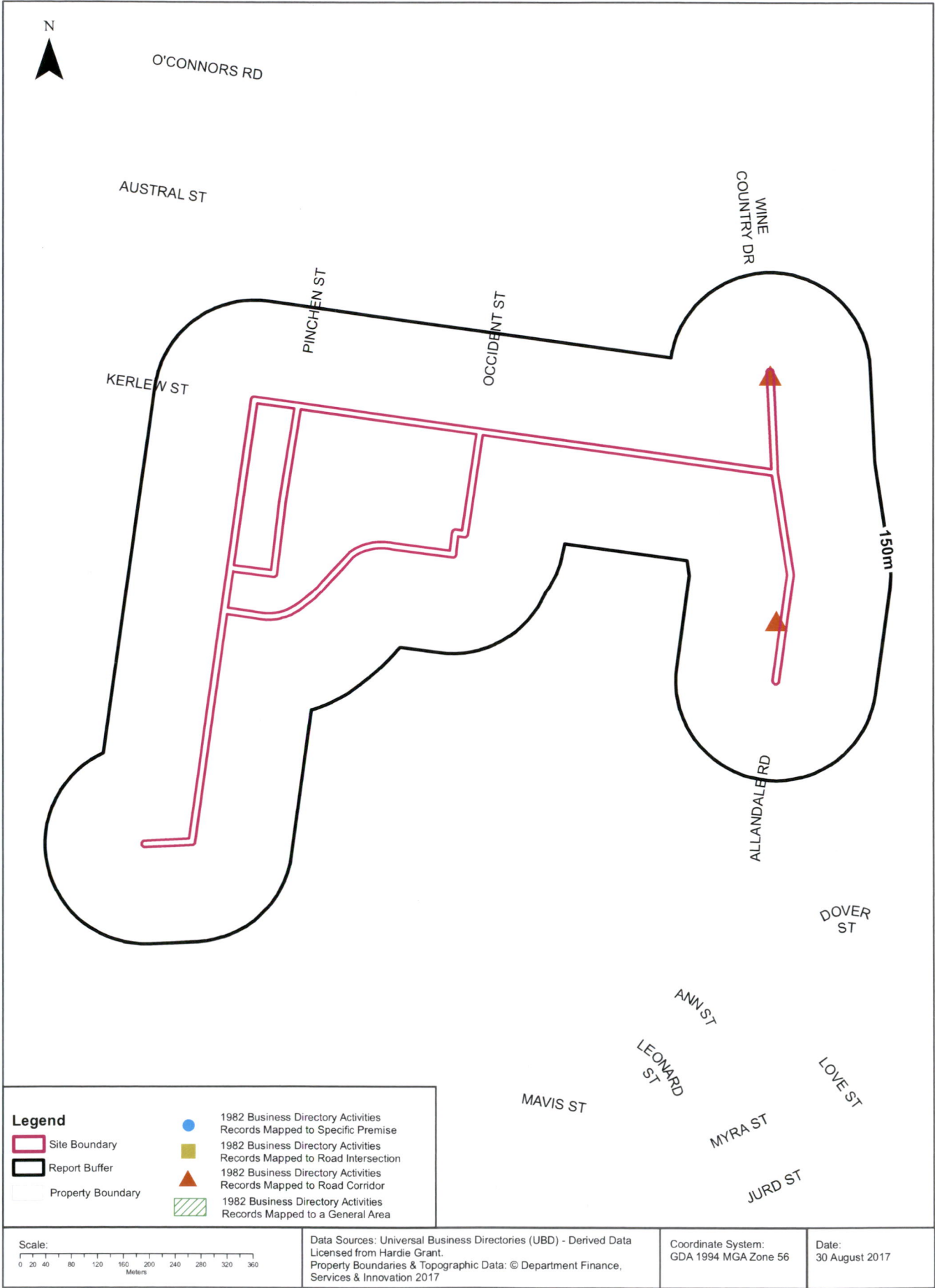
Lindsay Street, Cessnock, NSW 2325





1982 Historical Business Directory Records

Lindsay Street, Cessnock, NSW 2325



Historical Business Directories

Lindsay Street, Cessnock, NSW 2325

1982 Business Directory Records Premise or Road Intersection Matches

Records from the 1982 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

| Business Activity | Premise | Ref No. | Location Confidence | Distance to Feature Point | Direction |
|-------------------|----------------------|---------|---------------------|---------------------------|-----------|
| N/A | No records in buffer | | | | |

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1982 Business Directory Records Road or Area Matches

Records from the 1982 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

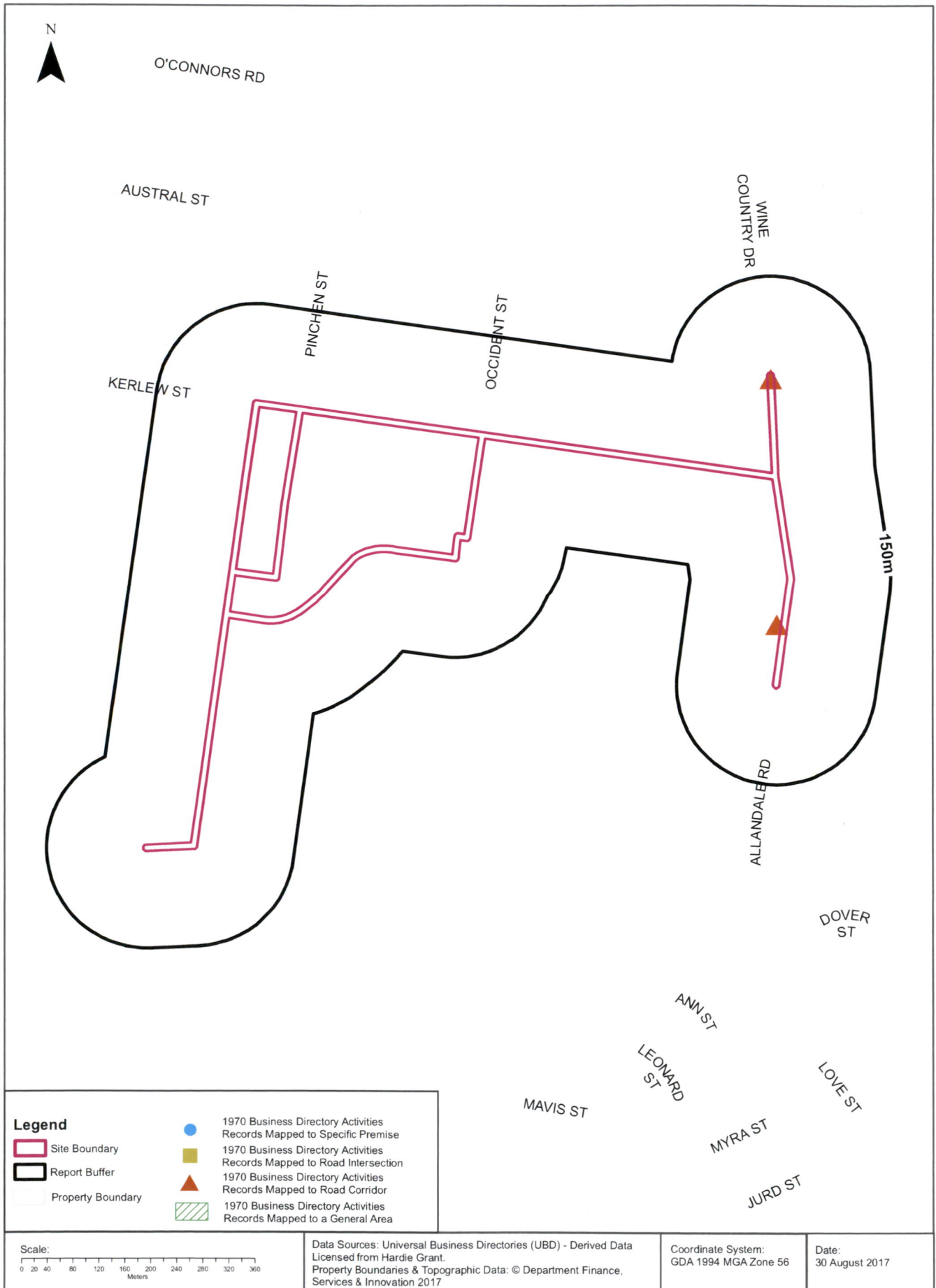
| Business Activity | Premise | Ref No. | Location Confidence | Distance to Road Corridor or Area |
|---|---|---------|---------------------|-----------------------------------|
| HOSPITALS &/OR HEALTH CENTRES. | Allendale Hospital, 121 Allendale Rd Cessnock | 165920 | Road Match | 0m |
| MOTOR ACCESSORIES &/OR SPARE PARTS - RETAIL | Allendale Service Station, 120 Allendale Rd Cessnock | 166000 | Road Match | 0m |
| MOTOR BRAKE SPECIALISTS. | Allendale Service Station, 120 Allendale Rd Cessnock | 166018 | Road Match | 0m |
| MOTOR CLUTCH SPECIALISTS. | Allendale Service Station, 120 Allendale Rd Cessnock | 166041 | Road Match | 0m |
| MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. | Allendale Service Station, 120 Allendale Rd Cessnock | 166052 | Road Match | 0m |
| MOTOR RADIATOR SPECIALISTS &/OR REPAIRERS. | Allendale Service Station, 120 Allendale Rd Cessnock | 166091 | Road Match | 0m |
| MOTOR STEERING SPECIALISTS. | Allendale Service Station, 120 Allendale Rd Cessnock | 166098 | Road Match | 0m |
| MOTOR TRANSMISSION SPECIALISTS. | Allendale Service Station, 120 Allendale Rd Cessnock | 166107 | Road Match | 0m |
| MOTOR TUNING SPECIALISTS. | Allendale Service Station, 120 Allendale Rd Cessnock | 166110 | Road Match | 0m |
| CAMPING GROUNDS &/OR CARAVAN PARKS. | Cessnock Caravan Park, Allendale Rd., Nulkaba Cessnock | 165754 | Road Match | 0m |
| PIPE &/OR PIPE FITTINGS MFRS. &/OR DIST. | Cessnock Potteries Pty..Ltd., Allendale Rd Cessnock | 166142 | Road Match | 0m |
| MIXED BUSINESSES. | Clifford, E. H. & H. M., Allendale Rd., Nulkaba Cessnock | 165977 | Road Match | 0m |
| MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. | Clifford, E. H. & H. M., Allendale Rd., Nulkaba Cessnock | 166065 | Road Match | 0m |
| CONCRETE READY MIXED SUPPLIERS. | Mitchell's Cement Products Pty. Ltd., Allendale Rd Cessnock | 165800 | Road Match | 0m |
| GOVERNMENT DEPARTMENTS. | Post Office, Allendale Rd., Nulkaba Cessnock | 165878 | Road Match | 0m |

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1970 Historical Business Directory Records

Lindsay Street, Cessnock, NSW 2325



Historical Business Directories

Lindsay Street, Cessnock, NSW 2325

1970 Business Directory Records Premise or Road Intersection Matches

Records from the 1970 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

| Business Activity | Premise | Ref No. | Location Confidence | Distance to Feature Point | Direction |
|-------------------|----------------------|---------|---------------------|---------------------------|-----------|
| N/A | No records in buffer | | | | |

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1970 Business Directory Records Road or Area Matches

Records from the 1970 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

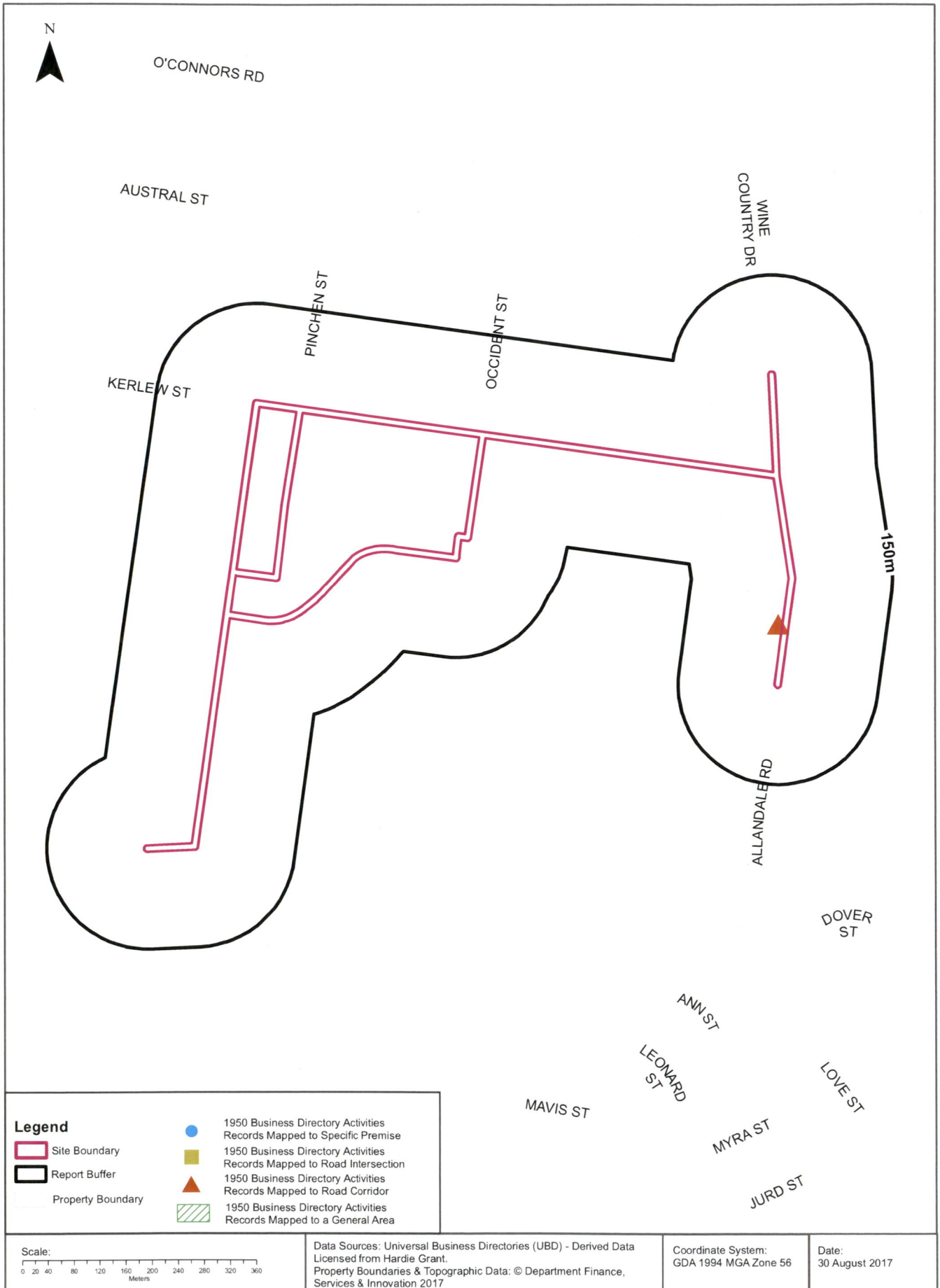
| Business Activity | Premise | Ref No. | Location Confidence | Distance to Road Corridor or Area |
|---|---|---------|---------------------|-----------------------------------|
| MOTOR SERVICE STATIONS- PETROL, OILS, ETC. | Allandale Distributing Co., Allandale Rd., Greater Cessnock | 639867 | Road Match | 0m |
| POULTRY DEALERS &/OR WSALE &/OR RETAILERS | Allandale Distributing Co., Allandale Rd., Greater Cessnock | 639926 | Road Match | 0m |
| HOSPITALS & HEALTH CENTRES | Allendale Hospital, Allendale Rd., Greater Cessnock | 639690 | Road Match | 0m |
| CAMPING GROUNDS &/OR CARAVAN PARKS | Cessnock Caravan Park, Allandale Rd., Greater Cessnock | 639514 | Road Match | 0m |
| PIPE BENDERS/FABRICATORS | Cessnock Potteries Pty. Ltd. Allandale Road, Cessnock, Newcastle | 633037 | Road Match | 0m |
| PIPES & PIPE FITTINGS- MFRS. &/OR DIST. | Cessnock Potteries Pty. Ltd., Allandale Rd., Greater Cessnock | 639917 | Road Match | 0m |
| MOTOR SERVICE STATIONS- PETROL, OILS, ETC. | Clifford, E. H. & H. M., Allandale Rd., Nulkaba, Greater Cessnock | 639872 | Road Match | 0m |
| MIXED BUSINESSES | Clifford, E. H. & H. M., Allendale Rd., Nulkaba, Greater Cessnock | 639778 | Road Match | 0m |
| GOVERNMENT DEPARTMENTS | Post Office, Allendale Rd., Nulkaba, Greater Cessnock | 639656 | Road Match | 0m |

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant



1950 Historical Business Directory Records

Lindsay Street, Cessnock, NSW 2325



Historical Business Directories

Lindsay Street, Cessnock, NSW 2325

1950 Business Directory Records Premise or Road Intersection Matches

Records from the 1950 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

| Business Activity | Premise | Ref No. | Location Confidence | Distance to Feature Point | Direction |
|-------------------|----------------------|---------|---------------------|---------------------------|-----------|
| N/A | No records in buffer | | | | |

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Business Directory Records Road or Area Matches

Records from the 1950 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

| Business Activity | Premise | Ref No. | Location Confidence | Distance to Road Corridor or Area |
|--|---|---------|---------------------|-----------------------------------|
| MOTOR GARAGES & ENGINEERS | Bradstreet, T. J. and Sons, Allendale Rd., Cessnock | 161441 | Road Match | 0m |
| PIPE MANUFACTURERS | Cessnock Potteries Pty. Ltd. Allendale Rd. , Cessnock | 161490 | Road Match | 0m |
| BUTCHERS-RETAIL | Davies, R. and Sons, Allendale Rd., Cessnock | 161103 | Road Match | 0m |
| AERATED WATER & CORDIAL MANUFACTURERS | Ellis, J., Allendale Rd., Cessnock | 161035 | Road Match | 0m |
| ENGINEE MECHANIRS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL | Hancock, J. W., Allendale Rd., Cessnock | 161236 | Road Match | 0m |
| MOTOR GARAGES & ENGINEERS | Hancock, J. W., Allendale Rd., Cessnock | 161445 | Road Match | 0m |
| WELDERS-ELECTRIC &/OR OXY | Hancock, J. W., Allendale Rd., Cessnock | 161603 | Road Match | 0m |
| GROCERS & GENERAL STOREKEEPERS | Harcher, W. A., Allendale Rd., Cessnock | 161308 | Road Match | 0m |
| GROCERS & GENERAL STOREKEEPERS | Heslop, T. H., Allendale Rd., Cessnock | 161309 | Road Match | 0m |
| GROCERS & GENERAL STOREKEEPERS | Olympic Cafe, Allendale Rd., Cessnock | 161322 | Road Match | 0m |
| MONUMENTAL MASONS | Roberts, E. B., Allendale Rd., Cessnock | 161423 | Road Match | 0m |
| BEAUTY SALONS & LADIES' HAIRDRESSERS | Thompson, M., Allendale Rd., Cessnock | 161075 | Road Match | 0m |

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Lindsay Street, Cessnock, NSW 2325

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer:

| Business Activity | Premise | Ref No. | Year | Location Confidence | Distance to Feature Point | Direction |
|---|---|---------|------|---------------------|---------------------------|------------|
| MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. | Heslop, T. & Sons, 73 Allandale Rd Cessnock | 166075 | 1982 | Premise Match | 671m | South East |
| MOTOR SERVICE STATIONS- PETROL, OILS, ETC. | Heslop, T. H. & M. M., 73 Allandale Rd., Greater Cessnock | 639878 | 1970 | Premise Match | 671m | South East |

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Lindsay Street, Cessnock, NSW 2325

Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

| Business Activity | Premise | Ref No. | Year | Location Confidence | Distance to Road Corridor or Area |
|---|---|---------|------|---------------------|-----------------------------------|
| MOTOR SERVICE STATIONS- PETROL, OILS, ETC. | Allendale Distributing Co., Allendale Rd., Greater Cessnock | 639867 | 1970 | Road Match | 0m |
| MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. | Allendale Service Station, 120 Allendale Rd Cessnock | 166052 | 1982 | Road Match | 0m |
| MOTOR GARAGES & ENGINEERS | Bradstreet, T. J. and Sons, Allendale Rd., Cessnock | 161441 | 1950 | Road Match | 0m |
| MOTOR SERVICE STATIONS- PETROL, OILS, ETC. | Clifford, E. H. & H. M., Allendale Rd., Nulkaba, Greater Cessnock | 639872 | 1970 | Road Match | 0m |
| MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. | Clifford, E. H. & H. M., Allendale Rd., Nulkaba Cessnock | 166065 | 1982 | Road Match | 0m |
| MOTOR GARAGES & ENGINEERS | Hancock, J. W., Allendale Rd., Cessnock | 161445 | 1950 | Road Match | 0m |

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

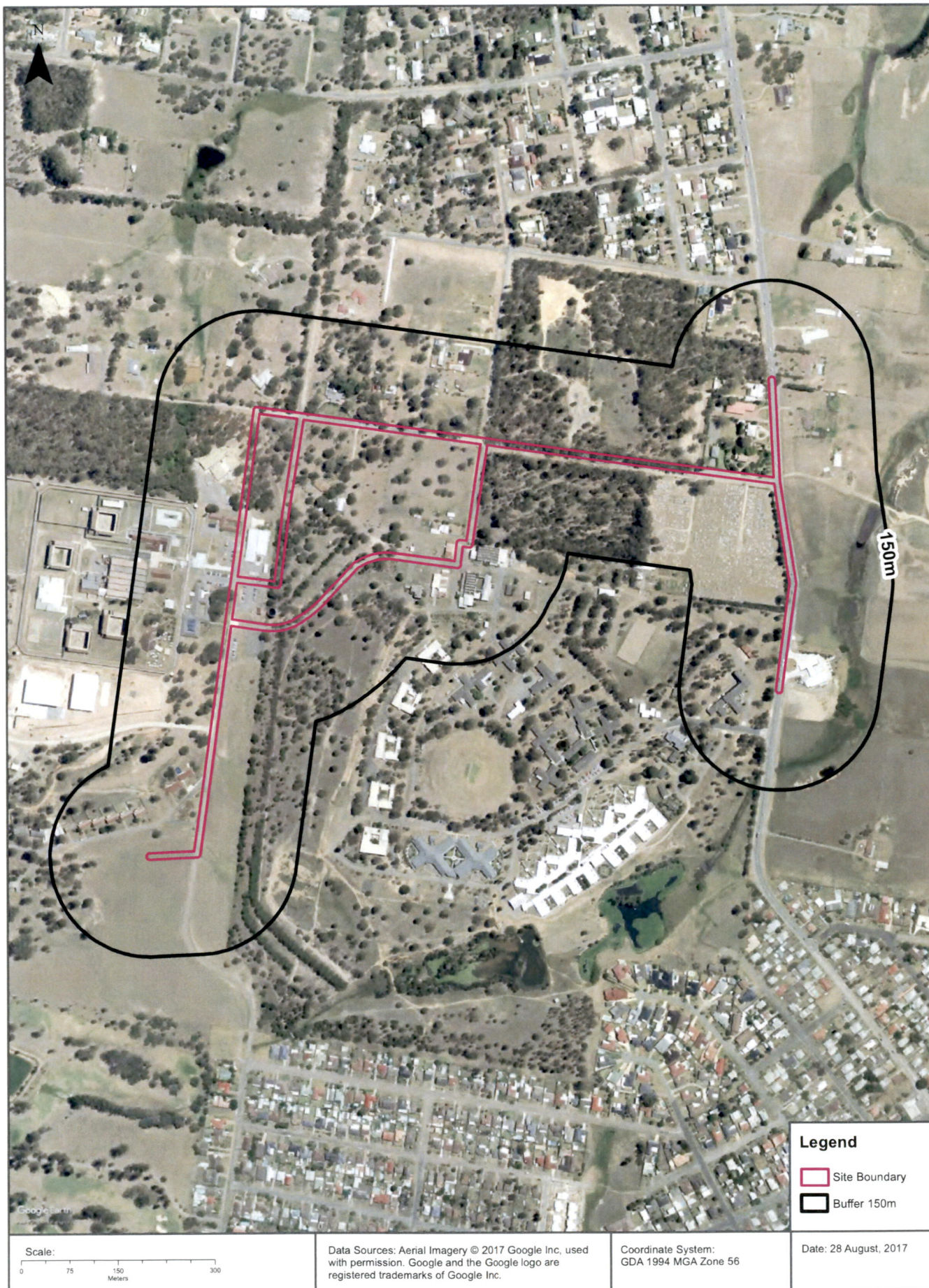
Aerial Imagery 2012

Lindsay Street, Cessnock, NSW 2325



Aerial Imagery 2010

Lindsay Street, Cessnock, NSW 2325



Aerial Imagery 2005

Lindsay Street, Cessnock, NSW 2325



Aerial Imagery 1998

Lindsay Street, Cessnock, NSW 2325



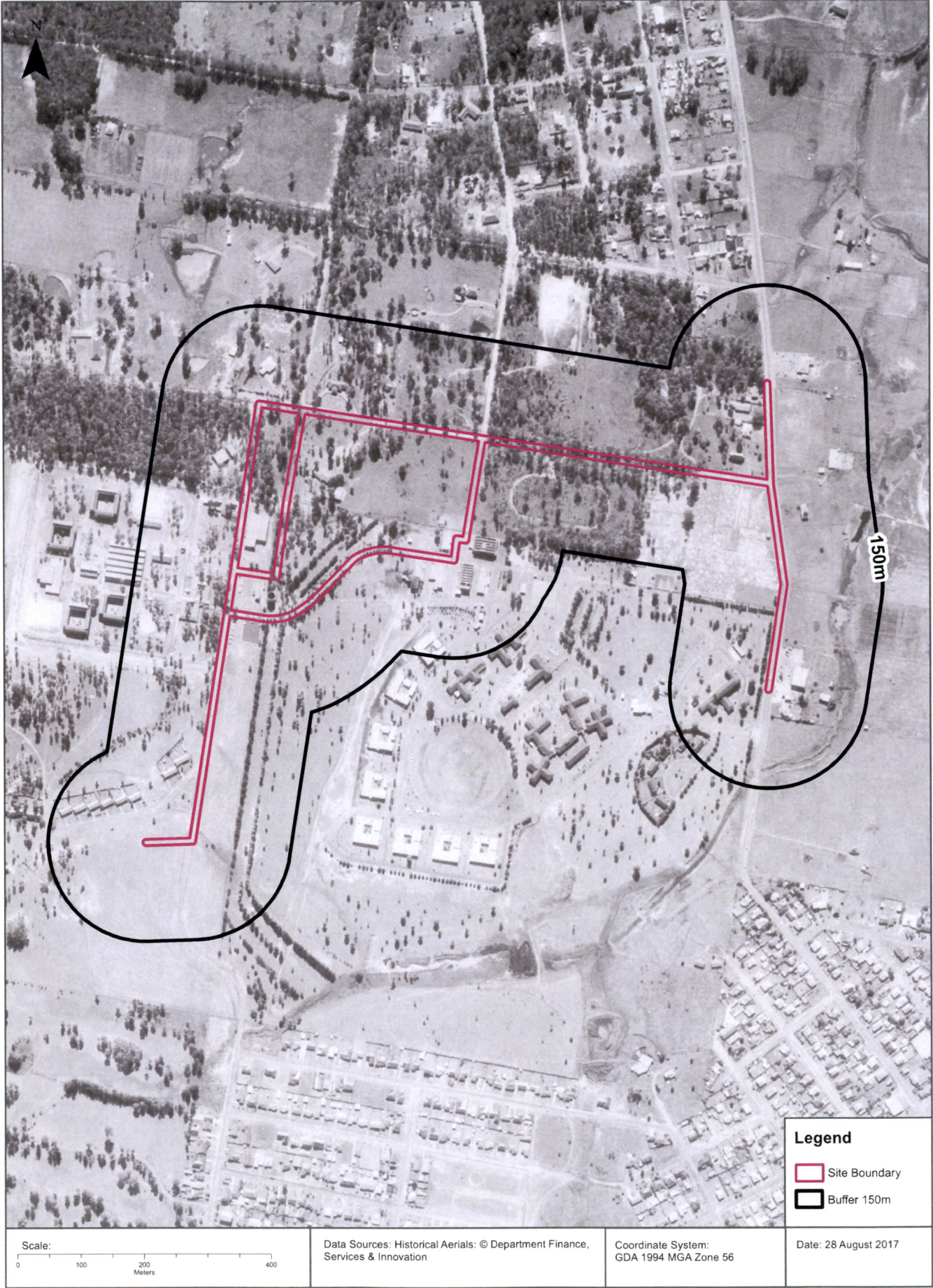
Aerial Imagery 1990

Lindsay Street, Cessnock, NSW 2325



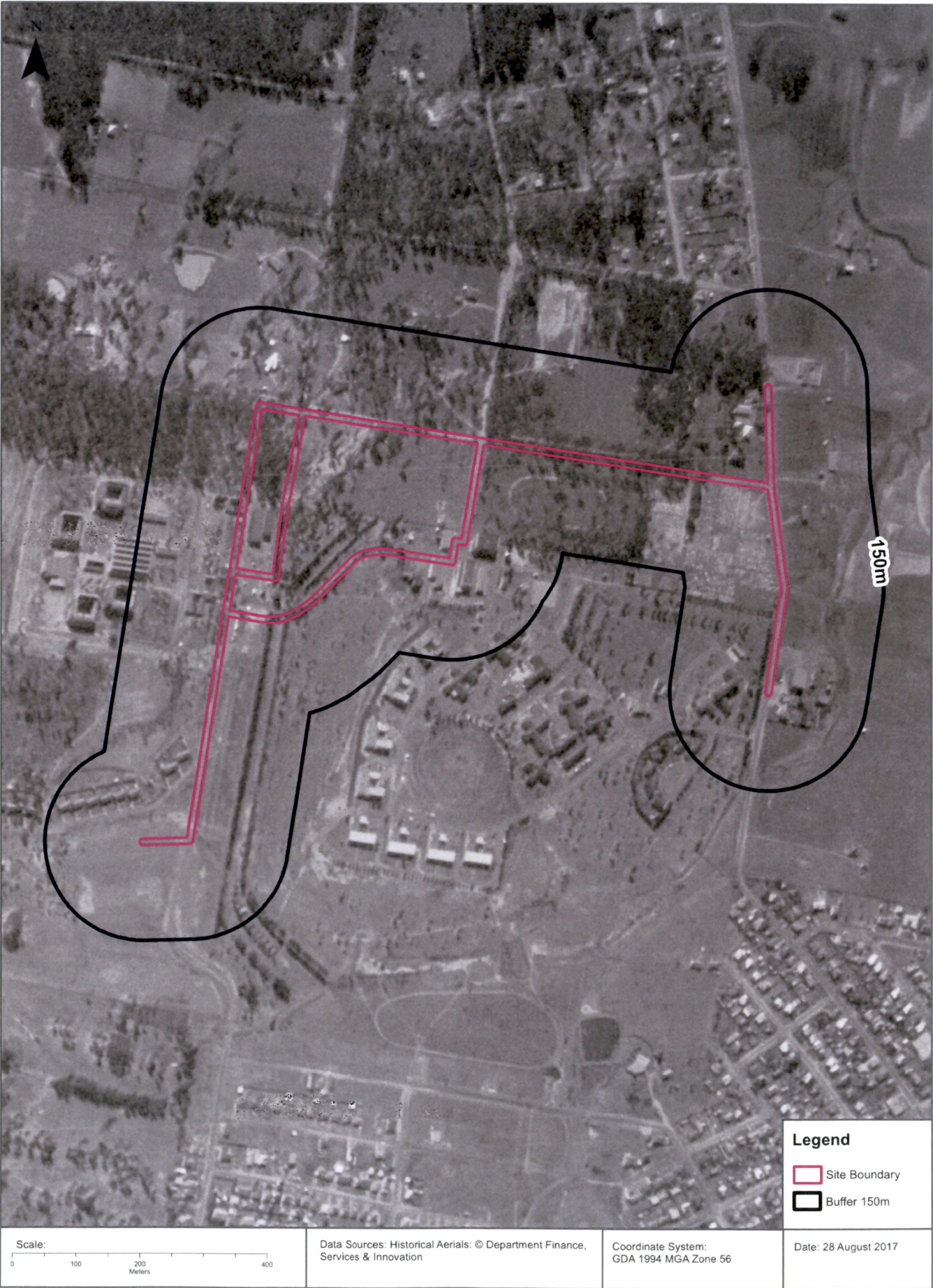
Aerial Imagery 1984

Lindsay Street, Cessnock, NSW 2325



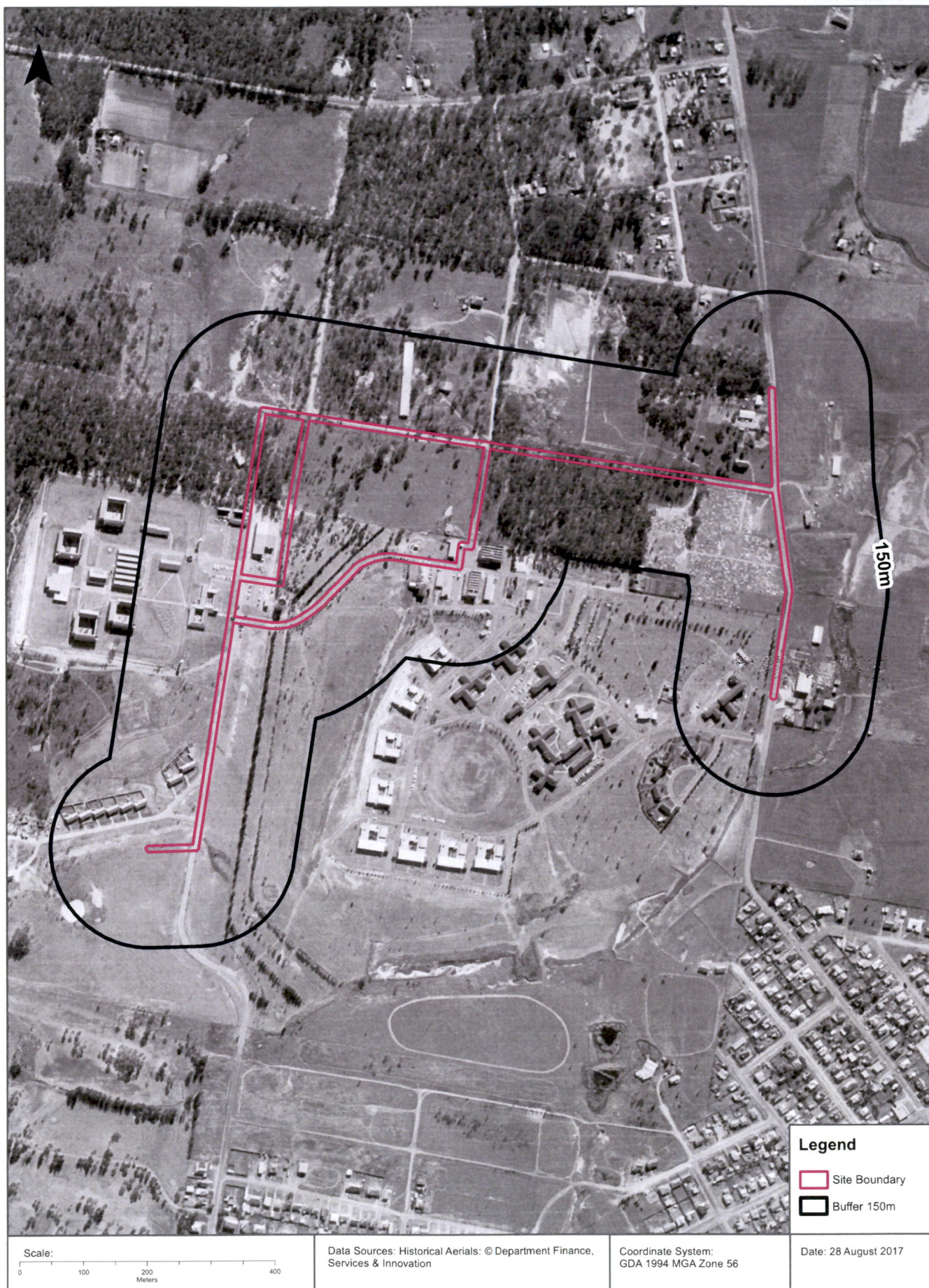
Aerial Imagery 1980

Lindsay Street, Cessnock, NSW 2325



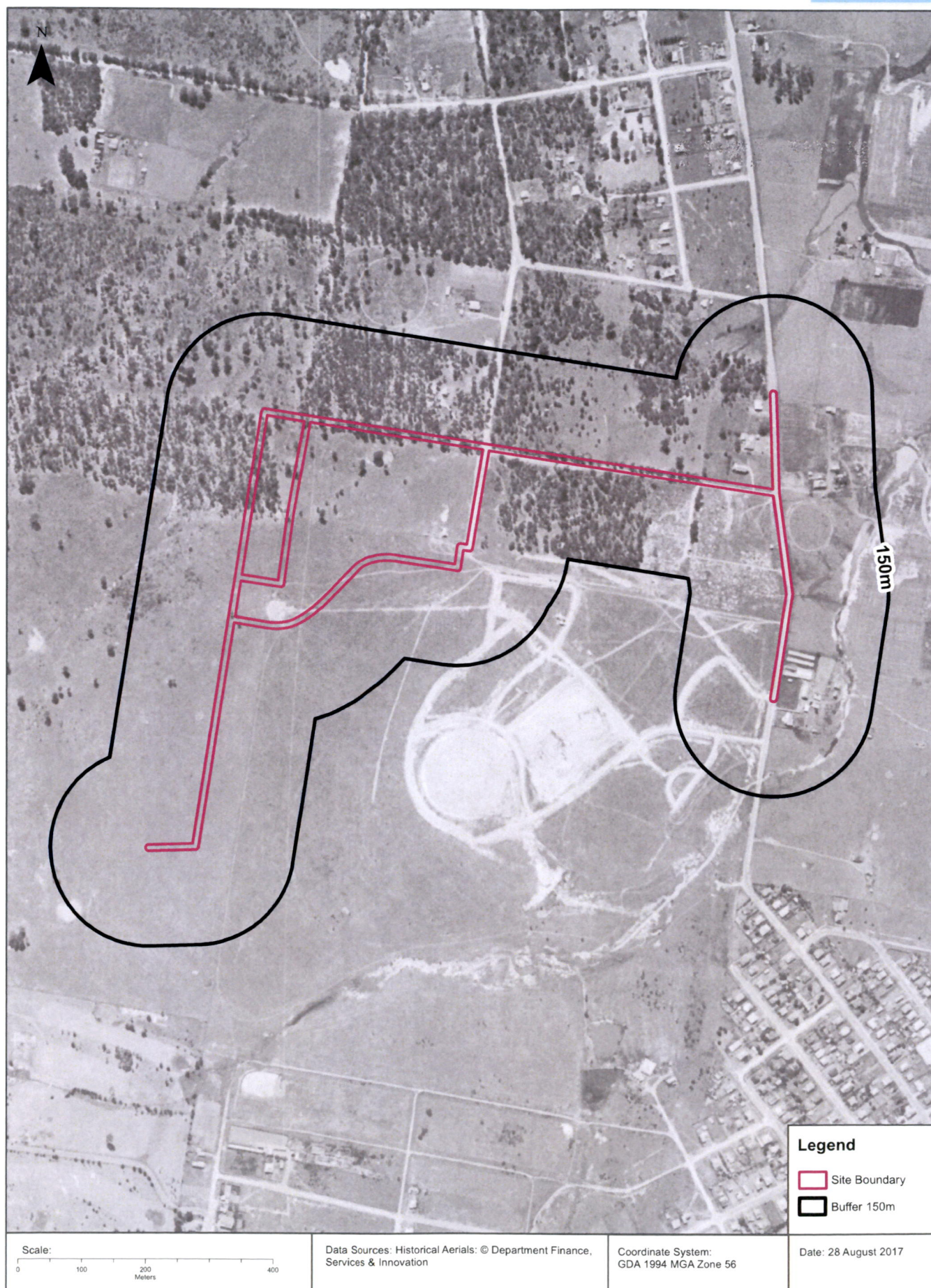
Aerial Imagery 1975

Lindsay Street, Cessnock, NSW 2325



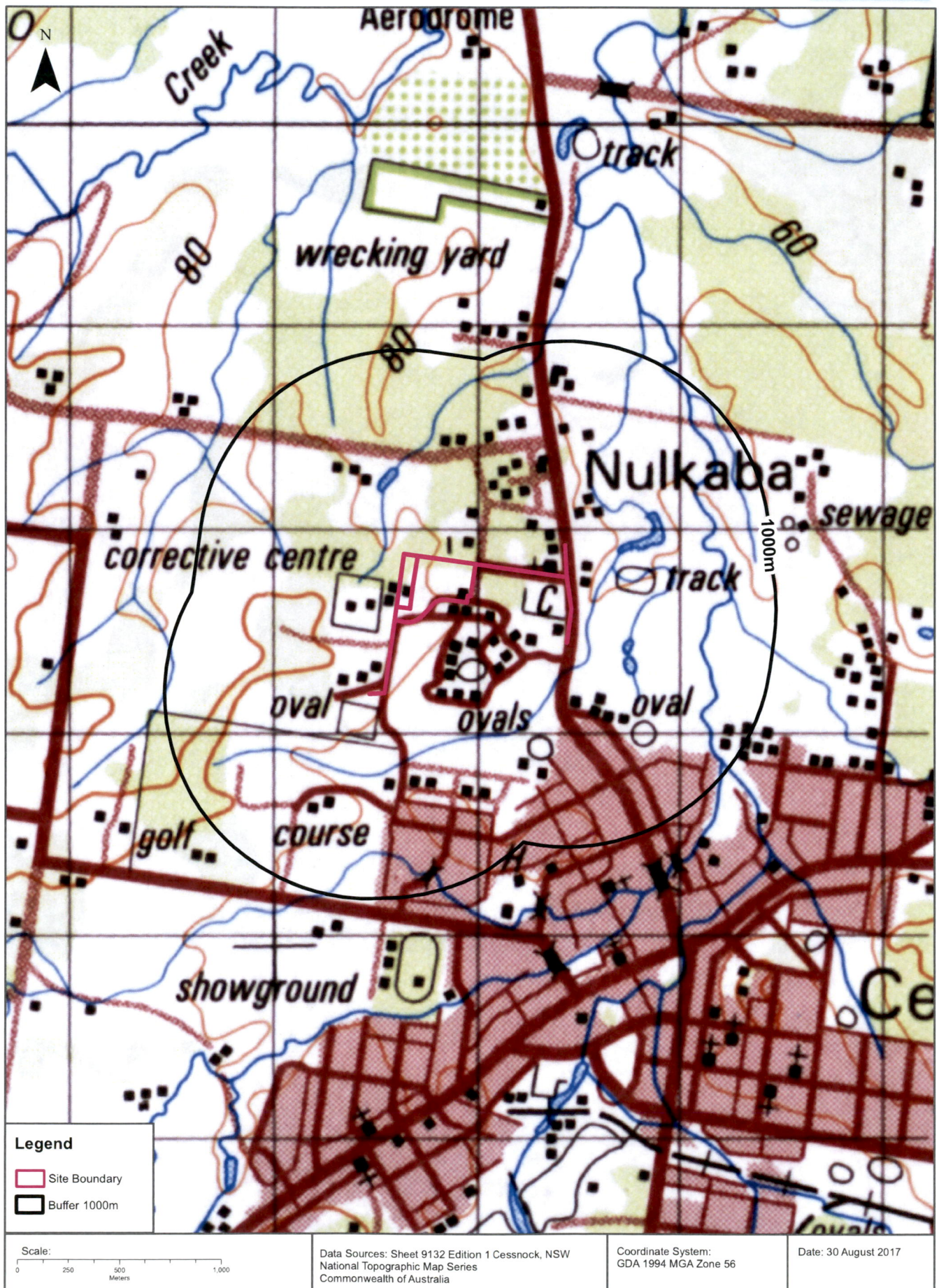
Aerial Imagery 1961

Lindsay Street, Cessnock, NSW 2325



Historical Map 1982

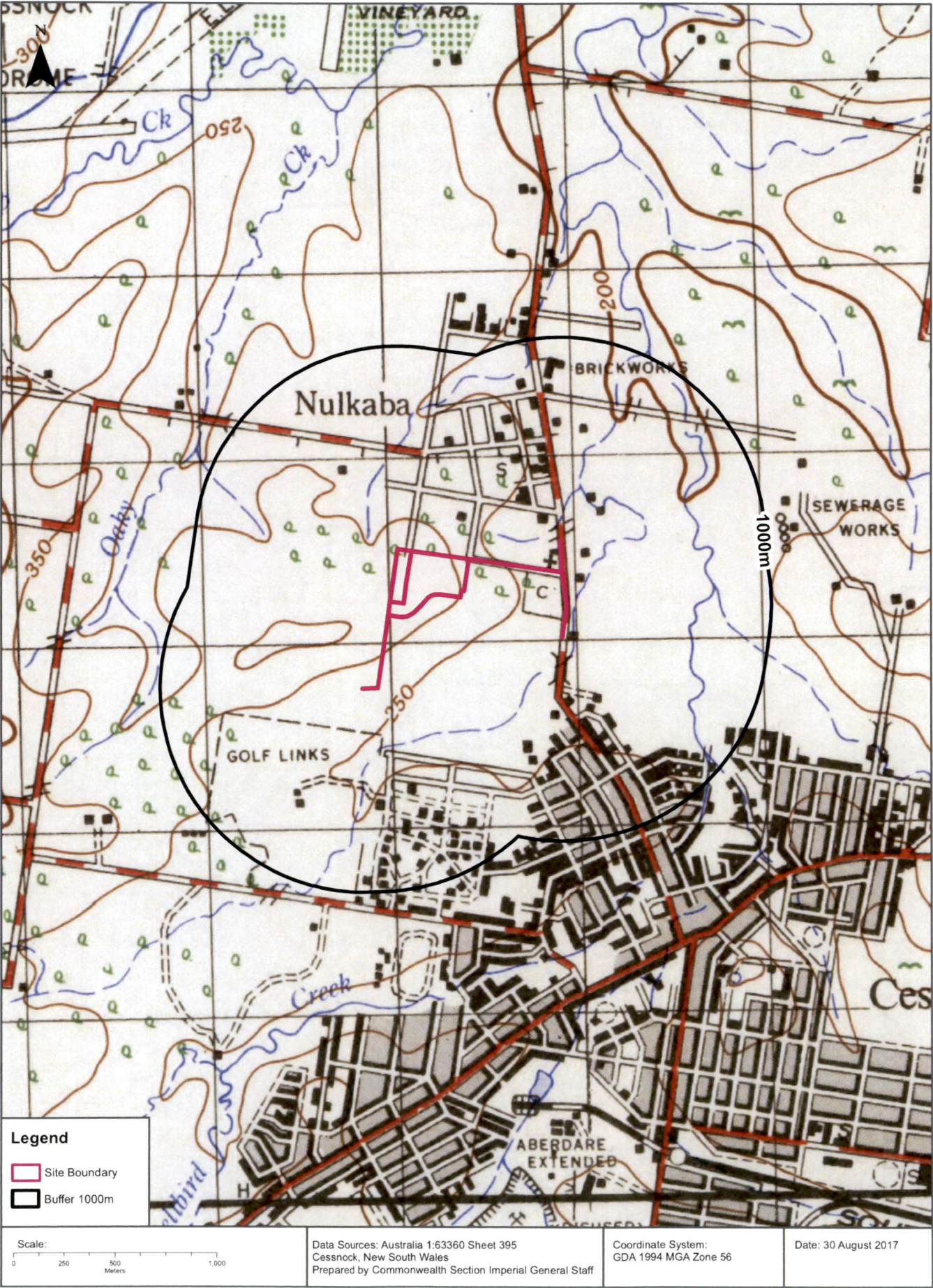
Lindsay Street, Cessnock, NSW 2325





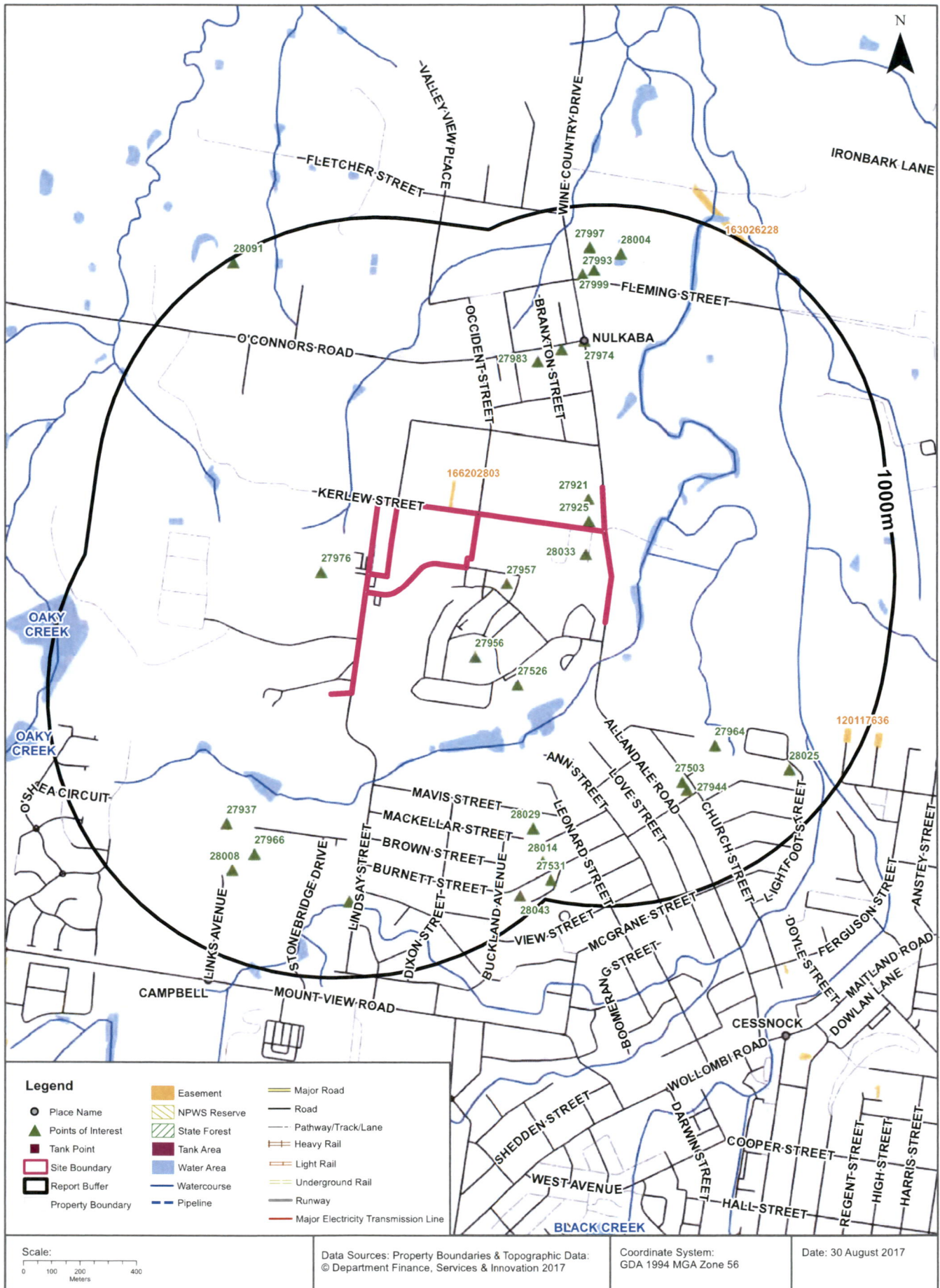
Historical Map 1954

Lindsay Street, Cessnock, NSW 2325



Topographic Features

Lindsay Street, Cessnock, NSW 2325



Topographic Features

Lindsay Street, Cessnock, NSW 2325

Points of Interest

What Points of Interest exist within the dataset buffer?

| Map Id | Feature Type | Label | Distance | Direction |
|--------|-----------------------------|---|----------|------------|
| 27925 | Place Of Worship | Place Of Worship | 24m | East |
| 27921 | Place Of Worship | JEHOVAHS WITNESSES CHURCH | 48m | North East |
| 28033 | Cemetery | CESSNOCK CEMETERY | 74m | East |
| 27957 | Sports Field | Sports Field | 151m | South East |
| 27976 | Gaol | CESSNOCK CORRECTIONAL CENTRE | 162m | West |
| 27956 | Sports Field | OVAL | 315m | South |
| 27526 | Nursing Home | CALVARY CESSNOCK RETIREMENT COMMUNITY | 379m | South East |
| 27983 | Primary School | NULKABA PUBLIC SCHOOL | 501m | North East |
| 27530 | Tourist Park / Home Village | CESSNOCK WINE COUNTRY CARAVAN PARK | 506m | North East |
| 27974 | Village | NULKABA | 521m | North East |
| 27964 | Sports Field | DRAIN OVAL | 579m | South East |
| 27937 | Golf Course | THE OAKS GOLF COURSE | 584m | South West |
| 27966 | Sports Field | BOWLING GREEN | 623m | South West |
| 27503 | Community Facility | NORTH CESSNOCK COMMUNITY HALL | 623m | South East |
| 27944 | Park | NORTH END PARK | 655m | South East |
| 28008 | Club | CESSNOCK GOLF CLUB T/AS STONEBRIDGE GOLF CLUB | 710m | South West |
| 28026 | Park | LINDSAY STREET PARK | 731m | South |
| 27993 | Historic Site | POTTERY KILNS | 756m | North East |
| 27999 | Historic Site | POTTERY KILNS | 770m | North East |
| 28029 | Park | MAVIS STREET PARK | 770m | South |
| 28004 | Sports Court | TENNIS COURT | 829m | North East |
| 28025 | Park | LEE-ANN CRESCENT PARK | 830m | South East |
| 27997 | Tourist Attraction | POTTERS HOTEL BREWERY RESORT | 850m | North East |
| 28014 | Community Home | MOUNTAIN VIEW LODGE HOSTEL | 873m | South |
| 27531 | Helipad | Helipad | 928m | South |
| 28043 | Ambulance Station | CESSNOCK AMBULANCE STATION | 929m | South |
| 28091 | Homestead | CHIMBU PARK | 984m | North West |

Topographic Data Source: © Land and Property Information (2015)

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Topographic Features

Lindsay Street, Cessnock, NSW 2325

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

| Map Id | Tank Type | Status | Name | Feature Currency | Distance | Direction |
|----------------------|-----------|--------|------|------------------|----------|-----------|
| No records in buffer | | | | | | |

Tanks (Points)

What are the Tank Points located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

| Map Id | Tank Type | Status | Name | Feature Currency | Distance | Direction |
|----------------------|-----------|--------|------|------------------|----------|-----------|
| No records in buffer | | | | | | |

Tanks Data Source: © Land and Property Information (2015)

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Major Easements

What Major Easements exist within the dataset buffer?

Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

| Map Id | Easement Class | Easement Type | Easement Width | Distance | Direction |
|-----------|----------------|---------------|----------------|----------|------------|
| 166202803 | Primary | Right of way | 6m | 4m | North |
| 120117636 | Primary | Undefined | | 927m | South East |
| 163026228 | Primary | Electricity | 20m | 991m | North East |

Easements Data Source: © Land and Property Information (2015)

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Topographic Features

Lindsay Street, Cessnock, NSW 2325

State Forest

What State Forest exist within the dataset buffer?

| State Forest Number | State Forest Name | Distance | Direction |
|---------------------|----------------------|----------|-----------|
| N/A | No records in buffer | | |

State Forest Data Source: © Land and Property Information (2015)

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National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

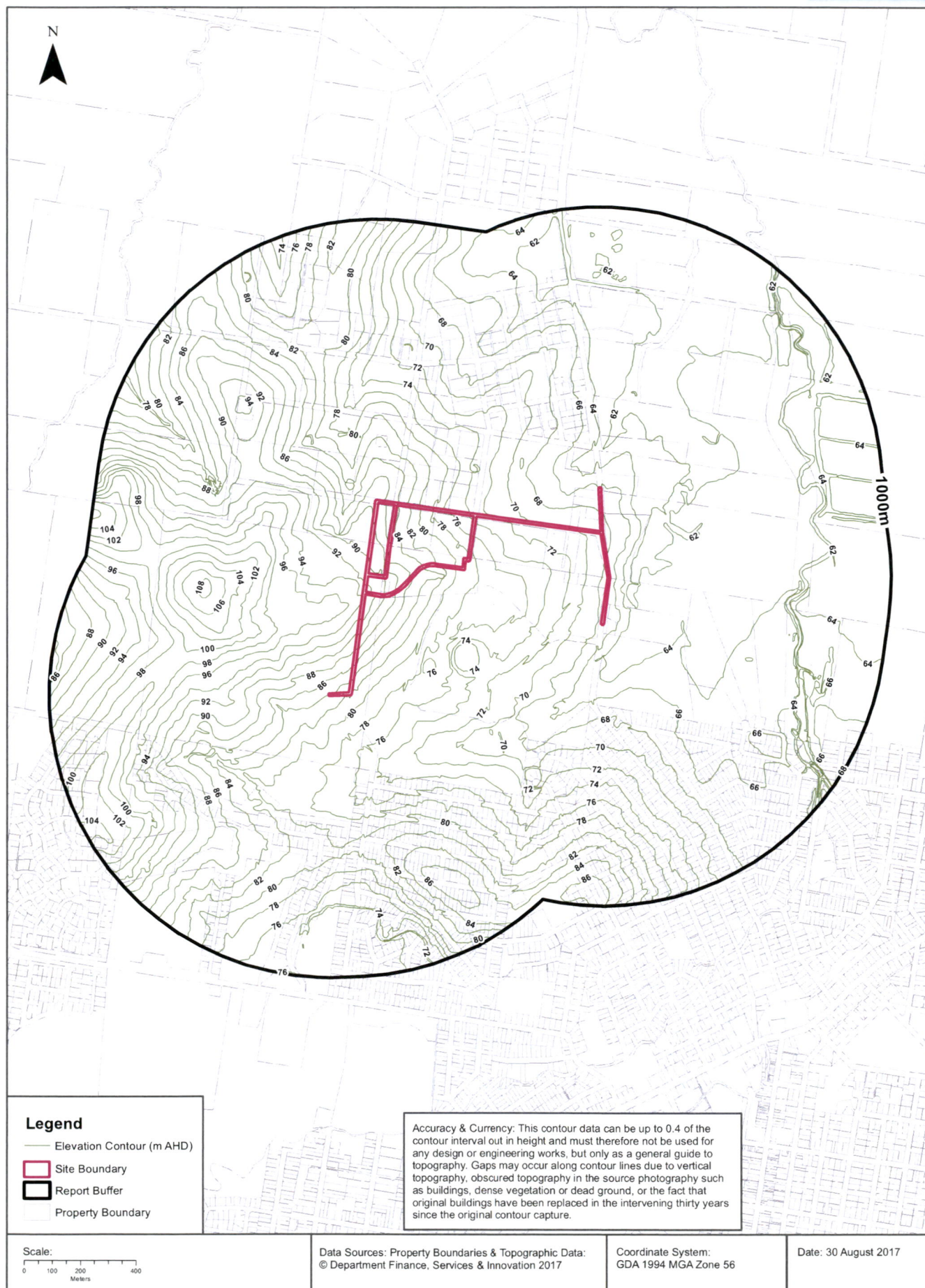
| Reserve Number | Reserve Type | Reserve Name | Gazetted Date | Distance | Direction |
|----------------|----------------------|--------------|---------------|----------|-----------|
| N/A | No records in buffer | | | | |

NPWS Data Source: © Land and Property Information (2015)

Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

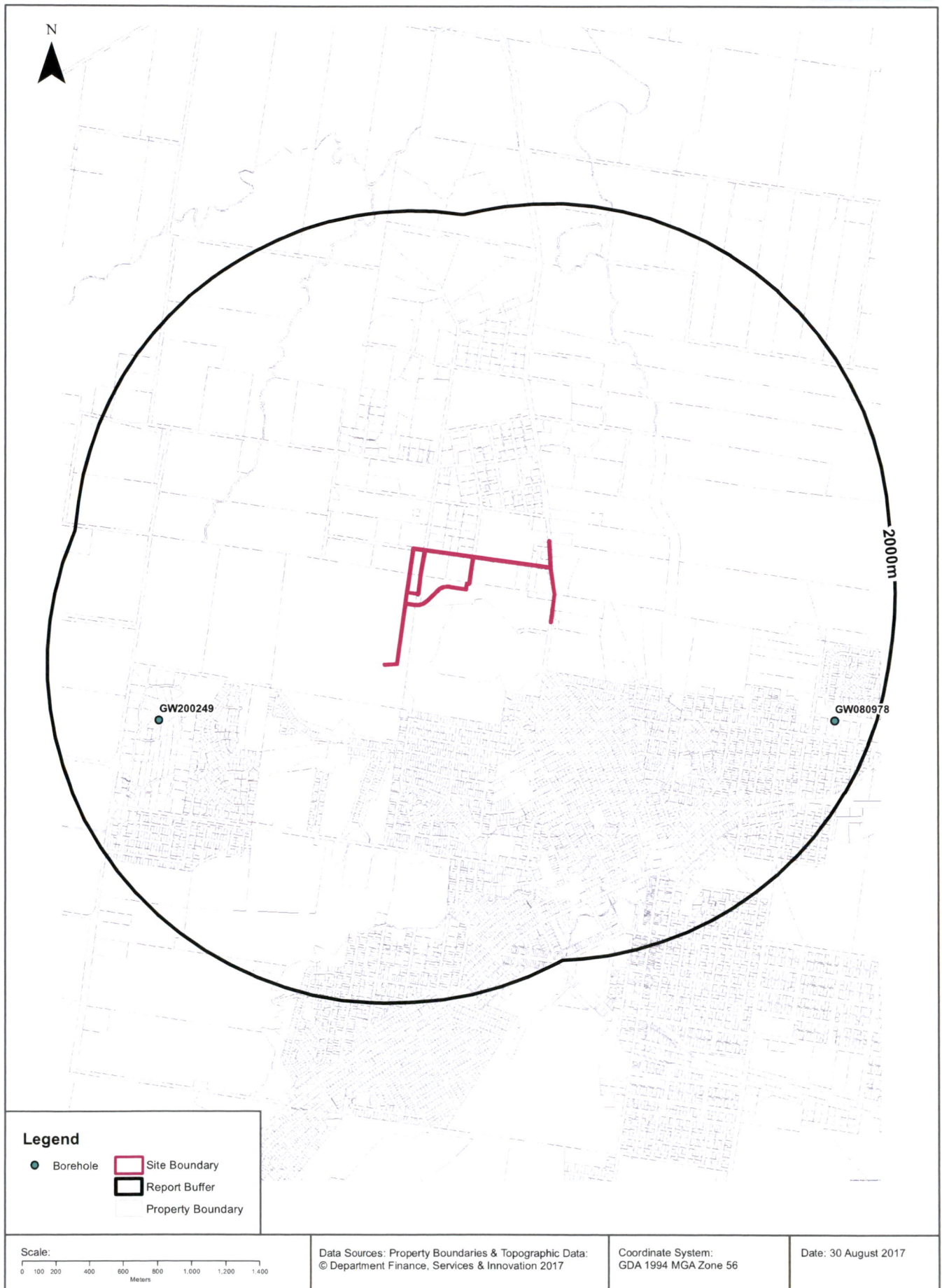
Elevation Contours (m AHD)

Lindsay Street, Cessnock, NSW 2325



Groundwater Boreholes

Lindsay Street, Cessnock, NSW 2325



Hydrogeology & Groundwater

Lindsay Street, Cessnock, NSW 2325

Hydrogeology

Description of aquifers on-site:

Description

Fractured or fissured, extensive aquifers of low to moderate productivity

Description of aquifers within the dataset buffer:

Description

Fractured or fissured, extensive aquifers of low to moderate productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Groundwater Boreholes

Boreholes within the dataset buffer:

| GW No. | Licence No | Work Type | Owner Type | Purpose | Contractor | Complete Date | Final Depth | Drilled Depth | Salinity | SWL | Yield | Elev | Dist | Dir |
|----------|------------|-----------|---------------------|------------|-----------------------------|---------------|-------------|---------------|----------|------|-------|-------|-------|------------|
| GW200249 | 20BL168525 | Bore | | Test Bore | Slade Drilling | 06/12/2002 | 18.00 | 18.00 | | | 1.200 | | 1377m | South West |
| GW080978 | 20BL170112 | Bore | NSW Office of Water | Monitoring | Central West Water Drillers | 07/12/2005 | 30.00 | 30.00 | | 6.00 | 0.450 | 67.50 | 1768m | East |

Borehole Data Source : NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation for all bores prefixed with GW. All other bores © Commonwealth of Australia (Bureau of Meteorology) 2015. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Hydrogeology & Groundwater

Lindsay Street, Cessnock, NSW 2325

Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

| Groundwater No | Drillers Log | Distance | Direction |
|----------------|---|----------|---------------|
| GW200249 | 0.00m-0.40m Topsoil 0.40m-6.00m clay 6.00m-18.00m silt | 1377m | South West |
| GW080978 | 0.00m-0.10m Topsoil 0.10m-6.00m Clay 6.00m-10.00m Shale, brown 10.00m-30.00m Pyroclastics, grey tuff | 1768m | East |

Drill Log Data Source: NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corp
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Geology 1:250,000

Lindsay Street, Cessnock, NSW 2325



Geology

Lindsay Street, Cessnock, NSW 2325

Geological Units

What are the Geological Units onsite?

| Symbol | Description | Unit Name | Group | Sub Group | Age | Dom Lith | Map Sheet | Dataset |
|--------|-------------------------------------|----------------------|---------------|-----------|------------|----------|-----------|-----------|
| Pedf | Silty sandstone | Farley Formation | Dalwood Group | | Palaeozoic | | | 1:250,000 |
| Pedr | Siltstone, marl and minor sandstone | Rutherford Formation | Dalwood Group | | Palaeozoic | | | 1:250,000 |

What are the Geological Units within the dataset buffer?

| Symbol | Description | Unit Name | Group | Sub Group | Age | Dom Lith | Map Sheet | Dataset |
|--------|--|----------------------|---------------|-----------|------------|----------|-----------|-----------|
| Pedf | Silty sandstone | Farley Formation | Dalwood Group | | Palaeozoic | | | 1:250,000 |
| Pedr | Siltstone, marl and minor sandstone | Rutherford Formation | Dalwood Group | | Palaeozoic | | | 1:250,000 |
| Pgx | Coal seams, siltstone, sandstone, conglomerate | Greta Coal Measures | | | Palaeozoic | | | 1:250,000 |

Geological Structures

What are the Geological Structures onsite?

| Feature | Name | Description | Map Sheet | Dataset |
|-------------|------|-------------|-----------|-----------|
| No features | | | | 1:250,000 |

What are the Geological Structures within the dataset buffer?

| Feature | Name | Description | Map Sheet | Dataset |
|-------------|------|-------------|-----------|-----------|
| No features | | | | 1:250,000 |

Geological Data Source : NSW Department of Industry, Resources & Energy

© State of New South Wales through the NSW Department of Industry, Resources & Energy

Naturally Occurring Asbestos Potential

Lindsay Street, Cessnock, NSW 2325

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

| Potential | Sym | Strat Name | Group | Formation | Scale | Min Age | Max Age | Rock Type | Dom Lith | Description | Dist | Dir |
|----------------------|-----|------------|-------|-----------|-------|---------|---------|-----------|----------|-------------|------|-----|
| No records in buffer | | | | | | | | | | | | |

Mining Subsidence District Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Soil Landscapes

Lindsay Street, Cessnock, NSW 2325



Soils

Lindsay Street, Cessnock, NSW 2325

Soil Landscapes

What are the onsite Soil Landscapes?

| Soil Code | Name | Group | Process | Map Sheet | Scale |
|-----------|----------|-----------------------|---------|-----------|-----------|
| YPbx | BRANXTON | YELLOW PODZOLIC SOILS | | Singleton | 1:250,000 |
| YPpk | POKOLBIN | YELLOW PODZOLIC SOILS | | Singleton | 1:250,000 |

What are the Soil Landscapes within the dataset buffer?

| Soil Code | Name | Group | Process | Map Sheet | Scale |
|-----------|----------|-----------------------|---------|-----------|-----------|
| YPbx | BRANXTON | YELLOW PODZOLIC SOILS | | Singleton | 1:250,000 |
| YPpk | POKOLBIN | YELLOW PODZOLIC SOILS | | Singleton | 1:250,000 |

Soils Landscapes Data Source : NSW Office of Environment and Heritage

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Standard Local Environmental Plan Acid Sulfate Soils

Lindsay Street, Cessnock, NSW 2325

Standard Local Environmental Plan Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

| Soil Class | Description | LEP |
|------------|-------------|-----|
| N/A | | |

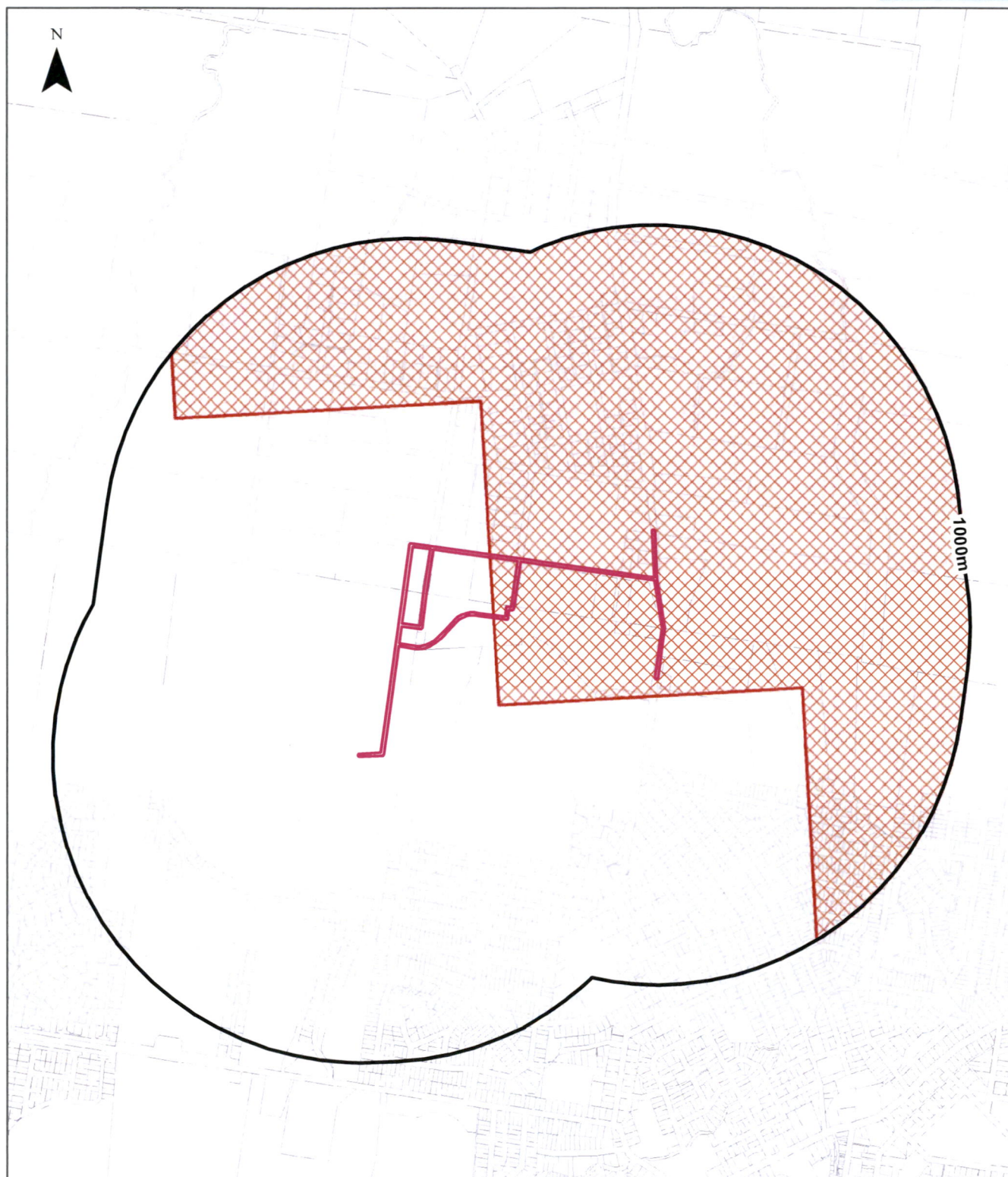
If the on-site Soil Class is 5, what other soil classes exist within 500m?

| Soil Class | Description | LEP | Distance | Direction |
|------------|-------------|-----|----------|-----------|
| N/A | | | | |

Acid Sulfate Data Source Accessed 07/10/2016: NSW Crown Copyright - Planning and Environment
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Dryland Salinity

Lindsay Street, Cessnock, NSW 2325



Legend

Site Boundary

Report Buffer

Property Boundary

Dryland Salinity - National Assessment

Delineated risk area but no high hazard or risk rating for either 2000, 2020, 2050

High hazard or risk in 2050 only

High hazard or risk defined for 2050, but no assessment made for 2000 or 2020

High hazard or risk in 2020 and 2050

High hazard or risk in 2000 and 2050. 2020 not defined as high hazard

High hazard or risk defined for all years: 2000, 2020, 2050

Salinity Potential of Western Sydney

Area of Known Salinity

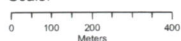
Area of High Salinity Potential

Area of Moderate Salinity Potential

Area of Very Low Salinity Potential

Area of Water

Scale:



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2017

Coordinate System:
GDA 1994 MGA Zone 56

Date: 30 August 2017

Dryland Salinity

Lindsay Street, Cessnock, NSW 2325

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

Is there Dryland Salinity - National Assessment data within the dataset buffer?

Yes

What Dryland Salinity assessments are given?

| Assessment 2000 | Assessment 2020 | Assessment 2050 | Distance | Direction |
|---------------------|---------------------|---------------------|----------|-----------|
| High hazard or risk | High hazard or risk | High hazard or risk | 0m | Onsite |

Dryland Salinity Data Source : National Land and Water Resources Audit

The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.

In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

| Feature Id | Classification | Description | Distance | Direction |
|------------|-----------------------|-------------|----------|-----------|
| N/A | Outside Data Coverage | | | |

Dryland Salinity Potential of Western Sydney Data Source : NSW Office of Environment and Heritage

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Mining Subsidence Districts

Lindsay Street, Cessnock, NSW 2325

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

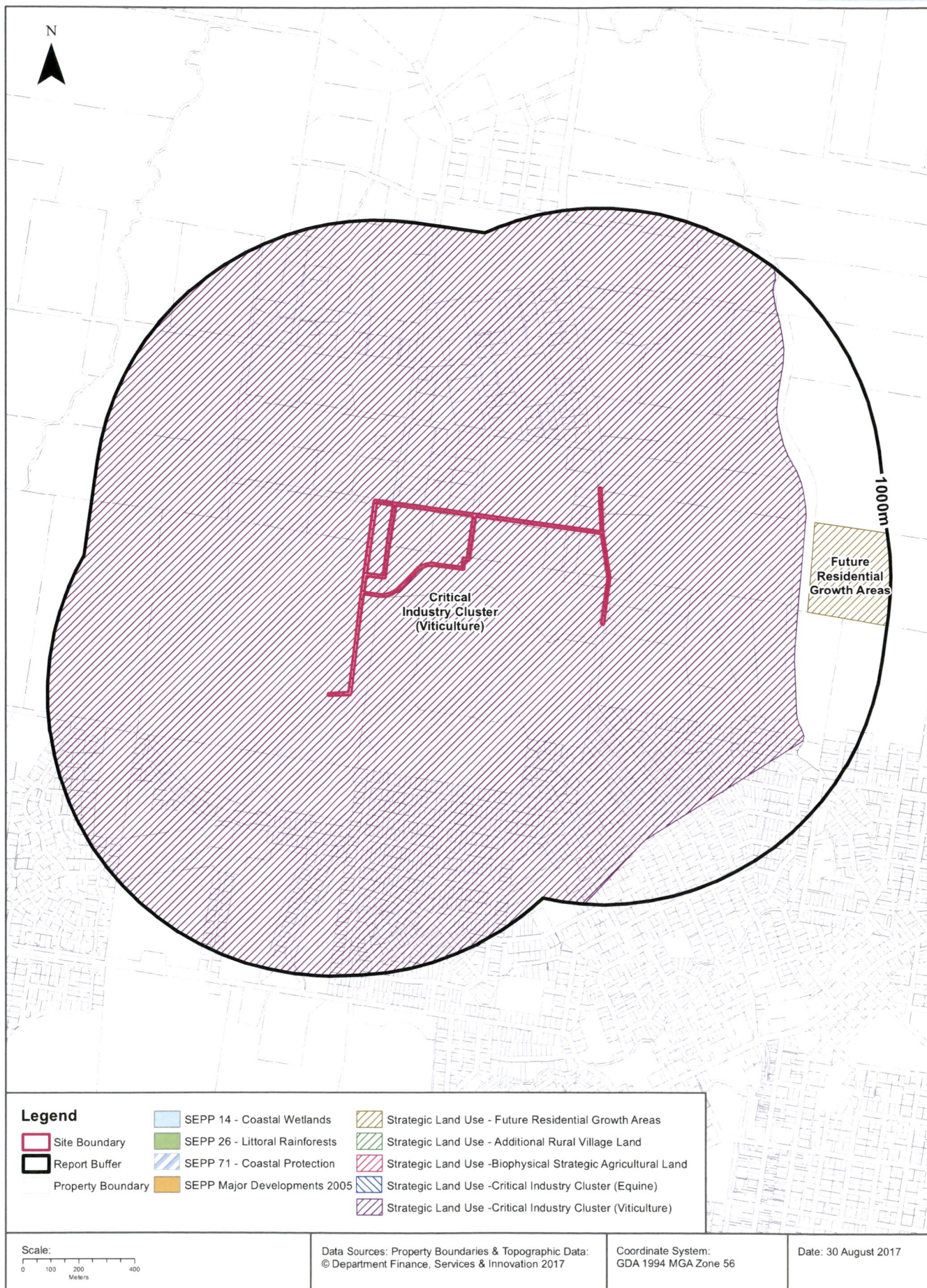
| District | Distance | Direction |
|---|----------|-----------|
| There are no Mining Subsidence Districts within the report buffer | | |

Mining Subsidence District Data Source: © Land and Property Information (2016)

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State Environmental Planning Policy

Lindsay Street, Cessnock, NSW 2325



Environmental Zoning

Lindsay Street, Cessnock, NSW 2325

State Environmental Planning Policy Protected Areas

Are there any State Environmental Planning Policy Protected Areas onsite or within the dataset buffer?

| Dataset | Onsite | Within Site Buffer | Distance |
|----------------------------------|--------|--------------------|----------|
| SEPP14 - Coastal Wetlands | No | No | N/A |
| SEPP26 - Littoral Rainforests | No | No | N/A |
| SEPP71 - Coastal Protection Zone | No | No | N/A |

SEPP Protected Areas Data Source: NSW Department of Planning & Environment
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State Environmental Planning Policy Major Developments (2005)

State Environmental Planning Policy Major Developments within the dataset buffer:

| Map Id | Feature | Effective Date | Distance | Direction |
|--------|--------------------------|----------------|----------|-----------|
| N/A | No records within buffer | | | |

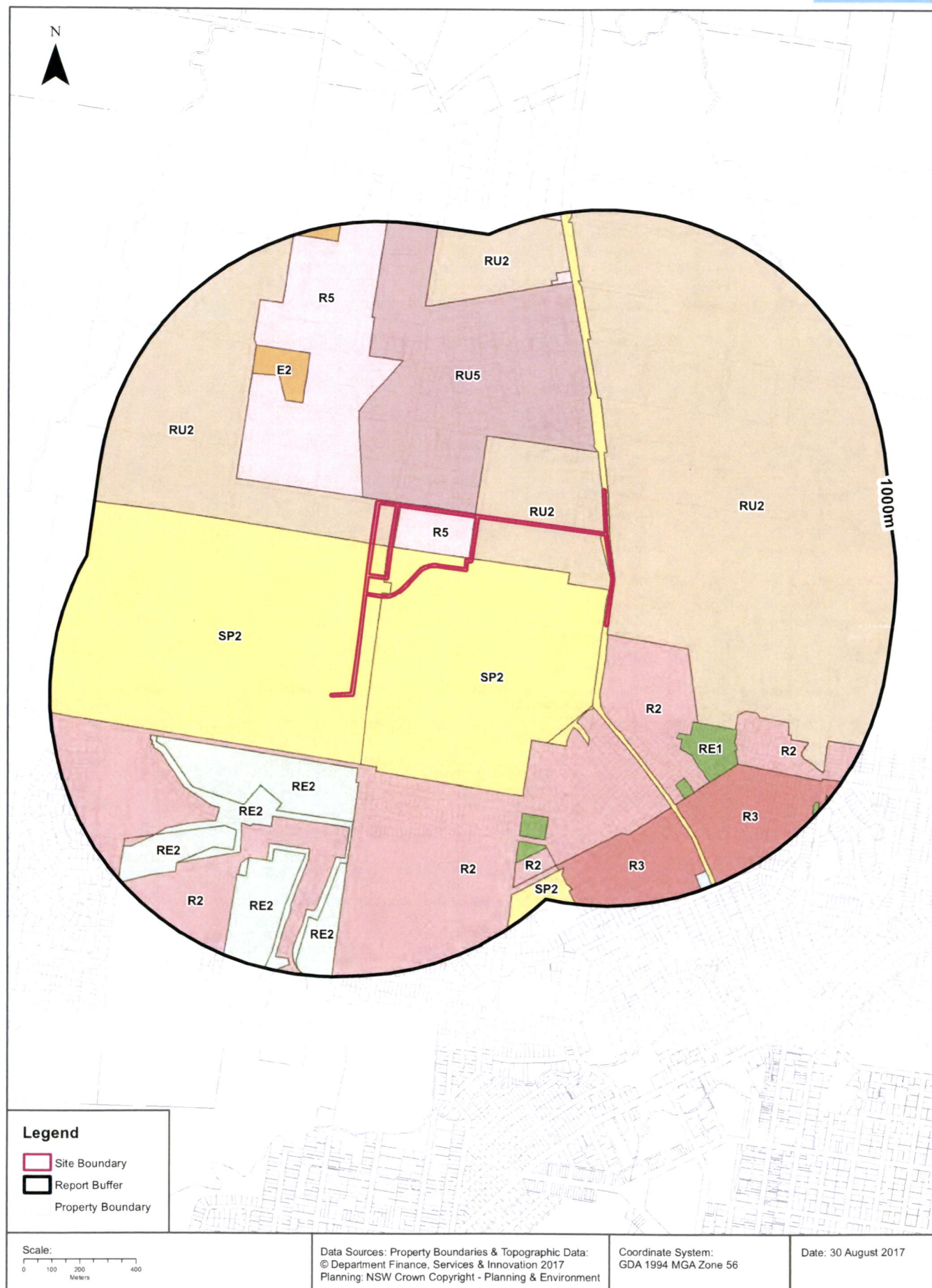
SEPP Major Development Data Source: NSW Department of Planning & Environment
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State Environmental Planning Policy Strategic Land Use Areas

State Environmental Planning Policy Strategic Land Use Areas onsite or within the dataset buffer:

| Strategic Land Use | SEPPNo | Effective Date | Amendment | Amendment Year | Distance | Direction |
|---|--------|----------------|---------------|----------------|----------|-----------|
| Critical Industry Cluster (Viticulture) | 2007 | 28/01/2014 | Coal Seam Gas | 2014 | 0m | Onsite |
| Future Residential Growth Areas | 2007 | 28/01/2014 | Coal Seam Gas | 2014 | 711m | East |

SEPP Strategic Land Use Data Source: NSW Department of Planning & Environment
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Local Environmental Plan

Lindsay Street, Cessnock, NSW 2325

Land Zoning

What Local Environmental Plan Land Zones exist within the dataset buffer?

| Zone | Description | Purpose | LEP or SEPP | Published Date | Commenced Date | Currency Date | Amendment | Distance | Direction |
|------|----------------------------|---------------------|--|----------------|----------------|---------------|-----------------|----------|------------|
| RU2 | Rural Landscape | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 0m | Onsite |
| SP2 | Infrastructure | Correctional Centre | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 0m | Onsite |
| SP2 | Infrastructure | Aged Care Facility | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 0m | Onsite |
| SP2 | Infrastructure | Classified Road | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 0m | Onsite |
| R5 | Large Lot Residential | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 0m | Onsite |
| RU2 | Rural Landscape | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 1m | North East |
| RU5 | Village | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 3m | North |
| R2 | Low Density Residential | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 30m | South East |
| R5 | Large Lot Residential | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 56m | North |
| R2 | Low Density Residential | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 222m | South West |
| RE2 | Private Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 239m | South West |
| SP2 | Infrastructure | Correctional Centre | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 288m | South East |
| RE2 | Private Recreation | | Cessnock Local Environmental Plan 2011 | 09/05/2014 | 09/05/2014 | 13/04/2017 | Amendment No 9 | 407m | South West |
| E2 | Environmental Conservation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 445m | North West |
| RE1 | Public Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 458m | South East |
| RE2 | Private Recreation | | Cessnock Local Environmental Plan 2011 | 09/05/2014 | 09/05/2014 | 13/04/2017 | Amendment No 9 | 550m | South West |
| R2 | Low Density Residential | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 560m | East |
| RE2 | Private Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 570m | South West |
| RE2 | Private Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 586m | South West |
| RE2 | Private Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 594m | South |
| RE1 | Public Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 608m | South East |
| RE2 | Private Recreation | | Cessnock Local Environmental Plan 2011 | 09/05/2014 | 09/05/2014 | 13/04/2017 | Amendment No 9 | 652m | South West |
| R3 | Medium Density Residential | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 665m | South East |
| R3 | Medium Density Residential | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 685m | South |
| RE1 | Public Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 714m | South |
| RU2 | Rural Landscape | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 714m | North |
| R5 | Large Lot Residential | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 752m | North |
| RE1 | Public Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 786m | South |
| R2 | Low Density Residential | | Cessnock Local Environmental Plan 2011 | 09/05/2014 | 09/05/2014 | 13/04/2017 | Amendment No 9 | 799m | South West |
| R2 | Low Density Residential | | Cessnock Local Environmental Plan 2011 | 08/04/2016 | 08/04/2016 | 13/04/2017 | Amendment No 20 | 819m | South |

| Zone | Description | Purpose | LEP or SEPP | Published Date | Commenced Date | Currency Date | Amendment | Distance | Direction |
|------|----------------------------|-------------------|--|----------------|----------------|---------------|----------------|----------|------------|
| SP2 | Infrastructure | Cessnock Hospital | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 878m | South |
| E2 | Environmental Conservation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 940m | North |
| B1 | Neighbourhood Centre | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 942m | South East |
| RE1 | Public Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 968m | South East |
| RE1 | Public Recreation | | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 983m | South East |
| RE2 | Private Recreation | | Cessnock Local Environmental Plan 2011 | 09/05/2014 | 09/05/2014 | 13/04/2017 | Amendment No 9 | 993m | South |

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Local Environmental Plan

Lindsay Street, Cessnock, NSW 2325

Minimum Subdivision Lot Size

What are the onsite Local Environmental Plan Minimum Subdivision Lot Sizes?

| Symbol | Minimum Lot Size | LEP or SEPP | Published Date | Commenced Date | Currency Date | Amendment | Percentage of Site Area |
|--------|---------------------|--|----------------|----------------|---------------|-----------|-------------------------|
| AB | 40 ha | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 32.63 |
| V | 2000 m ² | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 13/04/2017 | | 8.9 |

Maximum Height of Building

What are the onsite Local Environmental Plan Maximum Height of Buildings?

| Symbol | Maximum Height of Building | LEP or SEPP | Published Date | Commenced Date | Currency Date | Amendment | Percentage of Site Area |
|---------|----------------------------|-------------|----------------|----------------|---------------|-----------|-------------------------|
| No Data | | | | | | | |

Floor Space Ratio

What are the onsite Local Environmental Plan Floor Space Ratios?

| Symbol | Floor Space Ratio | LEP or SEPP | Published Date | Commenced Date | Currency Date | Amendment | Percentage of Site Area |
|---------|-------------------|-------------|----------------|----------------|---------------|-----------|-------------------------|
| No Data | | | | | | | |

Land Application

What are the onsite Local Environmental Plan Land Applications?

| Application Type | LEP or SEPP | Published Date | Commenced Date | Currency Date | Amendment | Percentage of Site Area |
|------------------|--|----------------|----------------|---------------|-----------------|-------------------------|
| Included | Cessnock Local Environmental Plan 2011 | 01/04/2016 | 01/04/2016 | 01/04/2016 | Amendment No 16 | 100 |

Land Reservation Acquisition

What are the onsite Local Environmental Plan Land Reservation Acquisitions?

| Reservation | LEP | Published Date | Commenced Date | Currency Date | Amendment | Comments | Percentage of Site Area |
|-------------|-----|----------------|----------------|---------------|-----------|----------|-------------------------|
| No Data | | | | | | | |

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Heritage Items

Lindsay Street, Cessnock, NSW 2325



Heritage

Lindsay Street, Cessnock, NSW 2325

State Heritage Items

What are the State Heritage Items located within the dataset buffer?

| Map Id | Name | Address | LGA | Listing Date | Listing No | Plan No | Distance | Direction |
|--------|----------------------|---------|-----|--------------|------------|---------|----------|-----------|
| N/A | No records in buffer | | | | | | | |

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Local Heritage Items

What are the Local Heritage Items located within the dataset buffer?

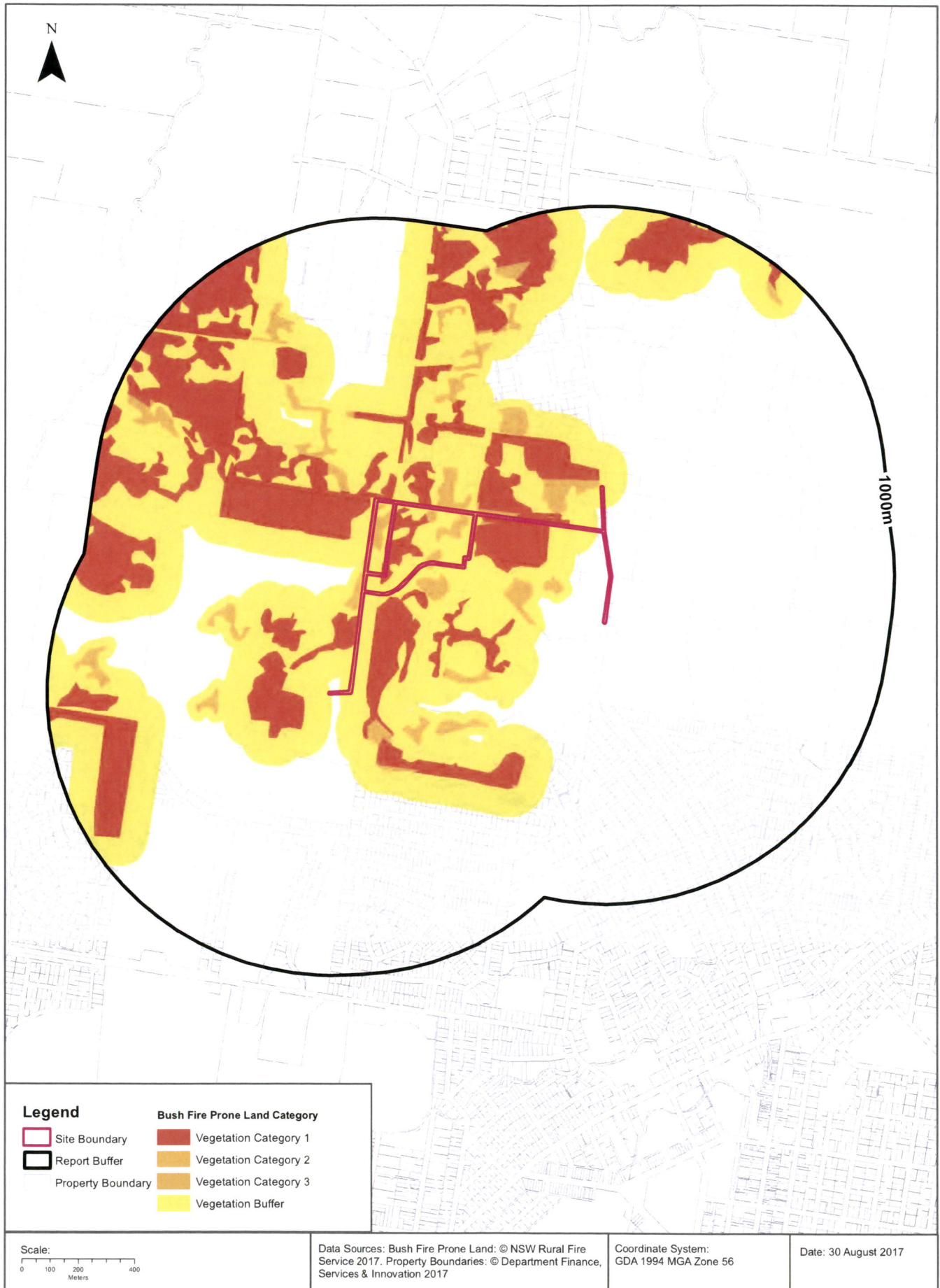
| Map Id | Name | Classification | Significance | LEP or Act | Published Date | Commenced Date | Currency Date | Distance | Direction |
|--------|--|----------------|--------------|--|----------------|----------------|---------------|----------|------------|
| I158 | St Patrick's Roman Catholic Church Group | Item - General | Local | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 08/04/2016 | 2m | East |
| I79 | Cessnock General Cemetary | Item - General | Local | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 08/04/2016 | 3m | East |
| I156 | Nulkaba Public School | Item - General | Local | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 08/04/2016 | 368m | North East |
| I155 | Potters Brewery | Item - General | Local | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 08/04/2016 | 726m | North East |
| I54 | Cessnock Hospital | Item - General | Local | Cessnock Local Environmental Plan 2011 | 23/12/2011 | 23/12/2011 | 08/04/2016 | 877m | South |

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Natural Hazards - Bush Fire Prone Land

Lindsay Street, Cessnock, NSW 2325



Natural Hazards

Lindsay Street, Cessnock, NSW 2325

Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

| Bush Fire Prone Land Category | Distance | Direction |
|-------------------------------|----------|-----------|
| Vegetation Buffer | 0m | Onsite |
| Vegetation Category 1 | 0m | Onsite |
| Vegetation Category 2 | 0m | Onsite |

NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

Ecological Constraints - Vegetation & RAMSAR Wetlands

Lindsay Street, Cessnock, NSW 2325



Ecological Constraints

Lindsay Street, Cessnock, NSW 2325

Lower Hunter and Central Coast Regional Vegetation Survey

What vegetation from the Lower Hunter and Central Coast Regional Survey exists within the dataset buffer?

| Map id | Unit Desc | Canopy Code | Canopy Cover | Species | Distance | Direction |
|--------|--|-------------|--|---|----------|------------|
| 17 | Lower Hunter Spotted Gum - Ironbark Forest | OF | Mid Dense (Open Forest) 50- <100% cover | C. maculata / E. fibrosa / E. punctata | 0m | Onsite |
| 19 | Hunter Lowland Redgum Forest | OF | Mid Dense (Open Forest) 50- <100% cover | E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata | 0m | Onsite |
| 17 | Lower Hunter Spotted Gum - Ironbark Forest | OW | Very Sparse (Open Woodland) 10-20% cover | C. maculata / E. fibrosa / E. punctata | 0m | Onsite |
| 19 | Hunter Lowland Redgum Forest | WO | Sparse (Woodland) 20-<50% cover | E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata | 0m | Onsite |
| 19 | Hunter Lowland Redgum Forest | OW | Very Sparse (Open Woodland) 10-20% cover | E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata | 0m | Onsite |
| 17 | Lower Hunter Spotted Gum - Ironbark Forest | WO | Sparse (Woodland) 20-<50% cover | C. maculata / E. fibrosa / E. punctata | 0m | Onsite |
| 13 | Central Hunter Riparian Forest | WO | Sparse (Woodland) 20-<50% cover | E. tereticornis / C. glauca / A. floribunda | 272m | North West |
| 13 | Central Hunter Riparian Forest | OF | Mid Dense (Open Forest) 50- <100% cover | E. tereticornis / C. glauca / A. floribunda | 773m | North West |
| 13 | Central Hunter Riparian Forest | OW | Very Sparse (Open Woodland) 10-20% cover | E. tereticornis / C. glauca / A. floribunda | 820m | North West |

Lower Hunter and Central Coast Regional Vegetation Survey: NSW Office of Environment and Heritage

RAMSAR Wetlands

What RAMSAR Wetland areas exist within the dataset buffer?

| Map Id | RAMSAR Name | Wetland Name | Designation Date | Source | Distance | Direction |
|--------|----------------------|--------------|------------------|--------|----------|-----------|
| N/A | No records in buffer | | | | | |

RAMSAR Wetlands Data Source: © Commonwealth of Australia - Department of Environment

Ecological Constraints

Lindsay Street, Cessnock, NSW 2325

ATLAS of NSW Wildlife

Endangered & Vulnerable Species on the ATLAS of NSW Wildlife database, within 10km of the site?

| Class | Family | Scientific | Common | Exotic | NSW Status | Commonwealth Status |
|-------|----------------|------------------------------------|---|--------|---|-----------------------|
| Aves | Acanthizidae | Chthonicola sagittata | Speckled Warbler | No | Vulnerable, Protected | |
| Aves | Accipitridae | Haliaeetus leucogaster | White-bellied Sea-Eagle | No | Vulnerable, Protected | CAMBA |
| Aves | Accipitridae | Hamirostra melanosternon | Black-breasted Buzzard | No | Vulnerable, Protected, Category 3 Sensitive Species | |
| Aves | Accipitridae | Hieraaetus morphnoides | Little Eagle | No | Vulnerable, Protected | |
| Aves | Accipitridae | Lophoictinia isura | Square-tailed Kite | No | Vulnerable, Protected, Category 3 Sensitive Species | |
| Aves | Ardeidae | Botaurus poiciloptilus | Australasian Bittern | No | Endangered, Protected | Endangered |
| Aves | Ardeidae | Ixobrychus flavicollis | Black Bittern | No | Vulnerable, Protected | |
| Aves | Artamidae | Artamus cyanopterus cyanopterus | Dusky Woodswallow | No | Vulnerable, Protected | |
| Aves | Cacatuidae | Callocephalon fimbriatum | Gang-gang Cockatoo | No | Vulnerable, Protected, Category 3 Sensitive Species | |
| Aves | Cacatuidae | Calyptorhynchus lathami | Glossy Black-Cockatoo | No | Vulnerable, Protected, Category 2 Sensitive Species | |
| Aves | Ciconiidae | Ephippiorhynchus asiaticus | Black-necked Stork | No | Endangered, Protected | |
| Aves | Climacteridae | Climacteris picumnus victoriae | Brown Treecreeper (eastern subspecies) | No | Vulnerable, Protected | |
| Aves | Estrildidae | Stagonopleura guttata | Diamond Firetail | No | Vulnerable, Protected | |
| Aves | Falconidae | Falco subniger | Black Falcon | No | Vulnerable, Protected | |
| Aves | Meliphagidae | Anthochaera phrygia | Regent Honeyeater | No | Critically Endangered Species, Protected | Critically Endangered |
| Aves | Meliphagidae | Epthianura albifrons | White-fronted Chat | No | Vulnerable, Protected | |
| Aves | Meliphagidae | Melithreptus gularis gularis | Black-chinned Honeyeater (eastern subspecies) | No | Vulnerable, Protected | |
| Aves | Neosittidae | Daphoenositta chrysoptera | Varied Sittella | No | Vulnerable, Protected | |
| Aves | Petroicidae | Melanodryas cucullata cucullata | Hooded Robin (south-eastern form) | No | Vulnerable, Protected | |
| Aves | Petroicidae | Petroica boodang | Scarlet Robin | No | Vulnerable, Protected | |
| Aves | Petroicidae | Petroica phoenicea | Flame Robin | No | Vulnerable, Protected | |
| Aves | Pomatostomidae | Pomatostomus temporalis temporalis | Grey-crowned Babbler (eastern subspecies) | No | Vulnerable, Protected | |
| Aves | Psittacidae | Glossopsitta pusilla | Little Lorikeet | No | Vulnerable, Protected | |
| Aves | Psittacidae | Lathamus discolor | Swift Parrot | No | Endangered, Protected, Category 3 Sensitive Species | Critically Endangered |
| Aves | Psittacidae | Neophema pulchella | Turquoise Parrot | No | Vulnerable, Protected, Category 3 Sensitive Species | |
| Aves | Strigidae | Ninox connivens | Barking Owl | No | Vulnerable, Protected, Category 3 Sensitive Species | |
| Aves | Strigidae | Ninox strenua | Powerful Owl | No | Vulnerable, Protected, Category 3 Sensitive Species | |
| Aves | Tytonidae | Tyto novaehollandiae | Masked Owl | No | Vulnerable, Protected, Category 3 Sensitive Species | |

| Class | Family | Scientific | Common | Exotic | NSW Status | Commonwealth Status |
|----------|------------------------|---|---|--------|--|---------------------|
| Aves | Tytonidae | <i>Tyto tenebricosa</i> | Sooty Owl | No | Vulnerable, Protected, Category 3 Sensitive Species | |
| Mammalia | Burramyidae | <i>Cercartetus nanus</i> | Eastern Pygmy-possum | No | Vulnerable, Protected | |
| Mammalia | Dasyuridae | <i>Dasyurus maculatus</i> | Spotted-tailed Quoll | No | Vulnerable, Protected | Endangered |
| Mammalia | Emballonuridae | <i>Saccolaimus flaviventris</i> | Yellow-bellied Sheath-tail-bat | No | Vulnerable, Protected | |
| Mammalia | Macropodidae | <i>Petrogale penicillata</i> | Brush-tailed Rock-wallaby | No | Endangered, Protected | Vulnerable |
| Mammalia | Molossidae | <i>Mormopterus norfolkensis</i> | Eastern Freetail-bat | No | Vulnerable, Protected | |
| Mammalia | Petauridae | <i>Petaurus australis</i> | Yellow-bellied Glider | No | Vulnerable, Protected | |
| Mammalia | Petauridae | <i>Petaurus norfolkensis</i> | Squirrel Glider | No | Vulnerable, Protected | |
| Mammalia | Phascolarctidae | <i>Phascolarctos cinereus</i> | Koala | No | Vulnerable, Protected | Vulnerable |
| Mammalia | Pteropodidae | <i>Pteropus poliocephalus</i> | Grey-headed Flying-fox | No | Vulnerable, Protected | Vulnerable |
| Mammalia | Vespertilionidae | <i>Chalinolobus dwyeri</i> | Large-eared Pied Bat | No | Vulnerable, Protected | Vulnerable |
| Mammalia | Vespertilionidae | <i>Falsistrellus tasmaniensis</i> | Eastern False Pipistrelle | No | Vulnerable, Protected | |
| Mammalia | Vespertilionidae | <i>Miniopterus australis</i> | Little Bentwing-bat | No | Vulnerable, Protected | |
| Mammalia | Vespertilionidae | <i>Miniopterus schreibersii oceanensis</i> | Eastern Bentwing-bat | No | Vulnerable, Protected | |
| Mammalia | Vespertilionidae | <i>Myotis macropus</i> | Southern Myotis | No | Vulnerable, Protected | |
| Mammalia | Vespertilionidae | <i>Scoteanax rueppellii</i> | Greater Broad-nosed Bat | No | Vulnerable, Protected | |
| Mammalia | Vespertilionidae | <i>Vespadelus troungtoni</i> | Eastern Cave Bat | No | Vulnerable, Protected | |
| Flora | Asteraceae | <i>Rutidosis heterogama</i> | Heath Wrinklewort | No | Vulnerable, Protected | Vulnerable |
| Flora | Elaeocarpaceae | <i>Tetratheca juncea</i> | Black-eyed Susan | No | Vulnerable, Protected | Vulnerable |
| Flora | Fabaceae (Mimosoideae) | <i>Acacia bynoeana</i> | Bynoe's Wattle | No | Endangered, Protected | Vulnerable |
| Flora | Lamiaceae | <i>Prostanthera cineolifera</i> | Singleton Mint Bush | No | Vulnerable, Protected | Vulnerable |
| Flora | Myrtaceae | <i>Callistemon linearifolius</i> | Netted Bottle Brush | No | Vulnerable, Protected, Category 3 Sensitive Species | |
| Flora | Myrtaceae | <i>Eucalyptus glaucina</i> | Slaty Red Gum | No | Vulnerable, Protected | Vulnerable |
| Flora | Myrtaceae | <i>Eucalyptus parramattensis</i> subsp. <i>decadens</i> | | No | Vulnerable, Protected | Vulnerable |
| Flora | Myrtaceae | <i>Eucalyptus pumila</i> | Pokolbin Mallee | No | Vulnerable, Protected | Vulnerable |
| Flora | Myrtaceae | <i>Melaleuca groveana</i> | Grove's Paperbark | No | Vulnerable, Protected | |
| Flora | Orchidaceae | <i>Cymbidium canaliculatum</i> | <i>Cymbidium canaliculatum</i> population in the Hunter Catchment | No | Endangered Population, Protected, Category 2 Sensitive Species | |
| Flora | Proteaceae | <i>Grevillea parviflora</i> subsp. <i>parviflora</i> | Small-flower Grevillea | No | Vulnerable, Protected | Vulnerable |
| Flora | Zannichelliaceae | <i>Zannichellia palustris</i> | | No | Endangered, Protected | |

Data does not include records not defined as either endangered or vulnerable, and category 1 sensitive species are also excluded. NSW Office of Environment and Heritage's Atlas of NSW Wildlife, which holds data from a number of custodians. Data obtained 30/08/2017

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Appendix 5 – SIDRA Modelling Report

Technical Note

By: Maselusi Amiatu **Date:** 21 June 2019
Subject: Cessnock Correctional Complex Variation 1 - **Our Ref:** 3493709
SIDRA modelling
Reviewer: Christopher Morley

1 Introduction

1.1 Background/Purpose

The Department of Justice (DOJ) are considering alternative access options to the Cessnock Correction Centre. The complex is currently accessed via residential streets on Council maintained roads, primarily Lindsay and Kerlew St and branching service roads.

Beca has been commissioned to undertake the investigation, development and assessment of options and design of the new access road. Based on discussions taking place in May 2019, two additional options have been developed which both directs travel towards the intersection of Wine Country Drive and Calvary Access.

Hence, the purpose of this Technical Note is to document the assumptions, methodology and the results from the traffic modelling undertaken for the intersection of Wine Country Drive and Calvary Access.

1.2 Technical Note Structure

The remainder of this File Note is structured around the following sections:

Section 2 Discusses the current traffic counts and intersection layout

Section 3 discusses the trip generation, distribution, modelling assumptions and methodology

Section 4 discusses the results from the SIDRA traffic modelling

Section 5 provides the summary as well as recommendations based on this assessment

2 Existing conditions

2.1 Traffic counts

Beca authorised traffic counts on the intersection of Wine Country Drive and Calvary Access on 18 June 2019 for a duration of 13 hours (5am to 6pm). The summary of the traffic counts is presented in **Appendix A**.

The peak hour for traffic at the intersection is identified as being between 8:00 to 9:00am in the morning and between 14:45 to 15:45pm in the afternoon. The proportion of heavy vehicles in the morning and afternoon peaks are 5% and 4% respectively.

Figure 1 shows the existing traffic profile at Calvary Access and Wine Country Drive intersection.

Technical Note

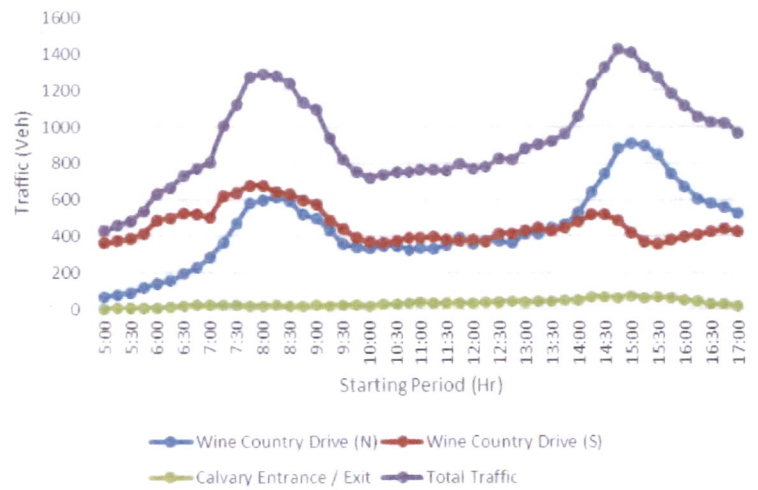
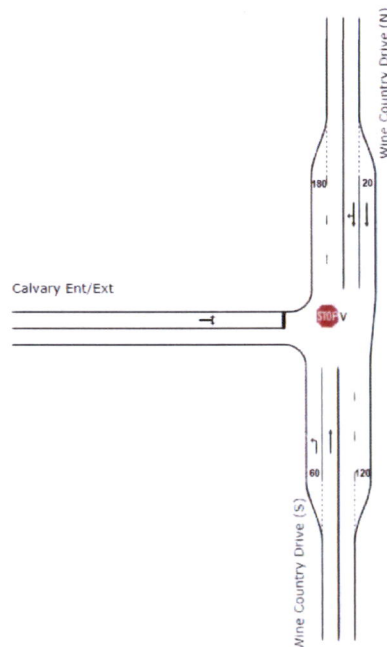


Figure 1: Existing Traffic Profile

2.2 Intersection Layout

The intersection of Wine Country Drive and Calvary Access is a three arm stop controlled intersection with additional turning lanes on both the south and north approaches. **Figure 2** shows the intersection layout.

Figure 2 : Intersection Layout



Technical Note

3 Traffic assessment

3.1 Trip generation

The trips generated by the proposed development are presented in the Traffic Assessment of the REF submitted on 12 October 2016. A summary of the proposed trip generation is given in **Table 1** below.

Table 1 : Traffic from Development

| Typical Shifts | Existing | Existing + Proposed* |
|----------------|----------|----------------------|
| 6am-4pm | 245 | 501 |
| 2pm-10pm | 39 | 98 |
| 10pm-6am | 20 | 65 |

Source: REF – Traffic, Transport and Access (Review of Environmental Factors – Traffic, Transport and Access, JACOBS 2016)

* Proposed traffic includes both for RBP and new 600 Bed facility

3.2 Trip distribution

For the purpose of this assessment, it is assumed that all traffic will access the facility via Calvary Access. The existing connection via Lindsay Street will remain as it currently is but will be used for emergency access only and not for any daily operational purposes.

3.3 Modelling assumptions

The following assumptions are made in the modelling for this assessment:

- The impacts from worst case scenario are only **assessed, which, as per Table 1** is the 6am to 4pm shift;
- All employees are assumed to come by their own car i.e. **one car for each employee;**
- The employees come to the facility between 5am and 6am and leave the facility between 4pm and 5pm i.e. 501 cars coming in morning and leaving in afternoon;
- Morning and afternoon peak time periods of 8:00-9:00 and 14:45-15:45 respectively;
- The north-south distribution of the proposed traffic to/from Wine Country Drive has been assumed to be same as the existing traffic movements; and
- Project opening year of 2019 only, has been modelled.

3.4 Traffic Scenarios

The following traffic scenarios was adopted for this **assessment**:

- Scenario 1 – Existing traffic volumes for the same time periods as the shift pattern (5:00-6:00 and 16:00-17:00),
- Scenario 2 – Existing traffic volumes for the morning and afternoon peak time periods as requested by RMS (8:00-9:00 and 14:45-15:45); and
- Scenario 3 – Existing traffic volumes plus proposed traffic from the facility with the distribution explained above (5:00-6:00 and 16:00-17:00).

3.5 Methodology

The methodology which was adopted to complete this traffic modelling is as follows:

Technical Note

1. Using SIDRA 8.0 to model the existing layout (intersection of Wine Country Drive and Calvary Access);
2. Assessing the existing layout with the traffic scenarios described in Section 3.4 above;
3. Assess the modelling results particularly on degree of saturation, worst delay and level of service;
4. Report and document the results.

4 SIDRA Analysis

This section details out the findings of the model. The complete movement summaries are presented in 'Appendix A – '.

Table 2 : Existing intersection outputs

| Traffic Scenario | Time of Day | Deg. Of Saturation | Worst Delay in seconds (Movement) | Level of Service |
|------------------|-------------|--------------------|------------------------------------|------------------|
| 1 | 5:00-6:00 | 19% | 13.0s (West Approach - left turn) | A |
| | 16:00-17:00 | 22% | 12.1s (West Approach - right turn) | A |
| 2 | 8:00-9:00 | 34% | 17.1s (West Approach - right turn) | B |
| | 14:45-15:45 | 29% | 15.4s (West Approach - right turn) | B |
| 3 | 5:00-6:00 | 24% | 13.0s (West Approach - left turn) | A |
| | 16:00-17:00 | 95% | 39.0s (West Approach - right turn) | C |

Based on the above results:

- For both Traffic Scenarios 1 and 2, the intersection at worse is currently operating below 35% of its capacity;
- For Traffic Scenario 3, the intersection is predicted to operate at 95% during the PM peak;
- It is still operating at an acceptable level of service (LoS), however it is very close to capacity particularly under Traffic Scenario 3 in year 1 (2019). That is, the additional traffic from the Correction Centre is expected to reduce operational performance of this intersection.

5 Summary / Recommendations

Based on the modelling exercise conducted above, the intersection is predicted to perform at 95% of its capacity due to the additional traffic from the correction centre (16:00-17:00) in 2019. That is, the intersection is expected to operate above capacity in the near future, and hence an upgrade is likely required at this location in order to cater for the additional demand from the correction centre.

Technical Note

Appendix A – Existing Traffic Counts

| Period | Wine Country (South) | Wine Country (North) | Calvary Access (West) | Period | Wine Country (South) | Wine Country (North) | Calvary Access (West) |
|-------------|----------------------|----------------------|-----------------------|-----------|----------------------|----------------------|-----------------------|
| 5:00-6:00 | 65 | 363 | 2 | 1:30-2:30 | 446 | 430 | 47 |
| 5:15-6:15 | 81 | 372 | 4 | 1:45-2:45 | 463 | 448 | 50 |
| 5:30-6:30 | 91 | 385 | 5 | 2:00-3:00 | 533 | 479 | 53 |
| 5:45-6:45 | 115 | 415 | 7 | 2:15-3:15 | 645 | 520 | 68 |
| 6:00-7:00 | 140 | 485 | 8 | 2:30-3:30 | 741 | 519 | 68 |
| 6:15-7:15 | 154 | 499 | 11 | 2:45-3:45 | 882 | 486 | 62 |
| 6:30-7:30 | 195 | 523 | 17 | 3:00-4:00 | 912 | 421 | 74 |
| 6:45-7:45 | 228 | 522 | 20 | 3:15-4:15 | 899 | 371 | 63 |
| 7:00-8:00 | 283 | 501 | 22 | 3:30-4:30 | 849 | 356 | 67 |
| 7:15-8:15 | 366 | 619 | 20 | 3:45-4:45 | 742 | 380 | 63 |
| 7:30-8:30 | 467 | 639 | 20 | 4:00-5:00 | 673 | 396 | 51 |
| 7:45-8:45 | 579 | 679 | 18 | 4:15-5:15 | 604 | 410 | 43 |
| 8:00-9:00 | 597 | 677 | 18 | 4:30-5:30 | 580 | 424 | 27 |
| 8:15-9:15 | 617 | 642 | 20 | 4:45-5:45 | 559 | 439 | 26 |
| 8:30-9:30 | 594 | 633 | 15 | 5:00-6:00 | 527 | 425 | 17 |
| 8:45-9:45 | 519 | 600 | 15 | | | | |
| 9:00-10:00 | 498 | 578 | 20 | | | | |
| 9:15-10:15 | 431 | 489 | 19 | | | | |
| 9:30-10:30 | 359 | 442 | 23 | | | | |
| 9:45-10:45 | 341 | 390 | 23 | | | | |
| 10:00-11:00 | 334 | 369 | 19 | | | | |
| 10:15-11:15 | 348 | 365 | 26 | | | | |
| 10:30-11:30 | 349 | 373 | 30 | | | | |
| 10:45-11:45 | 325 | 393 | 35 | | | | |
| 11:00-12:00 | 333 | 392 | 41 | | | | |
| 11:15-12:15 | 332 | 396 | 36 | | | | |
| 11:30-12:30 | 350 | 379 | 32 | | | | |
| 11:45-12:45 | 391 | 374 | 34 | | | | |
| 12:00-1:00 | 360 | 378 | 36 | | | | |
| 12:15-1:15 | 375 | 370 | 37 | | | | |
| 12:30-1:30 | 372 | 415 | 42 | | | | |
| 12:45-1:45 | 362 | 415 | 45 | | | | |
| 1:00-2:00 | 415 | 431 | 40 | | | | |
| 1:15-2:15 | 416 | 446 | 43 | | | | |

Technical Note

Appendix B – Sidra Results

MOVEMENT SUMMARY

 Site: v [8:00-9:00]

Wine Country Drive and Kerlew Street
Site Category: (None)
Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Wine Country Drive (S) | | | | | | | | | | | | |
| 1 | L2 | 38 | 5.3 | 0.021 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.58 | 0.00 | 50.7 |
| 2 | T1 | 639 | 4.1 | 0.336 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| Approach | | 677 | 4.1 | 0.336 | 0.4 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 59.5 |
| North: Wine Country Drive (N) | | | | | | | | | | | | |
| 8 | T1 | 589 | 4.2 | 0.198 | 0.1 | LOS A | 0.1 | 1.1 | 0.03 | 0.01 | 0.03 | 59.7 |
| 9 | R2 | 8 | 12.5 | 0.198 | 10.2 | LOS A | 0.1 | 1.1 | 0.05 | 0.01 | 0.05 | 54.6 |
| Approach | | 597 | 4.4 | 0.198 | 0.3 | NA | 0.1 | 1.1 | 0.03 | 0.01 | 0.03 | 59.7 |
| West: Calvary Ent/Ext | | | | | | | | | | | | |
| 10 | L2 | 3 | 66.7 | 0.056 | 18.0 | LOS B | 0.2 | 1.4 | 0.74 | 1.01 | 0.74 | 39.3 |
| 12 | R2 | 15 | 20.0 | 0.056 | 17.1 | LOS B | 0.2 | 1.4 | 0.74 | 1.01 | 0.74 | 40.6 |
| Approach | | 18 | 27.8 | 0.056 | 17.2 | LOS B | 0.2 | 1.4 | 0.74 | 1.01 | 0.74 | 40.4 |
| All Vehicles | | 1292 | 4.6 | 0.336 | 0.6 | NA | 0.2 | 1.4 | 0.02 | 0.03 | 0.02 | 59.3 |

Site Level of Service (LOS) Method: Delay (RTANSW). 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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MOVEMENT SUMMARY

 Site: v [2:45-3:45]

Wine Country Drive and Kerlew Street
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

| Mov ID | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|-------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| South: Wine Country Drive (S) | | | | | | | | | | | | |
| 1 | L2 | 27 | 0.0 | 0.015 | 5.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.58 | 0.00 | 51.3 |
| 2 | T1 | 458 | 5.9 | 0.244 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| Approach | | 485 | 5.6 | 0.244 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 59.5 |
| North: Wine Country Drive (N) | | | | | | | | | | | | |
| 8 | T1 | 877 | 4.2 | 0.288 | 0.0 | LOS A | 0.1 | 0.5 | 0.01 | 0.00 | 0.01 | 59.9 |
| 9 | R2 | 5 | 0.0 | 0.288 | 8.2 | LOS A | 0.1 | 0.5 | 0.02 | 0.01 | 0.02 | 55.4 |
| Approach | | 882 | 4.2 | 0.288 | 0.1 | NA | 0.1 | 0.5 | 0.01 | 0.00 | 0.01 | 59.9 |
| West: Calvary Ent/Ext | | | | | | | | | | | | |
| 10 | L2 | 13 | 0.0 | 0.148 | 9.8 | LOS A | 0.4 | 3.1 | 0.69 | 0.99 | 0.69 | 42.9 |
| 12 | R2 | 49 | 0.0 | 0.148 | 15.4 | LOS B | 0.4 | 3.1 | 0.69 | 0.99 | 0.69 | 42.7 |
| Approach | | 62 | 0.0 | 0.148 | 14.2 | LOS A | 0.4 | 3.1 | 0.69 | 0.99 | 0.69 | 42.7 |
| All Vehicles | | 1429 | 4.5 | 0.288 | 0.8 | NA | 0.4 | 3.1 | 0.04 | 0.06 | 0.04 | 59.0 |

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.

MOVEMENT SUMMARY



Site: v [5:00-6:00]

Wine Country Drive and Kerlew Street

Site Category: (None)

Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|--------------|-------|-----------|---------------|------------------|-------------------|--------------|---------------------|------------------|---------------|------|
| Mov ID | Turn | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed | |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | | | km/h |
| South: Wine Country Drive (S) | | | | | | | | | | | | |
| 1 | L2 | 9 | 22.2 | 0.006 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.57 | 0.00 | 48.8 |
| 2 | T1 | 354 | 2.5 | 0.185 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| Approach | | 363 | 3.0 | 0.185 | 0.2 | NA | 0.0 | 0.0 | 0.00 | 0.01 | 0.00 | 59.7 |
| North: Wine Country Drive (N) | | | | | | | | | | | | |
| 8 | T1 | 64 | 7.8 | 0.022 | 0.0 | LOS A | 0.0 | 0.1 | 0.02 | 0.01 | 0.02 | 59.8 |
| 9 | R2 | 1 | 0.0 | 0.022 | 6.7 | LOS A | 0.0 | 0.1 | 0.03 | 0.02 | 0.03 | 55.2 |
| Approach | | 65 | 7.7 | 0.022 | 0.1 | NA | 0.0 | 0.1 | 0.02 | 0.01 | 0.02 | 59.8 |
| West: Calvary Ent/Ext | | | | | | | | | | | | |
| 10 | L2 | 2 | 100.0 | 0.005 | 13.0 | LOS A | 0.0 | 0.2 | 0.43 | 0.89 | 0.43 | 43.4 |
| 12 | R2 | 1 | 0.0 | 0.005 | 8.5 | LOS A | 0.0 | 0.2 | 0.43 | 0.89 | 0.43 | 45.3 |
| Approach | | 3 | 66.7 | 0.005 | 11.8 | LOS A | 0.0 | 0.2 | 0.43 | 0.89 | 0.43 | 44.0 |
| All Vehicles | | 431 | 4.2 | 0.185 | 0.2 | NA | 0.0 | 0.2 | 0.01 | 0.02 | 0.01 | 59.6 |

Site Level of Service (LOS) Method: Delay (RTANSW). 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.

MOVEMENT SUMMARY

STOP Site: v [4:00-5:00]

Wine Country Drive and Kerlew Street

Site Category: (None)

Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Wine Country Drive (S) | | | | | | | | | | | | |
| 1 | L2 | 16 | 0.0 | 0.009 | 5.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.58 | 0.00 | 51.3 |
| 2 | T1 | 380 | 1.8 | 0.197 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| Approach | | 396 | 1.8 | 0.197 | 0.2 | NA | 0.0 | 0.0 | 0.00 | 0.02 | 0.00 | 59.7 |
| North: Wine Country Drive (N) | | | | | | | | | | | | |
| 8 | T1 | 673 | 2.7 | 0.217 | 0.0 | LOS A | 0.0 | 0.1 | 0.00 | 0.00 | 0.00 | 60.0 |
| 9 | R2 | 1 | 0.0 | 0.217 | 7.3 | LOS A | 0.0 | 0.1 | 0.00 | 0.00 | 0.00 | 55.5 |
| Approach | | 674 | 2.7 | 0.217 | 0.0 | NA | 0.0 | 0.1 | 0.00 | 0.00 | 0.00 | 60.0 |
| West: Calvary Ent/Ext | | | | | | | | | | | | |
| 10 | L2 | 10 | 0.0 | 0.088 | 9.2 | LOS A | 0.3 | 1.9 | 0.56 | 0.98 | 0.56 | 44.7 |
| 12 | R2 | 41 | 0.0 | 0.088 | 12.1 | LOS A | 0.3 | 1.9 | 0.56 | 0.98 | 0.56 | 44.5 |
| Approach | | 51 | 0.0 | 0.088 | 11.5 | LOS A | 0.3 | 1.9 | 0.56 | 0.98 | 0.56 | 44.5 |
| All Vehicles | | 1121 | 2.2 | 0.217 | 0.6 | NA | 0.3 | 1.9 | 0.03 | 0.05 | 0.03 | 59.2 |

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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MOVEMENT SUMMARY

 Site: v [5:00-6:00_plus_FacilityTraffic]

Wine Country Drive and Kerlew Street

Site Category: (None)

Stop (Two-Way)

Movement Performance - Vehicles

| Mov ID | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|-------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| South: Wine Country Drive (S) | | | | | | | | | | | | |
| 1 | L2 | 447 | 0.4 | 0.241 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.58 | 0.00 | 51.3 |
| 2 | T1 | 354 | 2.5 | 0.185 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| Approach | | 801 | 1.4 | 0.241 | 3.1 | NA | 0.0 | 0.0 | 0.00 | 0.32 | 0.00 | 55.5 |
| North: Wine Country Drive (N) | | | | | | | | | | | | |
| 8 | T1 | 64 | 7.8 | 0.034 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| 9 | R2 | 64 | 0.0 | 0.081 | 9.2 | LOS A | 0.3 | 2.3 | 0.61 | 0.79 | 0.61 | 46.3 |
| Approach | | 128 | 3.9 | 0.081 | 4.6 | NA | 0.3 | 2.3 | 0.31 | 0.39 | 0.31 | 53.5 |
| West: Calvary Ent/Ext | | | | | | | | | | | | |
| 10 | L2 | 2 | 100.0 | 0.006 | 13.0 | LOS A | 0.0 | 0.2 | 0.45 | 0.90 | 0.45 | 43.2 |
| 12 | R2 | 1 | 0.0 | 0.006 | 9.6 | LOS A | 0.0 | 0.2 | 0.45 | 0.90 | 0.45 | 45.0 |
| Approach | | 3 | 66.7 | 0.006 | 12.2 | LOS A | 0.0 | 0.2 | 0.45 | 0.90 | 0.45 | 43.8 |
| All Vehicles | | 932 | 1.9 | 0.241 | 3.3 | NA | 0.3 | 2.3 | 0.04 | 0.33 | 0.04 | 55.2 |

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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MOVEMENT SUMMARY

 Site: v [4:00-5:00_plus_FacilityTraffic]

Wine Country Drive and Kerlew Street

Site Category: (None)

Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Wine Country Drive (S) | | | | | | | | | | | | |
| 1 | L2 | 16 | 0.0 | 0.009 | 5.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.58 | 0.00 | 51.3 |
| 2 | T1 | 380 | 1.8 | 0.197 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| Approach | | 396 | 1.8 | 0.197 | 0.2 | NA | 0.0 | 0.0 | 0.00 | 0.02 | 0.00 | 59.7 |
| North: Wine Country Drive (N) | | | | | | | | | | | | |
| 8 | T1 | 673 | 2.7 | 0.217 | 0.0 | LOS A | 0.0 | 0.1 | 0.00 | 0.00 | 0.00 | 60.0 |
| 9 | R2 | 1 | 0.0 | 0.217 | 7.3 | LOS A | 0.0 | 0.1 | 0.00 | 0.00 | 0.00 | 55.5 |
| Approach | | 674 | 2.7 | 0.217 | 0.0 | NA | 0.0 | 0.1 | 0.00 | 0.00 | 0.00 | 60.0 |
| West: Calvary Ent/Ext | | | | | | | | | | | | |
| 10 | L2 | 108 | 0.0 | 0.954 | 33.7 | LOS C | 17.5 | 122.7 | 0.92 | 2.48 | 5.22 | 30.9 |
| 12 | R2 | 444 | 0.0 | 0.954 | 39.0 | LOS C | 17.5 | 122.7 | 0.92 | 2.48 | 5.22 | 30.8 |
| Approach | | 552 | 0.0 | 0.954 | 37.9 | LOS C | 17.5 | 122.7 | 0.92 | 2.48 | 5.22 | 30.8 |
| All Vehicles | | 1622 | 1.5 | 0.954 | 13.0 | NA | 17.5 | 122.7 | 0.31 | 0.85 | 1.78 | 47.8 |

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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