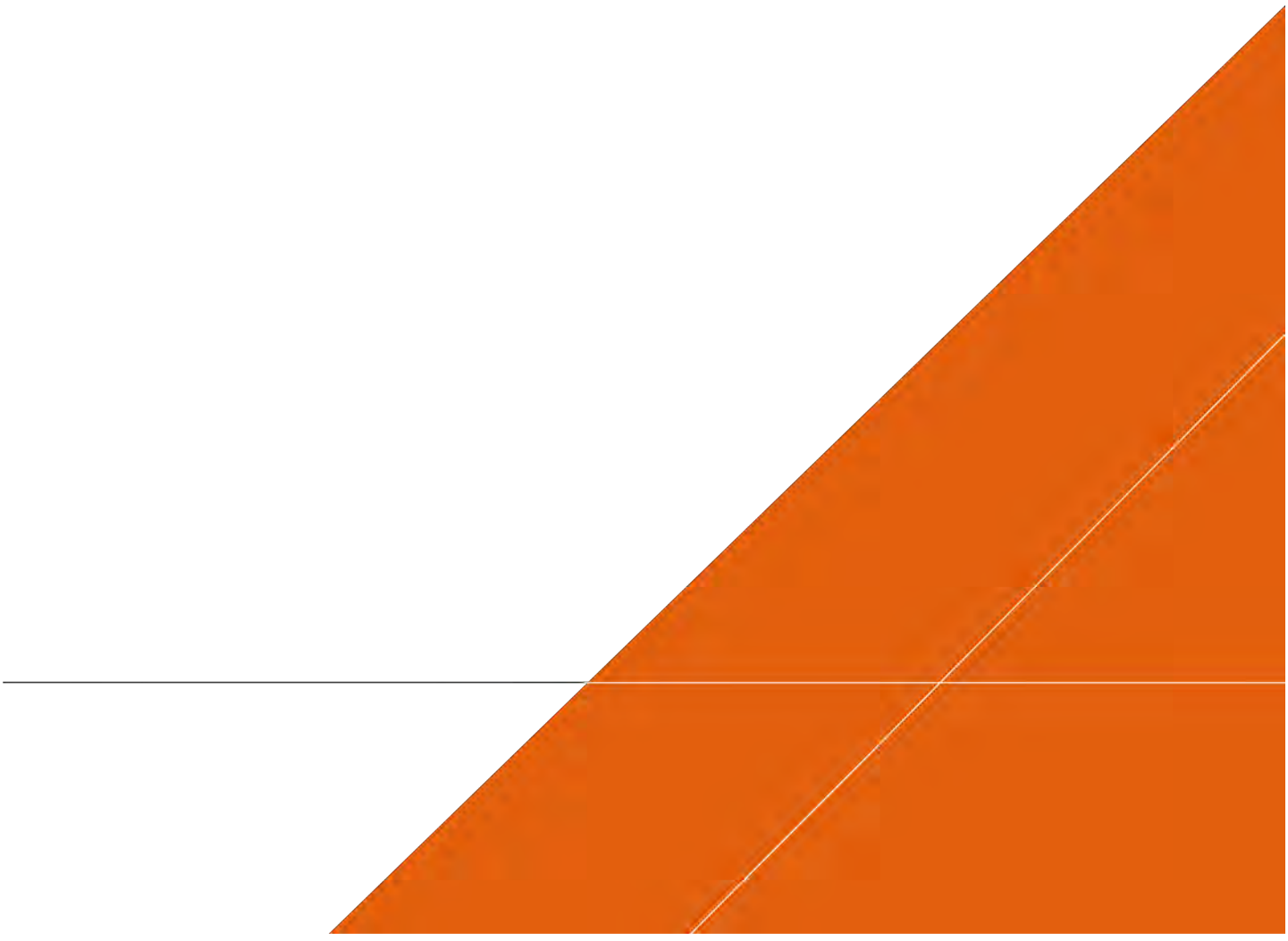
ARCADIS Design & Consultancy for natural and built assets

Transport for NSW

PRINCES HIGHWAY UPGRADE PROGRAM - JERVIS BAY ROAD INTERSECTION UPGRADE

Preliminary Site Investigation

19 JANUARY 2021



TRANSPORT FOR NSW
PRELIMINARY SITE INVESTIGATION

Princes Highway Upgrade Program

Jervis Bay Road Intersection Upgrade

Author	Author Name	Michael Ashelford
Checker	Checker Name	Doug Craven
Approver	Approver Name	Loek Munnichs

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CONTENTS

APPENDICES

ABBREVIATIONS

Acronym	Definition
ABN	Australian Business Number
AEC	Aera of Environmental Concern
ASC NEPM	Assessment of Site Contamination – National Environmental Protection Measure
AST	Above-ground Storage Tank
ACM	Asbestos Containing Material
AF/FA	Asbestos Fines / Fibrous Asbestos
AHD	Australian Height Datum
ANZECC	Australian New Zealand Environment Conservation Council
ANZG	Australian and New Zealand Governments
BOD	Biological Oxygen Demand
BTEXN	Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene
$CaCO_3$	Calcium Carbonate
CoPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
DO	Dissolved Oxygen
DP	Deposited Plan
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ERA	Ecological Risk Assessment
REF	Review of Environment Factors
HEPA	Heads of EPAs Australia and New Zealand
LEP	Local Environmental Plan
LGA	Local Government Area
NSW	New South Wales
NSW EPA	New South Wales Environment Protection Authority
OCP & OPP	Organochlorine & Organophosphorus Pesticides
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated Biphenyls
PSI	Preliminary Site Investigation
PACM	Potential Asbestos Containing Material
PFAS	Per- and polyfluoroalkyl substances
TRH	Total recoverable hydrocarbons
UST	Underground Storage Tank

EXECUTIVE SUMMARY

Transport for NSW proposes to upgrade the intersection of Jervis Bay Road and the Princes Highway in the vicinity of Falls Creek, NSW (Appendix A, Figure 1), located about 12 kilometres south of Nowra within the City of Shoalhaven local government area (the proposal). Arcadis Australia Pacific Pty Ltd (Arcadis) was commissioned by Transport for NSW to complete a preliminary site investigation (PSI) for the proposal. The proposal location is shown in Appendix A, Figure 1 and the proposal footprint is shown in Appendix A, Figure 2.

The scope of the works for the PSI were conducted by Arcadis in August – September 2020 in the site investigation area outlined in Appendix A, Figure 3.

Objectives

The objectives of the PSI were:

- Assess the site investigation area for visible contamination to soils and surface water.
- Identify areas of environmental concern for contamination within the site investigation area.
- Assess potential risks associated with the disturbance of areas of environmental concern for contamination as a result of the proposal
- Recommend environmental management measures to manage identified risks and further investigation.

Scope of Work

Arcadis completed the following scope of work:

- Desktop searches including:
  - Review of historical aerial photographs, zoning plans, geology, topography, hydrology, hydrogeology and acid sulphate soils information.
  - Review of contaminated land registers:
    - Protection of the environment operations act 1997, public register.
    - Contaminated land management act 1997, contaminated land public records notices.
  - Assessment of past and present potentially contaminating activities in the site investigation area and surrounding area.
- Site visit and walkover inspection to assess for:
  - Obvious signs of potential contamination and/or contaminant sources (ie fragments of potential asbestos containing material (PACM), stains, spills, odours, distressed vegetation, etc).
  - Visual evidence of current or former potentially contaminating activities (ie above ground storage tanks (ASTs) or underground storage tanks (USTs), waste drums, hazardous chemical storage, drainage, industrial workshops etc).
  - Potentially hazardous materials in infrastructure within the site investigation area.
- Anecdotal interviews with commercial operators and residents on the history, current and former land uses of the site investigation area
- Identification of known and potential sources of contamination and contaminants of concern
- Identification of potentially potential human and ecological receptors
- An assessment of potentially complete exposure pathways
- Identification of areas of environmental concern for contamination

- Identification of strategies for the management of potential risks identified associated with the proposal.

Summary of Findings

Through desktop searches and a site inspection, Arcadis identified three areas of environmental concern (AEC) and assessed potentially hazardous or contaminating material at residential dwellings within the site investigation area. AEC 1 and 2 are former petrol stations with fuel storage tank infrastructure intact. AEC 3 is an area of asbestos soil contamination. All areas of environmental concern potentially present a risk to residents or construction workers which require further assessment and risk mitigation prior to conducting site works. Additionally, potentially asbestos containing material was identified in most structures within the site investigation area and home workshops containing low-moderate quantities of hydrocarbon oils were identified in two locations.

Conclusions and Recommendations

Based on the preliminary site investigation conducted within the site investigation area located at the intersection of the Princes Highway and Jervis Bay Road, Falls Creek NSW, the following conclusions have been made:

- Inspection of the site investigation area on 20 August 2020 identified:
  - Road waste, including pesticides and hydrocarbons adjacent the Princes Highway
  - Asbestos in soil from past land decommission and construction of the Princes Highway
  - Numerous dwellings and infrastructure within the site investigation area likely to contain hazardous materials (asbestos, lead paint and PCBs).
  - Home workshop activities at 40 Jervis Bay Road, Falls Creek (Lot 6 DP15507) and 953 Princes Highway, Falls Creek (Lot 63 DP15507) containing substantial quantities of contained hydrocarbon fluids, with off-site fluid disposal
  - Substantial drainage line modification and sediment transport across the site investigation area
  - Liquid waste disposal occurs primarily through on-site septic systems
- Three potential areas of environmental concern (AEC) were identified within the site investigation area from the site inspection:
  - AEC 1 - 125 Old Princes Highway, Falls Creek (Lot 2 DP557598)
    - Former petrol station, current operational above ground storage tank on-site
    - Underground services decommissioned (unknown method)
  - AEC 2 - 124 Old Princes Highway, Falls Creek (Lot 7 DP32247)
    - Former petrol station, all underground services intact
    - Former workshop, spray shop and panel beaters
  - AEC 3 - Lots 2 and 3 DP244495
    - Asbestos in soil
- Potential risks to site receptors exist from the identified potential contaminant sources through identified transport pathways:
  - Pathways include direct contact with soil and groundwater, ingestion of soil, groundwater and surface water, vapour and dust inhalation
  - Receptors include site and downgradient residents, site workers, intrusive / maintenance workers, livestock and downgradient ecological receptors.

Based on the conclusions of the preliminary site investigation, Arcadis makes the following recommendations:

- Undertake a hazardous building assessment for Asbestos and lead paint prior to impacting or demolishing structures within the site investigation area
- Remove potentially contaminating material/debris from the surface of embankment of the Princes Highway and workshops at 40 Jervis Bay Road, Falls Creek (Lot 6 DP15507) and 953 Princes Highway, Falls Creek (Lot 63 DP15507) prior to initiating demolition or earthworks activities
- Assess the risks to current site owners and construction/maintenance workers around the former twin petrol stations at 125 (AEC 1) and 124 (AEC 2) Old Princes Highway, Falls Creek. Assessment should be undertaken in the form of a detailed site investigation (DSI), with sampling of soils, groundwater and soil gas to assess on-site contamination and the potential for off-site contaminant migration
- Remove asbestos sheeting from the surface of AEC 3 and assess soil for asbestos contamination prior to initiating earthworks activities.

1 INTRODUCTION

1.1 The proposal

Transport for NSW proposes to upgrade the intersection of Jervis Bay Road and the Princes Highway in the vicinity of Falls Creek, NSW, located about 12 kilometres south of Nowra within the City of Shoalhaven local government area. The proposal would provide a grade separated through alignment for the Princes Highway with network access to Jervis Bay Road and Old Princes Highway provided via dual at grade roundabouts serviced by on and off ramps.

Key features of the proposal are shown in Appendix A Figure 2 and would include:

- A new intersection between Jervis Bay Road and the Princes Highway, incorporating:
  - Realignment of the existing Princes Highway, including widening from two lanes to a four-lane divided highway (two lanes in each direction), with median separation using flexible safety barriers, providing an uninterrupted through alignment for the Princes Highway
  - An overpass bridge over Jervis Bay Road
  - An unsignalised single-lane at-grade double roundabout interchange providing:
    - Direct access from Jervis Bay Road and Old Princes Highway to the Princes Highway
    - Direct access from the Princes Highway to Jervis Bay Road and Old Princes Highway.
  - Direct connection to existing properties and businesses at the Old Princes Highway
  - A connection from Willowgreen Road to Old Princes Highway
  - Tie-ins with the Old Princes Highway and with Jervis Bay Road
- Access road to service Princes Highway properties south east of the intersection
- Shared user paths along Jervis Bay Road, connecting to the new bus bay and Jervis Bay Road and Old Princes Highway road shoulders
- Adjustments of drainage infrastructure and provision of new drainage infrastructure such as pit and pipe networks, culverts, open channels and retention basins
- Permanent water quality measures such as vegetated swales, bioretention swales and bioretention basins
- Adjustment, protection and relocation of existing utilities
- Other roadside furniture including safety barriers, signage, line marking, lighting and fencing
- A bus bay adjacent to the interchange, including kiss and ride car spots
- Establishment and use of temporary ancillary facilities during construction
- Property works including acquisition, demolition and adjustments to accesses, and at-property noise treatments
- Rehabilitation of disturbed areas and landscaping.

A detailed description of the proposal is provided in Chapter 3 of the review of environmental factors (REF).

1.2 Key construction activities

Key construction activities would include:

- Pre-construction and early works
  - Demarcation of construction footprint with construction fencing and temporary safety barriers where required
  - Installation of erosion and sediment controls

  - Set up of temporary traffic management arrangements
- Site establishment
  - Site survey, geotechnical and other investigations
  - Pre-clearing biodiversity surveys
  - Vegetation clearing and grubbing
  - Mobilisation and establishment of ancillary facilities
- Intersection construction
  - Utilities relocation/protection including overhead power lines
  - Construct temporary Jervis Bay Road alignment
  - Construct access road for south eastern properties
  - Construct Old Princes Highway connection
  - Construct eastern and western ramps and associated fill embankment
  - Construct bridge, bridge abutments and retaining walls
  - Construct roundabouts and connecting roads
  - Tie-in works
  - Construction of new drainage structures and extension or replacements of existing drainage structures.
  - Construction of pavement layers including selected material, sub-surface drainage, subbase and base layers and surfacing
  - Construction of vegetated swales, bioretention swales and bioretention basins
  - Installation of lighting, safety barriers, traffic signs and bus shelters
  - Line marking and raised pavement markers
  - Fencing
  - Property accesses adjustments
- Finishing work
  - Rehabilitation of disturbed areas and landscaping in accordance with the urban design and landscape plan
  - Installation of safety barriers, street lighting, fencing and roadside furniture
  - Decommission and rehabilitation of ancillary facilities.

Subject to the proposal obtaining planning approval, construction is anticipated to commence in 2022 and is expected to take around two years to complete.

1.3 Construction footprint and ancillary facilities

The area required to construct the proposal and the ancillary facilities needed to support the proposal construction are described in Table 3-1 and shown in Appendix A, Figure 2.

Table 1-1: Ancillary facilities

Parameter	Details
Address	124 – 130 Old Princes Highway, Falls Creek 24 – 132 Jervis Bay Rd, Falls Creek

Parameter	Details
	953 – D941b Princes Highway, Falls Creek 4 Gardner Road, Falls Creek Nsw 2540 24 Willowglen Road, Falls Creek
Location (GDA94/ MGA 56)	279813 East, 6126164 North

1.4 Objectives

The objectives of the PSI were to:

- Assess the site investigation area for visible contamination to soils and surface water
- Identify areas of environmental concern for contamination within the site investigation area.
- Assess potential risks associated with the disturbance of areas of environmental concern for contamination as a result of the proposal
- Recommend environmental management measures to manage identified risks and further investigation.

2 SCOPE OF WORK

The Scope of Work Completed for the PSI involved the following tasks.

2.1 Desktop searches

Desktop searches including:

- Review of historical aerial photographs, zoning plans, geology, topography, hydrology, hydrogeology and acid sulphate soils information.
- Review of contaminated land registers:
  - Protection of the environment operations act 1997, public register.
  - Contaminated land management act 1997, contaminated land public records notices.
- Assessment of past and present potentially contaminating activities in the site investigation area and surrounding area.

2.2 Visual inspection

Site visit and walkover inspection to assess for:

- Obvious signs of potential contamination and/or contaminant sources (ie fragments of potential ACM (PACM), stains, spills, odours, distressed vegetation, etc).
- Visual evidence of current or former potentially contaminating activities (ie above ground storage tanks (ASTs) or underground storage tanks (USTs), waste drums, hazardous chemical storage, stains, industrial workshops etc).
- Potentially hazardous materials in infrastructure within the site investigation area.
- Anecdotal interviews with commercial operators and residents on the history, current and former land uses of the site investigation area.

2.3 Contaminants of concern, receptors and pathways

- Identification of known and potential sources of contamination and contaminants of concern
- Identification of potentially potential human and ecological receptors
- Assessment of potentially complete exposure pathways.

2.4 Identification of areas of environmental concern for contamination

Based on the above information, areas of environmental interest for contamination were identified as well as their associated comparative risks to environmental receivers, construction limitations and site users in consideration of the potential for contamination and proposed construction activities.

2.5 Identification of environmental management measures

Strategies for the management of potential contamination risks identified associated with the construction and operation of the proposal were identified as well as the need for further contamination investigations.

3 SITE INVESTIGATION AREA

The site investigation area for the PSI is presented in Appendix A, Figure 2 and is centred on of the intersection of the Princes Highway and Jervis Bay Road and extents approximately 900 metres north and 600 metres south along the Princes Highway and approximately 600 metres east along Jervis Bay Road. The site investigation area comprises the existing road reserves, and extends 50 to 100 metres into adjacent properties on either side of both the Princes Highway, Jervis Bay Road and the Old Princes Highway. The approximate site investigation area is a total of 36.52 hectares and includes formed roads, residential and commercial premises, agricultural land and virgin bushland.

The site investigation area encompasses rural-residential properties bisected by the Princes Highway. Commercial activities are limited, with the majority of RU2 and R5 zoned lands used for agricultural purposes. Rural properties have been subdivided with dwellings in closer densities on the western side of the Old Princes Highway, southern side of Jervis Bay Road and eastern side of Princes Highway. Semi-rural properties maintain remnant features of former rural activities, including on-site dams, machinery sheds/workshops, detached dwellings and grazing fences. A small number of businesses remains on the Old Princes Highway, with combined commercial/residential properties attached to agricultural land. Recent land clearing and disturbance east of the Princes Highway has occurred for cattle grazing.

Site investigation area details are summarised in Table 3-1.

Table 3-1: Summary of Project site investigation area

Parameter	Details
Address	124 – 130 Old Princes Highway, Falls Creek 24 – 132 Jervis Bay Rd, Falls Creek 953 – D941b Princes Highway, Falls Creek 4 Gardner Road, Falls Creek Nsw 2540 24 Willowglen Road, Falls Creek
Location (GDA94/ MGA 56)	279813 East, 6126164 North
Area	365,200 m^2
Lots / Deposited Plans	Lots 10-15 DP1042235. Lot 179 DP1055671. Lot 7014 DP1064563. Lots 35-37 DP1064563. Lots 1-10 DP1093336. Lot 3 DP1111774. Lot 2 DP1249140. Lots 5-10 and 69-54 DP15507. Lot 38 DP24409. Lots 1-7 DP32247. Lot B DP392033. Lot C-D DP397515. Lots 1-2 DP557598. Lot 91 DP651389. Lot 6 DP703234. Lot 571 DP748653. Lot 127 DP755965. Lot 4 DP773881. Lot 345 DP836413. Lots 1-2 DP 871596.
Local Government Area	Shoalhaven City Council
Current use(s)	Transport. Residential. Commercial. Agricultural. Public Open Space.
Shoalhaven Local Environmental Plan zoning	SP2 Infrastructure RU2 Rural Landscape R5 Large Lot Residential
Surrounding land uses	Transport. Residential. Commercial. Agricultural. Public Open Space.

4 SITE INVESTIGATION AREA HISTORY

The following section includes results of the desktop investigation and searches (Lotsearch 2020, *Appendix D*), current aerial imagery (Nearmap 2020, Appendix A) and the results of the site visit on 20 August 2020. Field notes are provided in Appendix B and site photographs are provided in Appendix C**.**

4.1 Review of Council Records

A review of council records found the following in regards to the site investigation area and surroundings:

- There is no Mining Subsidence Districts or current exploration titles.
  - Historically nine (9) mining and exploration titles have been active within or adjacent the site investigation area.
  - The most recent expiry of Leichhardt Resources petroleum exploration licence in 2014 was the last remaining licence.
  - No applications for mining or exploration licences were reported withing the site investigation area or surrounds.

4.2 Zoning

The following Environmental Planning Instrument (**EPI**) Land Zones are currently present within the site investigation area:

- SP2 Infrastructure
- RU2 Rural Landscape
- R5 Large Lot Residential

Zones RE1 Public Recreation, W1 Natural Waterways and RU3 Forestry are present within one kilometre of the site investigation area. A figure showing the EPI Zoning is presented in the Lotsearch report available in ***Appendix D, Page 57***.

4.3 Historical Land Use – Aerial Photograph Review

4.3.1 Aerial Imagery Review (Historical and Current)

A review of the aerial images shown in Appendix D is presented in Table 4-1**.**

Table 4-1: Summary of Aerial Photograph and Historical Map Review

Year	Apparent Site investigation area Use	Surrounding Areas Features
1949	The site is predominantly bushland. The Old Princes Highway and Jervis Bay Road intersect in the centre of the site. One building is present on the western side of the Old Princes Highway, adjacent intersection. The eastern side of the highway supports local grazing and some small farm sheds. Grazing land extends either side of the Old Princes Highway, with two farmhouses, one either side of the highway, approximately halfway down the site investigation area.	West of the Old Princes Highway is grazing land with minor farm sheds and bushland around creek lines. East of the Old Princes Highway is native bushland.

Year	Apparent Site investigation area Use	Surrounding Areas Features
1969	Land clearing has occurred either side of the Princes Highway south of the intersection to make way for increase agricultural plots and some residential dwellings off the thoroughfare. Buildings have been added adjacent the existing building immediately west of the intersection at 124 Old Princes Highway. Structures have been erected on the eastern side of the intersection at 125 Old Princes Highway. Land clearing has occurred in three lots south of Jervis Bay Road, with the erection of one house in the central lot.	West of the Old Princes Highway has been further cleared for grazing land.
1974	The Princes Highway is being constructed. Further land clearing south of Jervis Bay Road and surrounding the Princes Highway has occurred.	Minor land clearing outside the site investigation area.
1984	The Princes Highway has been constructed. Access to the Princes Highway from the Old Princes Highway occurs immediately south of 125 Old Princes Highway. All land south of Jervis Bay Road and South of the Princes Highway intersection has been cleared. Properties have been erected either side of the Princes Highway and south of Jervis Bay Road. A large, disturbed area of land extends north of the structures to the west of the Old Princes Highway. This is possibly a carpark, storage area or foundations for a building.	A powerlines reserve has been cut west of the Princes Highway / Old Princes Highway. A large area of land has been cleared for grazing north-west of the site investigation area. Surface water dams have been constructed north-west of the site investigation area and south of Jervis Bay Road. Further clearing and development extends south of the site investigation area.
1993	Construction of residential dwellings has occurred across land previously cleared for grazing/agriculture along the Princes Highway and Jervis Bay Road. A shed has been added to the north of existing structures on the west side of the Old Princes Highway.	Additional dwellings erected on previously cleared agricultural land.
2002	Addition of dwellings west of the Old Princes Highway and Princes Highway. Sheds added adjacent to existing dwellings south of Jervis Bay Road.	Little to no change.
2009	Warehouse added at 125 Old Princes Highway (south of existing structures). Awning at former petrol station at 124 Old Princes Highway partially removed. Little to no change in the existing area.	Little to no change.
2015	Minor amendments to property layouts, including small sheds/structures. Otherwise little to no change.	Little to no change.
2019	Addition of a shed/awning at 125 Old Princes Highway. Regrowth of vegetation around previously cleared land is apparent.	Little to no change.
2020	Clearing of vegetation east of the Princes Highway in a grid pattern and installation of boundary fences.	Little to no change.

4.3.2 Historical Businesses

No record of historical potentially contaminating businesses were found as part of the desktop search. The business activities in Table 4-2 were recorded from the site walkover and anecdotal site history.

Table 4-2: Summary of Potentially Contaminating Businesses

Business type	Property Use (Current / Historical)	Location of Property
Petrol Station and Workshop	Historical	Lot 7 DP32247
Smash Repairs	Historical	Lot 7 DP32247
Petrol Station	Historical	Lot 2 DP557598
Stock feed / Fuel	Current	Lot 2 DP557598

4.4 Anecdotal History

Anecdotal evidence was gathered during informal discussions with property owners at 125 Old Princes Highway, Falls Creek (Lot 2 DP557598), 124 Old Princes Highway, Falls Creek (Lot 7 DP32247), 40 Jervis Bay Road, Falls Creek (Lot 6 DP15507) and 953 Princes Highway, Falls Creek (Lot 63 DP15507). These discussions are summarised below.

125 Old Princes Highway, Falls Creek (Lot 2 DP557598)

Property owners of Lot 2 DP557598 identified the site as a former petrol station that has maintained operation as a fuel storage and distribution facility and still maintains current zoning / licencing for commercial operation. Arcadis is anecdotally aware of the following:

- Two underground storage tanks (USTs) remain buried on-site, however these were decommissioned (unknown method) prior to transfer of ownership in 2009. The general location of the USTs is provided in Appendix A, Figure 5 (Appendix C, Photo 11). Fuel transfer lines and subsurface infrastructure remained underground. Surface infrastructure such as fuel bowsers have been removed from the site (Appendix C, Photo 10).
- Soil investigation works were completed prior to the sale of the property in 2009, clearing the site of contamination for its current use. Arcadis has not obtained or sighted copies of these reports and anecdotal information may be inaccurate.
- The site contains an above storage tank (AST) holding diesel fuel and an operation bowser, both contained within a concrete bund. No diesel UST was installed on-site.
- Feedstock is held and mixed on-site, including liquid feed.
- All fertilisers on-site are pre-bagged and no mixing or production of fertiliser occurs on-site.
- A metal drum incinerator is on-site for burning excess packaging cardboard that is occasional contaminated with chicken blood from poultry operations and cannot be recycled.

The site receives substantial surface water runoff from the eastern side of the Princes Highway and the highway itself. In heavy rainfall events (approximately 100-150 mm), shallow floodwaters rise to cover the site.

124 Old Princes Highway, Falls Creek (Lot 7 DP32247)

The Property owner of Lot 7 DP32247 identified the site as a former BP petrol station *BP Falls Creek* with an attached shop and mechanics workshop (Appendix C, Photos 13 -18). On cessation of the petrol station, the Panel Beaters continued to operate, however zoning changes have restricted the land use to residential only operation, with the workshop used for home-use and maintaining agricultural machinery for land outside the site investigation area. Arcadis is anecdotally aware of the following:

- Four USTs are still on-site, with all subsurface infrastructure intact.
  - Three USTs held petrol (near the house) and one UST held diesel (near the workshop).
  - The fill points of all USTs have been filled with cement.
  - Filling points, dip points and breather lines are all present.
- Bowsers were removed by the property owner.
- The on-site workshop still operates most mechanical and spraying functions for home-use.
- Sewerage / site waste goes off-site via a trench/pit to the west of the property (not observed).

40 Jervis Bay Road, Falls Creek (Lot 6 DP15507)

The property owner and residents of Lot 6 DP15507 identified the current on-site activities as hobby-farming and small home-workshop for light and medium vehicle repairs. Waste oils and automotive fluids/chemicals were identified and described as being temporally on-site prior to off-site disposal. The sign out the front of the property for an excavations business is advertising for a relatives' off-site company and no plant machinery work occurs on-site.

953 Princes Highway, Falls Creek (Lot 63 DP15507)

The property owners of 953 Princes Highway, Falls Creek (Lot 63 DP15507) identified the site as residential with no on-site commercial activities. The owners runs a resin pool manufacturing business off-site. Storage of waste (empty) intermediate bulk containers (IBCs) and metal drums (mostly empty) containing Allnex Resin Solution are from pool manufacturer works (Photos 19 – 22). Waste oil on-site (approximately 300 litres) in an IBC is temporary and stored from a relative's property. Oil is overlying a metal bund and is being decanted into spent metal drums, previously holding Allnex resin, acetone or oil (Photos 19 and 20). Once decanted, all oil is being recycled off-site. No previous or on-going industrial potentially contaminating activities were observed at the site and no evidence of impacts to soil or water were observed.

4.5 NSW EPA Contaminated Land database and the National Waste Management Liquid Fuel database searches

A search of the NSW EPA Contaminated Land databases and the National Waste Management Liquid Fuel databases for the Site was conducted on 28 August 2020. No records in the site investigation area or buffer were present in the following databases:

- NSW EPA Contaminated Land List
- Contaminated Land: Records of Notice
- Former Gasworks
- National Waste Management Site Database
- National Liquid Fuel Facilities

Two Per- and polyfluoroalkyl substances (PFAS) locations were reported approximately 500 metres north (down gradient) of the site investigation area. Both sites are related to HMAS Albatross in Nowra:

- Defence PFAS Investigation Program
  - HMAS Albatross Investigation Area Extent

- EPA PFAS Investigation Program
  - Currambene Creek

No other EPA sites with contamination issues were identified in the reported buffer around the site investigation area.

4.6 Former Industrial and Manufacturing Activities

Lot 7 DP32247 contains a former smash repair workshop which involved the following activities:

- Panel Beating
- Mechanical Repairs
- Spray Painting.

Home workshops or evidence of former home workshops were identified at the following locations, with currently occurring activities:

- Lot 7 DP32247. Former smash repair workshop – current home/farm mechanic workshop
- Lot 6 DP15507. Current home workshop – light-medium vehicles.
- Lot 63 DP15507. Current home workshop with oil decanting. Offsite resin pool manufacture.

4.7 Hazardous Materials

Potential asbestos containing material was observed in soils at the western end of Lots 2 and 3 DP244495 (Appendix A, Figures 3 and 4, and Photos 3 and 4 in Appendix C). PACM in sheet form has been crushed and PACM impacted soil in this location has been spread by recent earthworks. PACM is present in the drainage line that discharges to 125 Old Princes Highway, Falls Creek (Lot 2 DP557598).

PACM is present in multiple dwellings within the site investigation area. While PACM is likely present as a component in most dwellings (ie perimeter eves and electrical boards), substantial PACM is present in fibro structures within the site investigation area at: Lot 2 DP557598 and Lot 7 DP1557.

Electrical transformers potentially containing Polychlorinated biphenyls are present on power poles on Old Princes Highway. No ground-based transformers or substations were present.

Older dwellings may contain lead-based paint as an outer sealant. Flaking paint observed on older fibro dwellings that contain lead may result to increased lead concentrations in soils immediately surrounding dwellings.

4.8 Storage Tanks

A total of seven (7) storage tanks were visually and anecdotally identified within the site investigation area. These include:

- Three storage tanks at 125 Old Princes Highway (Lot 2 DP557598), including two inactive petrol USTs and one active diesel AST were identified. The location of the decommissioned USTs is approximate, and decommissioning and site assessment information is anecdotal.
- Four inactive USTs are present at 124 Old Princes Highway (Lot 2 DP557598). Three petrol USTs and one diesel UST were identified. No decommissioning information is available.

4.9 Discharges to Land, Water and Air

Properties within the site investigation area discharge sewerage to on-site septic tanks. Dial before you dig (DBYD) plans for the site investigation area do not show sewer services available to dwellings. Anecdotal evidence collected for 124 Old Princes Highway (Lot 2 DP557598) indicated a trench extending to the west of the site was dug for sewerage and potentially other wastes.

No product spill loss history documents were available for former industrial/commercial sites. On-site cardboard incineration occurs at 125 Old Princes Highway (Lot 2 DP557598), with other commercial waste removed from site.

4.10 Previous Environmental Assessments

Arcadis has not obtained copies of environmental assessment reports anecdotally known to have occurred at 125 Old Princes Highway (Lot 2 DP557598). No other environmental investigations are known for the site investigation area.

5 SITE INVESTIGATION AREA CONDITION AND SURROUNDING ENVIRONMENT

5.1 Site Inspection

A site inspection and walkover was conducted on 20 August by an Arcadis Environmental Scientist.

The following section includes results of the desktop investigation and searches and the results of the site visit. Field notes are provided in Appendix B and site photographs are provided in Appendix C**.**

5.1.1 Visible Signs of Contamination

Diesel from the AST and bowser at 125 Old Princes Highway, Falls Creek (Lot 2 DP557598) was observed to have leaked in the past with visible staining on the cement bund. The bund is of moderate condition. Soil contaminated with PACM was observed on Lots 2 and 3 DP244495 (Appendix A, Figures 3 and 4). No other soil or surface water was observed to show signs of contamination.

5.1.2 Olfactory Observations

A mild diesel odour was observed adjacent the active diesel AST 125 Old Princes Highway, Falls Creek (Lot 2 DP557598). A mild hydrocarbon odour was observed at the workshop of 40 Jervis Bay Road, Falls Creek (Lot 6 DP15507).

5.1.3 Surrounding Land Use

The land uses surrounding the Site are as follows:

- North: Virgin bushland and cleared grazing land in Rural Landscape and Public Recreation zones.
- East:
  - North of Jervis Bay Road: Virgin bushland and cleared grazing land in a Rural Landscape zone.
  - South of Jervis Bay Road: Virgin bushland, cleared grazing land and residential dwellings in Rural Landscape and Large Lot Residential zones.
- South: Residential dwellings in a Large Lot Residential zone.
- West: Virgin bushland and cleared grazing land in a Rural Landscape zone.

5.2 Topography

The study area is relatively flat at 20 – 30 meters Australian Height Datum (mAHD), with a gradual slope from 30 mAHD in the east to 20 mAHD in the west, creating a marginal western aspect. The largest topographic features are approximately 5 metres earthen wall embankments supporting the northern arm of the Princes Highway and the northern side of Jervis Bay Road near the intersection. A minor gully with an approximate 2 metres drop is present immediately north of Willowgreen Road.

5.3 Hydrology

Regional hydrology remains relatively intact, with the exception of local influences caused by the construction of the Princes Highway. Surface water from the site investigation area and surrounding land drains to the Parma Creek (freshwater). The confluence of Parma Creek with Currambene Creek is a bedrock step and the tidal limit of Currambene Creek. Surface water drains east in Currambene Creek to Jervis Bay.

Small on-site retention ponds for stock or ornamental gardens are present at properties on Jervis Bay Road. Natural drainage lines east of the Princes Highway and South of Jervis Bay Road remain intact

and channel under the Princes Highway at the Princes Highway - Willowgreen Road intersection. Drainage lines east of the Princes Highway and North of Jervis Bay Road have been extensively modified. A drainage channel has been cut into shallow soil on the northern side and parallel to Jervis Bay Road. This channel connects to a table drain east and parallel to the Princes Highway, that passes under the Princes Highway through culverts. One culvert exits to an earthen batter drain, which is causing bank erosion prior to entering the table drain parallel to the Old Princes Highway. Drainage from the northern culverts floods out onto Lot 127 DP755965 and Lot 179 DP 1055671, creating a shallow surface swamp.

Parts of the site investigation area to the west of the Princes Highway have been identified by Shoalhaven City Council as areas subject to flooding in a 1 in 100-year average recurrence interval (ARI) event. Anecdotal evidence from property owners at 125 Old Princes Highway, Falls Creek, indicated that the area receives substantial flood waters. Flooding primarily arises from drainage lines to the west of the site investigation area, however the drainage from the culverts under the Princes Highway have increased the rate of discharge and flood peak.

5.4 Regional and Local Geology

Regional geology (Lotsearch 2020) identifies Cainozoic alluvium, gravel, sand, silt and clay across the majority of the site investigation area. Alluvial deposits in the site investigation area are described as Kurosols (hard acidic yellow and yellow mottled soils (Dy2.41) and (Dy3.41), sometimes containing ironstone gravel. Associated are hard acidic red soils (Dr2.21, Dr2.41), and small areas of other soils, including (Gn2) and (Gn3.54)). Soils are listed in Acid Sulfate Soil (ASS) Class 5 and have an ASS probability of occurrence between 1-5 % (extremely low – Class C).

These sedimentary deposits overly Palaeozoic quartzose sandstone with minor siltstone and conglomerate beds of the Shoalhaven Group. Northwest of the site investigation area, Shoalhaven Group Berry Siltstone (bluish grey to light grey siltstone, shaly in part with bands of silty sandstone), outcrops in the drainage line. Wandrawandian Siltstone of the Shoalhaven Group (mid grey to blue grey, fine grained quartz lithic silty sandstone and siltstone), outcrops to the northeast of the site investigation area, in the drainage line below the bedrock step in Currambene Creek.

5.5 Regional and Local Hydrogeology

Hydrogeological data from domestic stock and mining exploration bores identified fractured and fissured extensive aquifers of low to moderate productivity (Lotsearch 2020). Shallow aquifers (24-30 metres below ground level (mbgl)) produce low salinity groundwater, whereas deeper bores (66-120 mbgl) produced moderately saline water.

5.5.1 Groundwater Data Base Search

Table 5-1: Groundwater Bore Details for the site investigation area and surrounding area (2 km buffer).

Well ID	Distance from the Site and Direction (m)	Year Installed	Uses	Depth of Bore (mbgl*)	Licence Number
GW072145	446 NE	1993	Domestic, Stock	24.0	10BL153672
GW005339	644 SE	1957	Domestic, Stock	58.0	10BL007129
GW072361	723 S	1996	Domestic, Stock	30.0	10BL156004
GW072988	916 S	1994	Domestic	30	10BL156197

Well ID	Distance from the Site and Direction (m)	Year Installed	Uses	Depth of Bore (mbgl*)	Licence Number
216003	1,298 N	-	-	-	-
216004	1,374 NE	-	-	-	-
GW069180	1,615 S	1991	Domestic, Stock	66.70	-
GW104109	1,781 E	2001	Domestic, Stock	120.0	10BL160296

* metres below ground level (mbgl)

5.6 Sensitive Environments

The nearest sensitive environments to the site investigation area and within the report buffer (1 km from the proposal) are as follows:

- Residential dwellings within and surrounding the site investigation area.
- Falls Creek School (Heritage Listed), 933 metres north of the site investigation area.
- Virgin bushland - native vegetation, within the site investigation area and north, east and west of the site investigation area.
- Parma Creek (freshwater) 400 metres northwest and Currambene Creek (estuary) 500 metres north of the site investigation area.

5.7 Proposed land use

Land within the site investigation area is to be developed for upgrading the Princes Highway and Jervis Bay Road intersection. Works will include expansion of the current road footprint and earthworks for supporting structures.

6 PRELIMINARY CONCEPTUAL SITE MODEL

6.1 Background

The Amended Assessment of Site Contamination – National Environmental Protection Measure (ASC NEPM) defines a Conceptual Site Model (CSM) as:

> *"a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors".*

Essential components of a conceptual site model include:

- Identification of known and potential sources of contamination and contaminants of concern including the mechanism(s) by which contamination occurred;
- Identification of potentially affected media (e.g. soil, sediment, groundwater, surface water, indoor or ambient air), and potential human and ecological receptors; and
- An assessment of potentially complete exposure pathways.

Based on available site information, the following Preliminary CSM has been prepared. The Preliminary CSM identifies potentially complete pathways between the identified potential sources and relevant receptors.

6.2 Potential Sources

Review of the current and historical information has identified potential sources contamination and associated contaminants of potential concern. A summary is provided in Table 6-1 below.

Table 6-1: Summary of Potential Sources of Contamination

Activity	Contaminants of Potential Concern
Highway waste on embankments (off passing vehicles) and fill in embankments.	Total recoverable hydrocarbons (TRHs). Benzene, toluene, ethylbenzene xylene, naphthalene (BTEXN). Polycyclic aromatic hydrocarbons (PAHs). Polychlorinated Biphenyls (PCBs) Heavy metals (e.g. arsenic, lead, copper, nickel, zinc). Asbestos. Organochlorine (OCP) and organophosphorus (OPP) pesticides.
Building decommission on Lots 2 and 3 DP244495 for Princes Highway construction.	Asbestos and lead (in soil).
Petrol Station	TRHs, BTEXN, PAHs, Heavy metals
Mechanics Workshop	TRHs, BTEXN, PAHs, PCBs, Heavy metals, Per- and polyfluoroalkyl substances (PFAS)
Panel beaters / spray shop	TRHs, BTEXN, PAHs, PCBs, Heavy metals, PFAS
Infrastructure (all buildings prior to 2003)	Asbestos and lead paint
Transformers	PCBs

Activity	Contaminants of Potential Concern
	PAHs

6.3 Potential Pathways and Receptors

For a source to pose a risk, two components are required:

- A pathway – a route by which a receptor is exposed to a source; and
- A receptor – something that may be affected by a contaminant.

Assessing the risk to specific receptors has not been conducted as part of this assessment, however potential pathways and receptors have been identified.

A summary of the potential receptors and pathways is presented in Table 6-2.

Table 6-2: Summary of Potential Receptors and Pathways

Receptors	Potentially Affected Media	Pathway
Construction and intrusive maintenance workers	Soil Soil Vapour Groundwater	Direct contact Ingestion Vapour / dust Inhalation
Commercial workers		
Current and future site users, including residents Residents / users of surrounding areas (domestic and stock bore users)		
Livestock / animals		
Residents, stock and ecological receptors - users of surface water bodies (drainage lines, downgradient creeks)	Soil, sediment	Surface water and sediment run-off – ingestion.
Proposed Development Workers	Soil Soil Vapour Groundwater	Direct contact and inadvertent ingestion / inhalation. Discharge of impacted groundwater into structure (ie TRHs, BTEXN).

7 AREAS OF ENVIRONMENTAL CONCERN FOR CONTAMINATION

Based on the information available from desktop searches, site investigation and preliminary conceptual site model, the following areas of environmental concern (AEC) for contamination were identified. AEC are displayed in Appendix A, Figure 4.

7.1 AEC 1 - 125 Old Princes Highway, Falls Creek (Lot 2 DP557598)

A former petrol station and current stock feed business with an operational diesel AST and observed diesel contamination in the bunded area. This AEC, including the location of two USTs and AST infrastructure is approximately 680 square metres. An additional incineration area of approximately 5 square metres is present at the south of the site.

The site holds room for residential occupation and is up-gradient of adjacent residential properties and surface water bodies.

7.2 AEC 2 - 124 Old Princes Highway, Falls Creek (Lot 7 DP32247)

The former BP Falls Creek Petrol Station, and current residential property with all underground infrastructure intact. This AEC contains four USTs, three for petrol and one for diesel to the north of the site. The former petrol station workshop and former panel beaters/spray shop remains in-situ. The AEC is approximately 780 square metres. Inclusion of the PACM in site structures (toilet block and house) would increase the area of the AEC.

The site is currently used as a residential and agricultural property and is upgradient of agricultural land and surface water environmental receptors.

7.3 AEC 3 - Lots 2 and 3 DP244495

Areas of Lots 2 and 3 DP244495 adjacent the table drain servicing the Princes Highway contain two areas of PACM in soil, with PACM extending into the table drain. The identified PACM is in a recently trafficked area and sheeting has been crushed by earthmoving.

The site drains through a culvert to Lot 1 DP244495 and the table drain / native vegetation adjacent the Old Princes Highway.

8 IMPACT ASSESSMENT

Site establishment and earthworks at the AECs identified in Section 7 pose potential risks to site receptors from the identified potential contaminant sources through identified transport pathways in the conceptual site model. This preliminary site investigation provides a desktop level, highly conservative source-pathway-receptor risk assessment that can be refined by a detailed site investigation, which has not yet been performed at the site.

- Risk exposure pathways include direct contact with soil and groundwater, ingestion of soil, groundwater and surface water, vapour, and dust inhalation.
  - Exposure to potential contamination is possible during surface clearing works (surface PACM), intrusive soil works and intrusive works that intersect the localised water table.
  - Secondary environmental exposure is possible during stockpiling of contaminated fill or purging of contaminated groundwater.
- Risk receptors include site and downgradient residents, site workers, intrusive / maintenance workers, livestock and downgradient ecological receptors.

To mitigate the risk of exposure to human and environmental receptors, environmental assessment and management measures can be implemented to characterise potential contamination and minimise exposure pathways. Environmental management measures that should be implemented are:

- Visual examination and removal of all potentially asbestos containing material as well as Asbestos Fines / Fibrous Asbestos analysis of soil in AEC 3 prior to surface soil disturbance.
- Characterisation of soil for contaminants of potential concern identified in this preliminary site investigation prior to intrusive works (cut/fill profiling, piling etc.).
- Characterisation of groundwater for contaminants of potential concern prior to intersecting groundwater during intrusive works, pumping or purging pit or borehole recharge water.
- Stockpiling and waste tracking of uncharacterised soil/groundwater.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

Based on the PSI conducted within the site investigation area located at the intersection of the Princes Highway and Jervis Bay Road, Falls Creek NSW, the following conclusions have been made:

- Inspection of the site investigation area on 20 August 2020 identified:
  - Road waste, including pesticides and hydrocarbons adjacent the Princes Highway.
  - Asbestos in soil from past land decommission and construction of the Princes Highway.
  - Numerous dwellings and infrastructure within the site investigation area likely to contain hazardous materials (asbestos, lead paint and PCBs).
  - Home workshop activities at 40 Jervis Bay Road, Falls Creek (Lot 6 DP15507) and 953 Princes Highway, Falls Creek (Lot 63 DP15507) containing substantial quantities of contained hydrocarbon fluids, with off-site fluid disposal.
  - Substantial drainage line modification and sediment transport across the site investigation area.
  - Liquid waste disposal occurs primarily through on-site septic systems.
- Three potential areas of environmental concern (AEC) were identified within the site investigation area from the site inspection:
  - AEC 1 - 125 Old Princes Highway, Falls Creek (Lot 2 DP557598).
    - Former petrol station, current operational above ground storage tank on-site.
    - Underground services decommissioned (unknown method).
  - AEC 2 - 124 Old Princes Highway, Falls Creek (Lot 7 DP32247).
    - Former petrol station, all underground services intact.
    - Former workshop, spray shop and panel beaters.
  - AEC 3 - Lots 2 and 3 DP244495.
    - Asbestos in soil.
- Potential risks to site receptors exist from the identified potential contaminant sources through identified transport pathways:
  - Risk exposure pathways include: direct contact with soil and groundwater, ingestion of soil, groundwater and surface water, vapour and dust inhalation.
  - Risk receptors include site and downgradient residents, site workers, intrusive / maintenance workers, livestock and downgradient ecological receptors.

9.2 Environmental management measures

The following table details recommendations for the management of contamination risks associated with the proposal.

Table 9-1: Environmental management measures

Impact	Environmental management measure
Dangerous goods	A Dangerous Goods search will be undertaken for Lot 7 DP32247 and Lot 2 DP557598 to inform the detailed site investigation and sampling locations.
Disturbance of contaminants	Undertake a hazardous building assessment for asbestos and lead paint prior to impacting or demolishing structures.

Impact	Environmental management measure
containing material	Remove asbestos sheeting from the surface of AEC 3 and assess soil for asbestos contamination prior to initiating earthworks activities.
Disturbance of contaminants containing material	Remove potentially contaminating material/debris from the surface of embankment of the Princes Highway and workshops at 40 Jervis Bay Road, Falls Creek (Lot 6 DP15507) and 953 Princes Highway, Falls Creek (Lot 63 DP15507) prior to initiating structures demolition or earthworks activities.
Former petrol stations	Assess the risks to current site owners and construction/maintenance workers around the former twin petrol stations at 125 (AEC 1) and 124 (AEC 2) Old Princes Highway, Falls Creek. Assessment should be undertaken in the form of a Detailed Site Investigation (DSI), with sampling of soils, soil gas and groundwater to assess the presence of on-site contamination and the potential for off-site contaminant migration.

9.3 Assumptions and Uncertainty

Arcadis has relied on external and third-party data and/or data that has not been verified by Arcadis. Additionally, anecdotal information has been gathered to inform details on the historical location and use of potentially contaminating substances. Arcadis makes no representations or warranties about the accuracy, completeness or suitability of this information for any particular purpose.

10 REFERENCES

- Lotsearch, LS014411 EP, Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540, 28 August 2020
- National Environment Protection Council, *National Environment Protection (Assessment of Site Contamination) Measure*, 1999 (as amended 2013).
- Nearmap, Aerial Imagery 17 August 2020, URL: https://www.nearmap.com/au/en
- NEMP 2020, PFAS National Environmental Management Plan Version 2.0 – January 2020, National Chemicals Working Group of the Heads of EPAs Australia and New Zealand
- NSW Environment Protection Authority, *Consultants reporting on contaminated land - Contaminated land guidelines*, 2020.

11 LIMITATIONS

The findings of this report are based on the Scope of Work described in this report. Arcadis Australia Pacific Pty Limited (Arcadis) performed the services in a manner consistent with the level of care and expertise exercised by members of the environmental profession.

No warranties, express or implied, are made. Subject to the Scope of Work, Arcadis' assessment is limited strictly to identifying typical environmental conditions associated with the subject property.

While normal assessments of data reliability have been made, Arcadis assumes no responsibility or liability for errors in any data obtained from regulatory agencies, statements from sources outside of Arcadis, or developments resulting from situations outside the scope of this project

Arcadis prepared this report for the sole and exclusive benefit and use of the client. Notwithstanding delivery of this report by Arcadis or the client to any third party, any copy of this report provided to a third party is provided for informational purposes only, without the right to rely.

Information from site observations made by Arcadis personnel relating to soil, groundwater, waste, air or other matrix conditions in this document is considered to be accurate at the date of issue. Surface, subsurface and atmospheric conditions can vary across a particular site or region, which cannot be wholly defined by investigation. As a result, it is unlikely that the observations presented in this report will represent the extremes of conditions within the site that may exist. Subsurface conditions including contaminant concentrations can change in a limited period of time and typically have a high level of spatial heterogeneity.

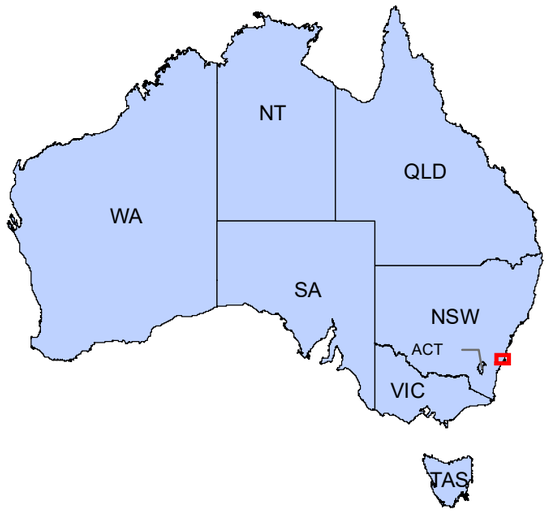
From a technical perspective, there is a high degree of uncertainty associated with the assessment of subsurface, aquatic and atmospheric environments. They are prone to be heterogeneous, complex environments, in which small subsurface features or changes in geologic conditions or other environmental anomalies can have substantial impact on water, air and chemical movement.

Arcadis' professional opinions are based upon its professional judgment, experience, and training. These opinions are also based upon data derived from the limited testing and analysis described in this report. It is possible that additional testing and analysis might produce different results and/or different opinions. Arcadis has limited its investigation(s) to the scope agreed upon with its client.

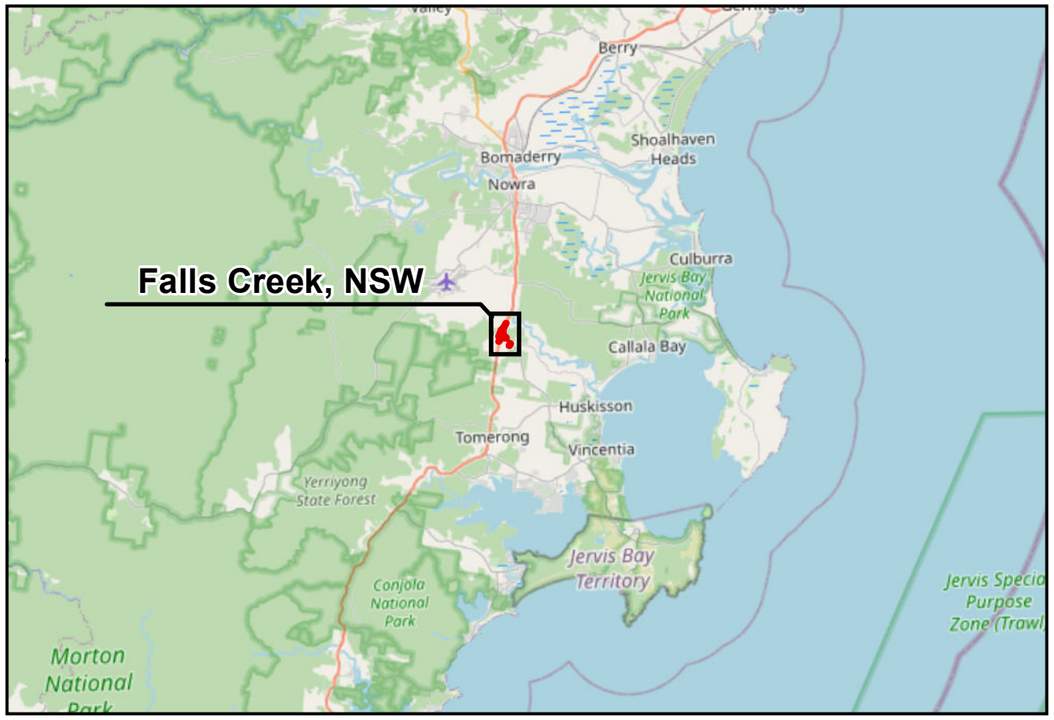
That standard of care may change, and new methods and practices of exploration, testing and analysis may develop in the future, which might produce different results.

APPENDIX A FIGURES

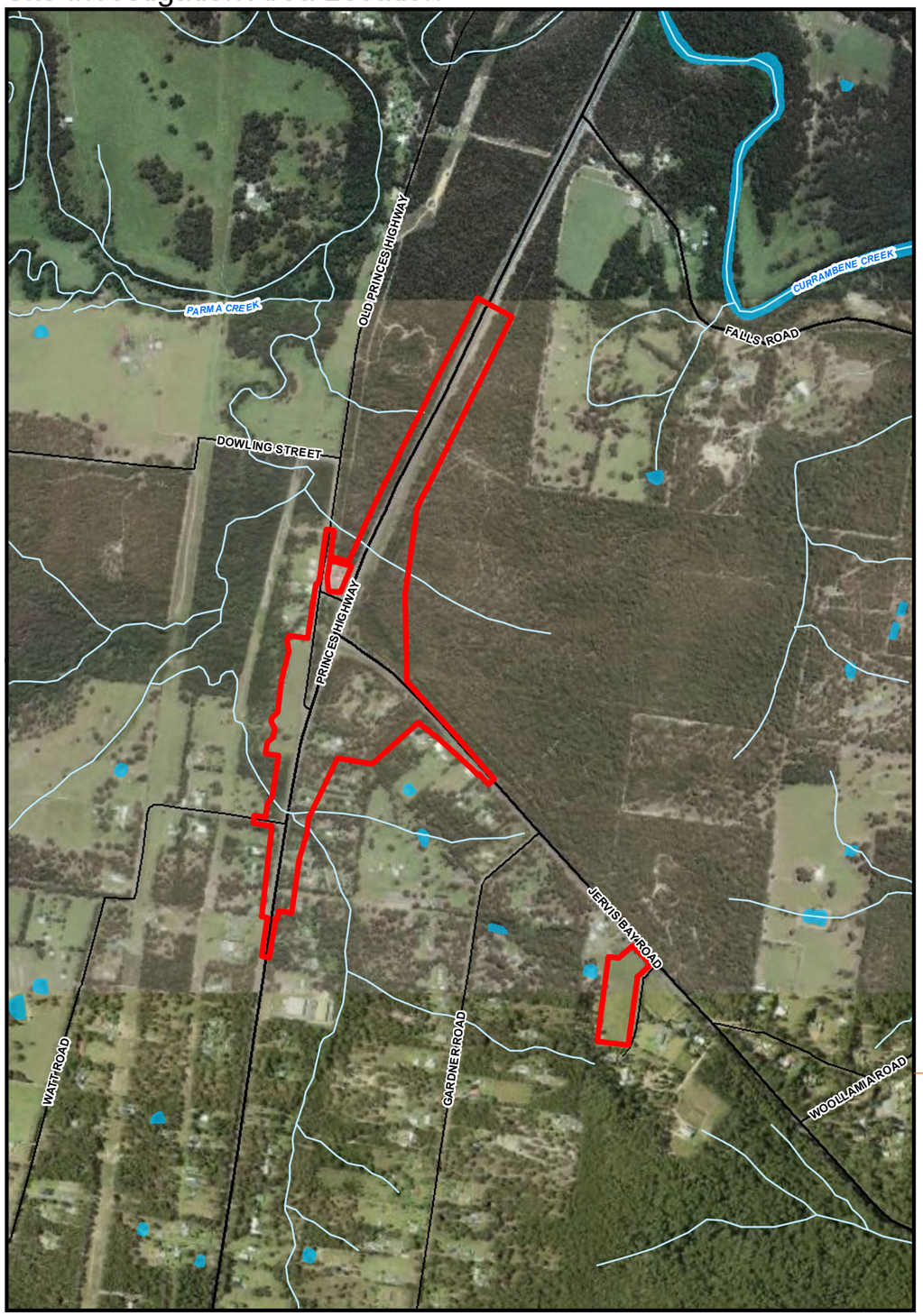
COUNTRY
Australia



REGION



Site Investigation Area Location



Proposal construction footprint
Drainage Line
Watercourse

Roads

Major roads
Local road

ARCADIS

Coordinate System:
GDA 1994 MGA Zone 56
Date issued: March 1, 2021

Figure 1: Site Location

Client: Transport for NSW
Drawn by: MA Reviewed by: RP
Date: 18/01/20 Drawing Size: A3

Drawing No: 30052473.1

ARCADIS AUSTRALIA PACIFIC PTY LTD
ABN 76 104 485 289
Level 16, 580 George Street | Sydney NSW 2000
P: +61 (0) 2 8907 9000 | F: +61 (0) 2 8907 9001

Figure 1 - Site Location

Date: 1/03/2021 Path: H:\AAP_ER_GIS\Projects\30052473 Princes Hwy Jervis Bay Road\Arcmap Files\Figure 1 - Site Locality.mxd
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

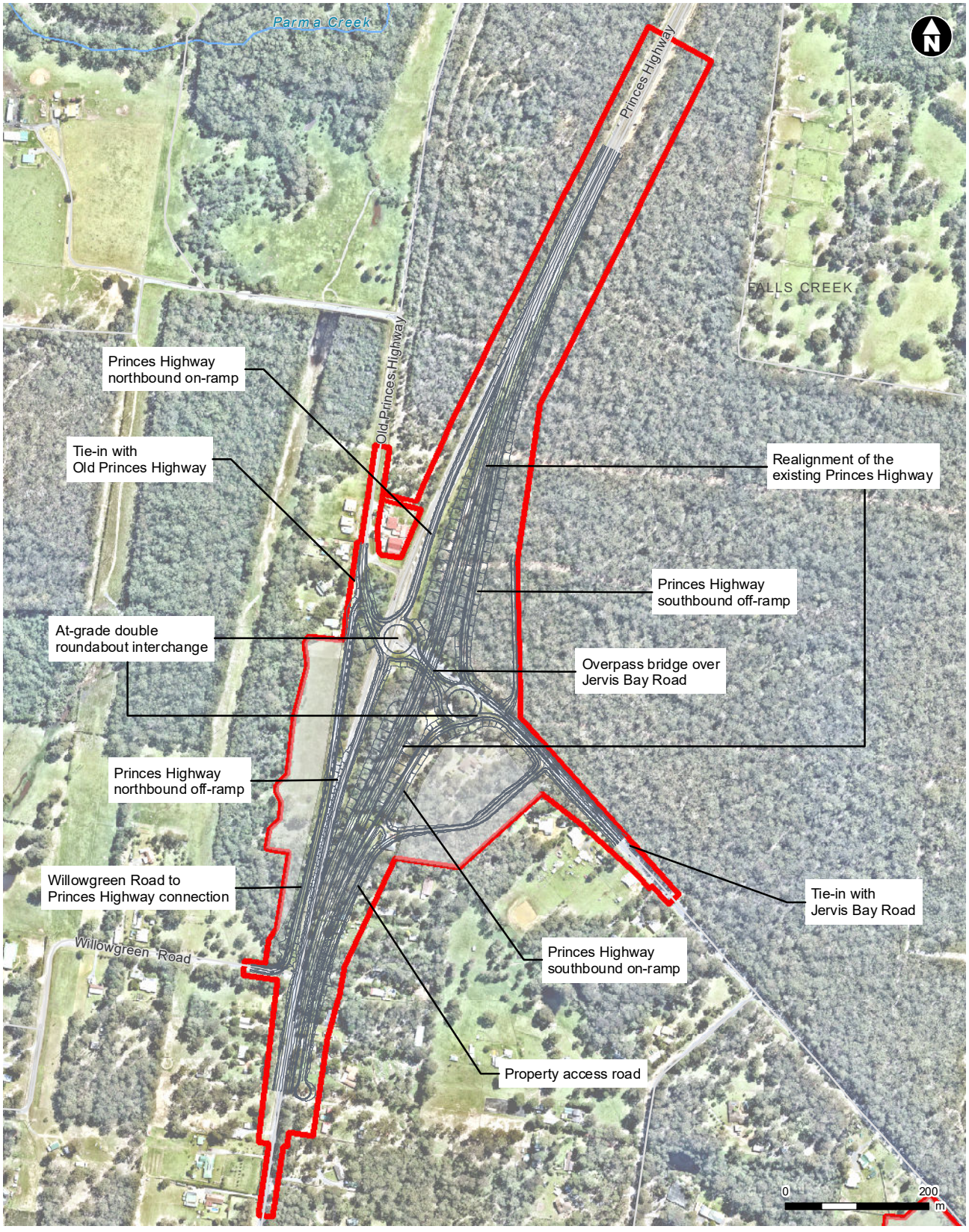


Figure 2 Key features of the proposal - operational

Date: 1/03/2021 Path: H:\AAP_ER_GIS\Projects\30052473 Princes Hwy Jervis Bay Road\Arcmap Files\Figure 2 - Key features.mxd
Created by : EM Updated by : MA QA by : RP

30052473 - Princes Hwy Jervis Bay Road PSI

Proposal construction footprint

PlanExtent

Lot

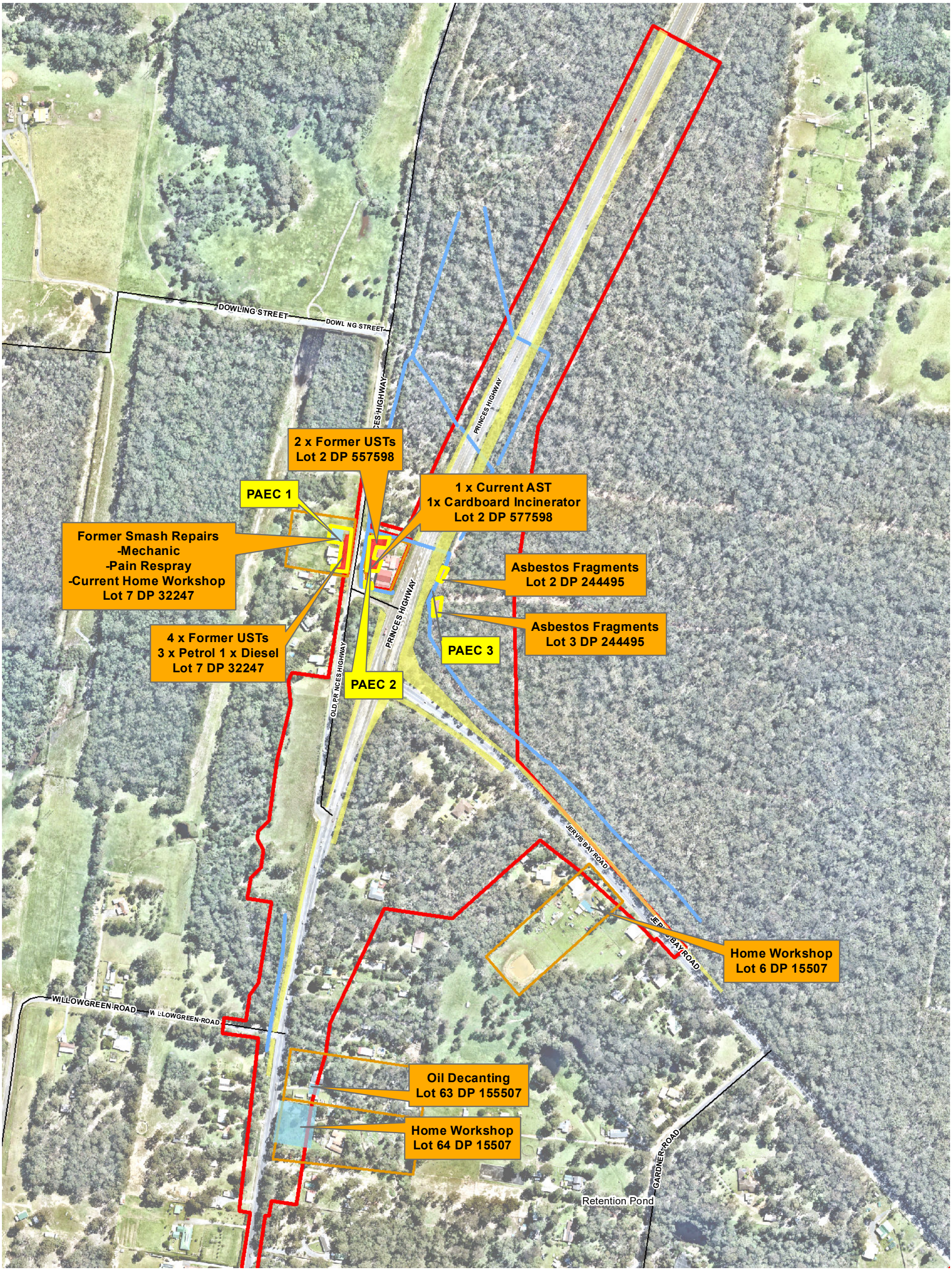
ARCADIS

Figure 3 - Site Overview

0 50 100 200 m

While Arcadis has taken care to ensure the accuracy of this product, third party data or data that has not been verified by arcadis may be used. Arcadis makes no representations or warranties about the accuracy, completemess ro suitability of this product for any particular purpose.

Date: 1/03



LEGEND

PAEC
Site Features
Drainage

Area of Potential Contamination

Asbestos Fragments
Former Petrol Station
Home Workshop / Oil Present
Incinerator (cardboard)
Road Base
Road Debris
Proposal construction footprint

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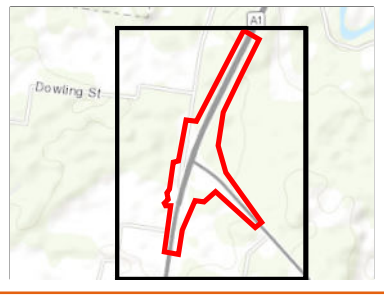

Figure 4 - Site Layout and Potential Areas of Environmental Concern

0 50 100 200 m

LEGEND

- Twin Petrol Station Layout
- Drainage
- Proposal construction footprint

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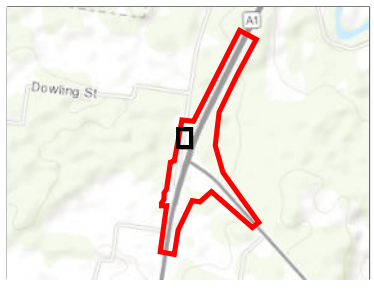


Figure 5 - Former Twin PetrolStations Layout

0 5 10 20 m

APPENDIX B FIELD DATA

Lot	38	5	6
DP	DP 244409	DP 15507	DP 15507
x	150.5887232	150.5897579	150.5904595
y	-34.98545448	-34.98559142	-34.98607683
CreationDate	20/08/2020 0:04	20/08/2020 0:17	20/08/2020 0:37
Historic Land Use	native	agricultural	agricultural
Current Land Use	public open space	residential	residential and hobby farm
Site Boundary	other properties, small fence	fence, low wire dog fence	fenced, extends a long way down
Topography	gradual to west	gradual to south	gradual south west
Hydrology	na	surface water pond in north west, erosion in back paddock	limited, infiltration is most dominant
Surface Coverings	grass and bush	grass at northern end, tree canopy with eroded soil at southern end.	grass, garden
Soil (surface)	covered	no visible staining, bare soil in southern half	in tact,not overgrazed, covered
Vegetation	90 % healthy	50%, grass and trees, healthy	20 %, healthy
Fill or Natural Soils		minor for house levelling	limited for shipping container
Services		standard power, rainwater, septic	power, on site gas bottles, septic, rainwater
PACM		minor on south side of shed, possible in house, new ish development. on road out front, see photo	likely in main dwelling,
Bulk Liquid Storage and Transfer			minor oil storage in bottles
Waste Disposal			septic, no waste management from workshop visible
Evidence of Contamination			not visible due to access, but likely under workshop, not bunded, gravel and limited hardstand. oil and grease containers present, actively working on cars, degreaser etc.
Evidence of ESA's			
Location Details	freehold land, council owned.		40 Jervis Bay road
Proximal Receptors			dam on property to south
Proximal Surrounding Land Use		bush to west, road north, paddock south, excavation company east.	
Infrastructure		house, sheds, small workshop, septic tank, horse flote	brick and weatherboard house, tin sheds, caravan, shipping container, open workshop
Other			

Lot	7	8	9
DP	DP 15507	DP 15507	DP 15507
x	150.5914898	150.591809	150.5921664
y	-34.98638097	-34.98697022	-34.98726333
CreationDate	20/08/2020 0:41	20/08/2020 0:48	20/08/2020 0:55
Historic Land Use	agricultural	agricultural	agricultural
Current Land Use	residential	residential	residential
Site Boundary	fenced	fenced	fenced
Topography	gradual southwest	gradual south	low medium southwest
Hydrology			rain splash erosion, drainage line to south east
Surface Coverings	grass	grassedin tact, grass or gravel	limited grass, dirt and leaf litter
Soil (surface)	eroded gravel patches		moderate erodability, natives
Vegetation	20%, limited trees on boundary	50%	70%
Fill or Natural Soils			
Services	bottle gas	botgle gas, water,	power to private post, transformer/box, underground wires.
PACM	walls of main building	renovated fibro house, likely limited	electrical box
Bulk Liquid Storage and Transfer			
Waste Disposal		septic	
Evidence of Contamination			
Evidence of ESA's			
Location Details	50 jervis bay road		58 jervis bay road
Proximal Receptors			
Proximal Surrounding Land Use			
Infrastructure	building with detached bathroom and shred, dwelling is fibro construction, with fibro trim. walk in fridge or freezer behind dwelling.	house, shed, granny flat	gate and power box, limited in zone. house out of zone.
Other			

Lot	2 and 3	3	2
DP	DP 244495	DP 244495	DP 244495
x	150.589967	150.5885331	150.5886106
y	-34.98417117	-34.98256598	-34.98216408
CreationDate	20/08/2020 1:18	20/08/2020 1:25	20/08/2020 1:28
Historic Land Use	native	native	native
Current Land Use	agricultral	agricultral	agricultral
Site Boundary	brand new gal fence	gal fence	gal fence
Topography	Gradient to west	Gradient to west	Gradient to west
Hydrology			
Surface Coverings	stripped soilpoor, eroding, minimal grass		
Soil (surface)			
Vegetation	5%		
Fill or Natural Soils			
Services			
PACM		asbestos sheet present, 100x150x7. other fragments in fill to north	lots of asbestos sheeting. has washed into drainage channel.
Bulk Liquid Storage and Transfer			
Waste Disposal			
Evidence of Contamination			
Evidence of ESA's			
Location Details			
Proximal Receptors			
Proximal Surrounding Land Use			
Infrastructure			
Other			

Lot	2	7
DP	DP 557598	DP 32247
x	150.5876777	150.587249
y	-34.98178195	-34.98186533
CreationDate	20/08/2020 2:27	20/08/2020 4:08
Historic Land Use	twin service stations	petrol station and workshop.
Current Land Use	Commercial	Residential, trying to attain commercial residence.
Site Boundary	fence to north and east	wire fence
Topography	gradual to north	gradual to west
Hydrology	Substantial surface water runoff, eroded and ponding. water comes from drain under highway. Hits road and goes north to flood out. bank erosion occuring on northern bank.	limited
Surface Coverings	bitumen covering. grass to east, and north.	grass and gravel
Soil (surface)	well covered,grassed, limited erosion except in drainage line.	gravel parking spots
Vegetation	limited. grass on working area and cattle area.	limited or none
Fill or Natural Soils	limited or no fill.	minor for slab levelling
Services	power, gas bottles on site,	power, former fuel pumps, ust
PACM	likely in main building walls, can not see roof.	present in structures
Bulk Liquid Storage and Transfer	two USTs. Both have been decomissioned by filling and covering. not visible. pipes ran to pumps in middle of now carpark. one currently operating AST. diesel. in in cement bund. mild odour, old infrastructure and minor leaks. liquid feed.	four usts with all infrastructure present, vents, fillers. former panel beater, so solvents, sprayetc.
Waste Disposal	no liquid waste generated. solid waste is recycled or tipped, carboard is recycled or incinerated on site in a 44 gallon drum.	none? no septic but talk of a trench out the back?
Evidence of Contamination	minimal staining around AST.	historical and ancedotal
Evidence of ESA's	none, only anacedotal with decomissioning of USTs.	none at this site.
Location Details	JB stock Feeds, Old Princes Hwy	lot 7 old princes hwy
Proximal Receptors	residential 100m west. surface water 50m north.	downgradient creek
Proximal Surrounding Land Use	east, princes highway.north, agricultural.south west residential but former smash repairs and services tation	east, ag shop, south, residential, north and west, agricultural
Infrastructure	main brick and fibro building, multible colourbond sheds to south. limited building renovations. aviery, chickens, cattle, warehouse.	panel beating shed, Fibro toilet block, fibro house, colourbond kitchen.
Other	savage weed and gentle feed. all feed comes bagged, all fertaliser comes bagged. should have documents of USTs, can contact them.	in a legal spat with BP, proceedings holted due to covid. apparently BP has a letter saying they will remove tanks. purchsed with them there...photosare seperate

APPENDIX C SITE PHOTOGRAPHS

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Project Number: 30052473

Client: Transport for NSW

Location: Falls Creek, NSW

Photo 1

Date: 20/08/2020

Spray pack in rubbish on batter of Princes Highway – previously containing blue dyed liquid, likely glyphosate.

Photo 2

Date: 20/08/2020

Bottle of kerosene on batter of Princes Highway.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

Photo 3

Date: 20/08/2020

Asbestos containing sheeting in soil, Lot 3 DP 244495.

Photo 4

Date: 6/09/2019

Asbestos sheeting in soil, Lot 2 DP 244495.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Project Number: 30052473

Client: Transport for NSW

Location: Falls Creek, NSW

Photo 5

Date: 20/08/2020

Cleared land on Lots 2-3 DP 244495

Photo 6

Date: 20/08/2020

Sediment in Princes Highway table drain – asbestos fragments in soil/sediment.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

Photo 7 **Date: 20/08/2020**

Road base in exposed batter/fill, north of Jervis Bay Road.

Photo 8 **Date: 6/09/2019**

JB Stockfeeds, 125 Old Princes Highway, Falls Creek.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

Photo 9

Date: 20/08/2020

Diesel AST and bowser, 125 Old Princes Highway.

Photo 10

Date: 6/09/2019

Location of former petrol bowsers, 125 Old Princes Highway.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

Photo 11

Date: 20/08/2020

Location of former petrol USTs, 125 Old Princes Highway.

Photo 12

Date: 20/08/2020

Chicken coup adjacent old USTs, 125 Old Princes Highway.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

Photo 13 **Date: 20/08/2020**

Former commercial workshop and smash repairs. Location of Diesel UST. 124 Old Princes Highway.

Photo 14 **Date: 20/08/2020**

Fibro house and location of petrol USTs and surface infrastructure, 124 Old Princes Highway.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

Photo 15

Date: 20/08/2020

Bowser infrastructure, 124 Old Princes Highway.

Photo 16

Date: 20/08/2020

Filling port, 124 Old Princes Highway.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

Photo 17

Date: 20/08/2020

Filling port, 124 Old Princes Highway.

Photo 18

Date: 20/08/2020

Filling ports, 124 Old Princes Highway.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

Photo 19 **Date: 20/08/2020**

Imported off-site waste oil being decanted, 953 Princes Highway.

Photo 20 **Date: 20/08/2020**

Imported off-site waste oil being decanted, 953 Princes Highway.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

Photo 21

Date: 20/08/2020

Empty allnex resin solution, 953 Princes Highway.

Photo 22

Date: 20/08/2020

Paint and empty allnex resin solution, 953 Princes Highway.

SITE PHOTOGRAPHS

Project: Princes Highway Jervis Bay Road

Client: Transport for NSW

Project Number: 30052473

Location: Falls Creek, NSW

APPENDIX D LOTSEARCH REPORT

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 28 Aug 2020 13:09:21

Reference: LS014411 EP

Address: Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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	NSW Department of Finance, Services & Innovation	24/04/2020	24/04/2020	Quarterly	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	14/08/2020	14/08/2020	Monthly	1000	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	28/08/2020	28/08/2020	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	28/08/2020	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	15/05/2020	07/03/2017	Quarterly	1000	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	12/08/2020	13/07/2012	Quarterly	1000	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	03/08/2020	07/05/2020	Monthly	2000	0	0	1
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	11/08/2020	11/08/2020	Monthly	2000	0	0	1
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	11/08/2020	11/08/2020	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	28/08/2020	28/08/2020	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	17/08/2020	17/08/2020	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	04/02/2020	13/12/2018	Annually	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	17/08/2020	17/08/2020	Monthly	1000	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	17/08/2020	17/08/2020	Monthly	1000	0	0	1
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	17/08/2020	17/08/2020	Monthly	1000	3	3	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150	-	1	1
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	0	0
Points of Interest	NSW Department of Finance, Services & Innovation	30/03/2020	30/03/2020	Quarterly	1000	1	1	7
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	30/03/2020	30/03/2020	Quarterly	1000	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	30/03/2020	30/03/2020	Quarterly	1000	0	0	0
Major Easements	NSW Department of Finance, Services & Innovation	30/03/2020	30/03/2020	Quarterly	1000	0	1	6
State Forest	Forestry Corporation of NSW	18/01/2018	18/01/2018	As required	1000	0	0	1
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	21/01/2020	30/09/2019	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
Botany Groundwater Management Zones	NSW Department of Planning, Industry and Environment	15/03/2018	01/10/2005	As required	1000	0	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
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	0	0	8
Geological Units 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	2	-	4
Geological Structures 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	0	-	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000	1	1	1
Soil Landscapes	NSW Department of Planning, Industry and Environment	12/08/2014		None planned	1000	3	-	5
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	13/08/2020	01/05/2020	Monthly	500	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	3
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	0	0	0
Dryland Salinity Potential of Western Sydney	NSW Department of Planning, Industry and Environment	12/05/2017	01/01/2002	None planned	1000	-	-	-
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	30/03/2020	30/03/2020	Quarterly	1000	0	0	0
Current Mining Titles	NSW Department of Industry	29/07/2020	29/07/2020	Monthly	1000	0	0	0
Mining Title Applications	NSW Department of Industry	29/07/2020	29/07/2020	Monthly	1000	0	0	0
Historic Mining Titles	NSW Department of Industry	29/07/2020	29/07/2020	Monthly	1000	8	9	9
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	13/08/2020	07/12/2018	Monthly	1000	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	13/08/2020	07/08/2020	Monthly	1000	3	4	10
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/08/2020	20/11/2019	Quarterly	1000	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/08/2020	20/11/2019	Quarterly	1000	1	1	1
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	24/07/2020	02/07/2020	Quarterly	1000	0	0	0
Environmental Planning Instrument Heritage	NSW Department of Planning, Industry and Environment	13/08/2020	07/08/2020	Monthly	1000	0	0	1
Bush Fire Prone Land	NSW Rural Fire Service	14/08/2020	14/12/2019	Quarterly	1000	3	3	3
Vegetation of Southern Forests	NSW Office of Environment & Heritage	09/12/2014	10/10/2011	Unknown	1000	2	4	16
Ramsar Wetlands of Australia	Department of the Agriculture, Water and the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	3	3	4
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	8	9	10
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	26/08/2020	26/08/2020	Weekly	10000	-	-	-

Site Diagram

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 367218m²

Total Perimeter: 4511m

Scale: 0 25 50 100 150 200 250 Meters

Data Sources: Aerial Imagery © NSW Department of Finance, Services & Innovation

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 August 2020

Contaminated Land

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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

Contaminated Land

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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

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

Waste Management & Liquid Fuel Facilities

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

National Waste Management Site Database

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

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist (m)	Direction
N/A	No records in buffer											

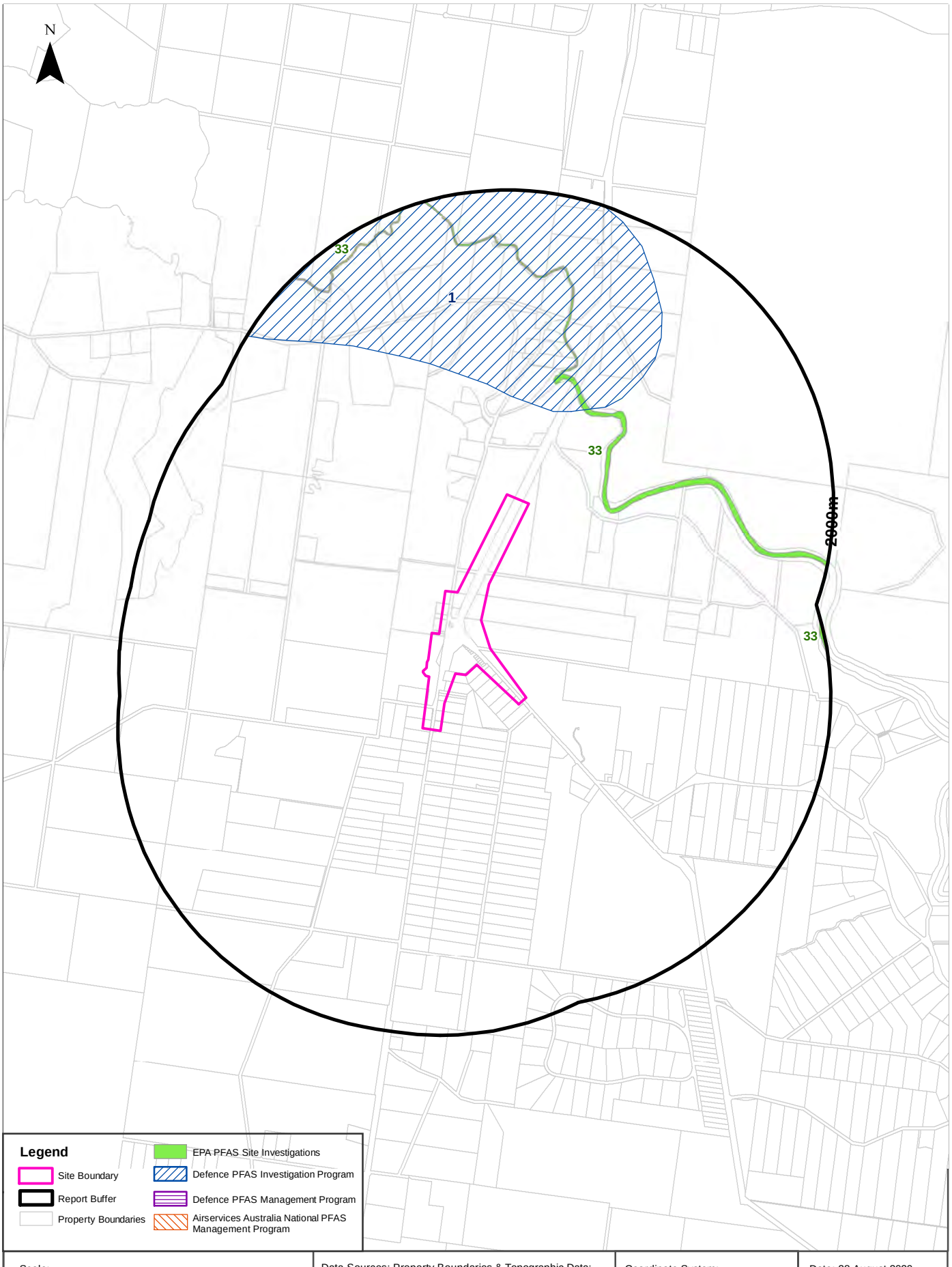
National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist (m)	Direction
N/A	No records in buffer										

PFAS Investigation & Management Programs

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



PFAS Investigation & Management Programs

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

EPA PFAS Investigation Program

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

Id	Site	Address	Loc Conf	Dist	Dir
33	Currambene Creek	Currambene Creek	Network of Features	481m	South East

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
1	HMAS Albatross	Nowra, New South Wales	Premise Match	616m	North West

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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
- Pasminco Lead Abatement Strategy Area

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

EPA Activities

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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
N/A	No records in buffer							

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

EPA Activities

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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
4022	FORESTRY CORPORATION OF NEW SOUTH WALES		WITHIN THE SOUTHERN REGION DEPICTED ON FIGURE 3		Logging operations	Network of Features	916m	North East

Delicensed Activities Data Source: Environment Protection Authority

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

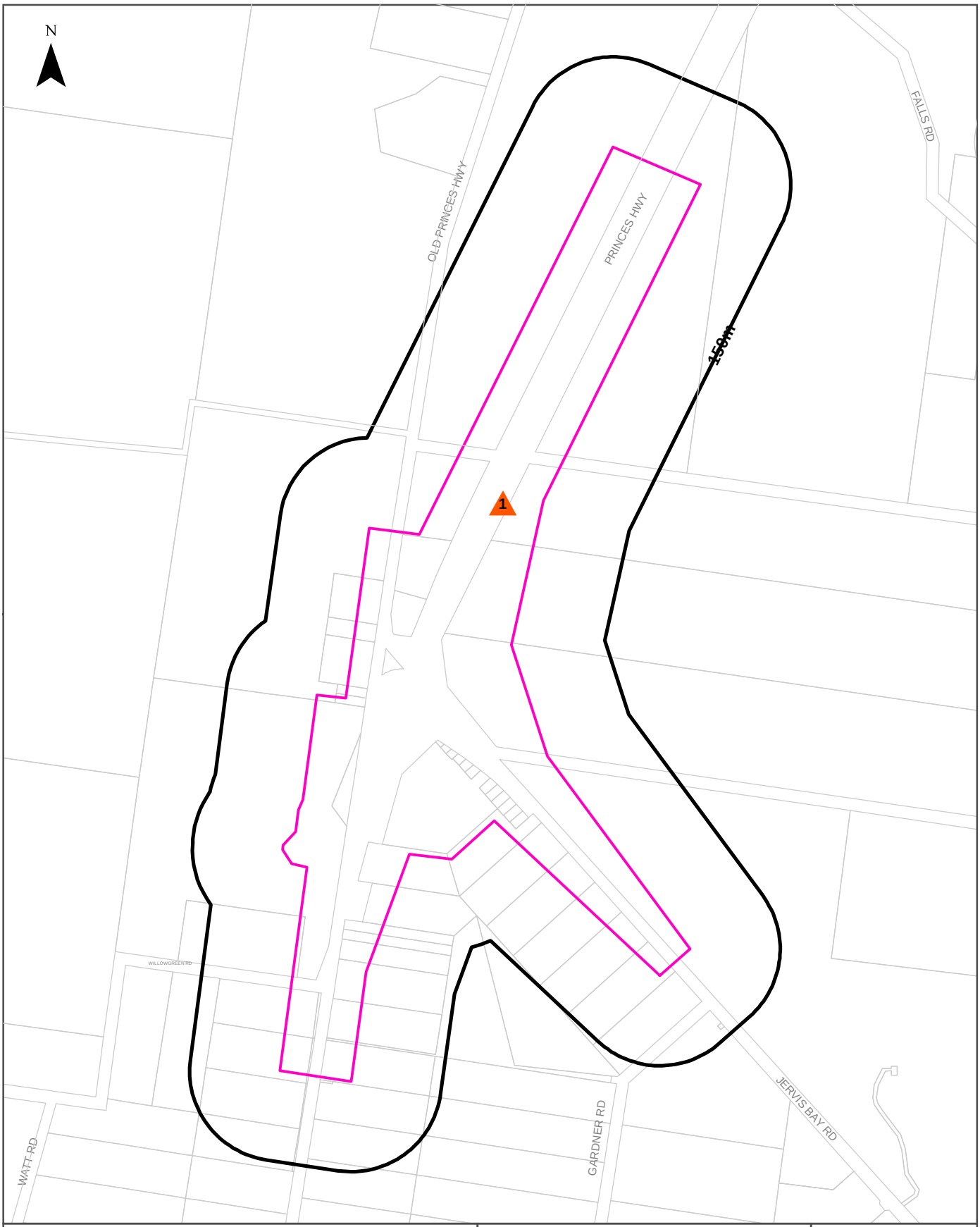
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	Onsite
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	Onsite
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	Onsite

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Legend

- Site Boundary
- Buffer 150m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 120 240 360 480 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 August 2020

Historical Business Directories

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer						

Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, 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:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
1	GROCERS & GENERAL STOREKEEPERS	Norris, E. W. (also Petrol Sales and Insurance Agent), Princes Highway., Fall's Creek	201334	1961	Road Match	0m

Historical Business Directories

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer						

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.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
	No records in buffer					

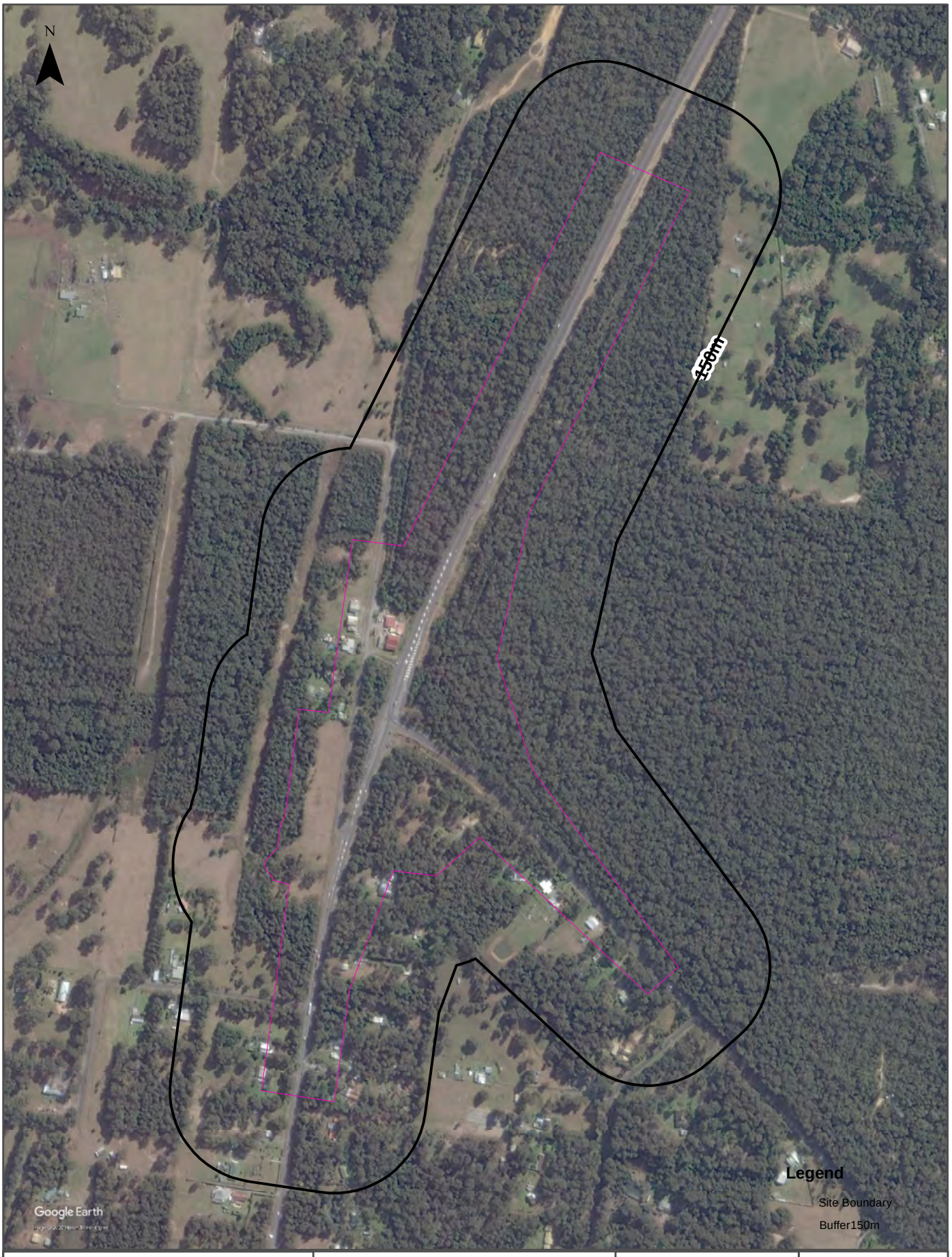
Aerial Imagery 2019

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Scale: 0 100 200 300 400 Meters	Data Source Aerial Imagery: © Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community	Coordinate System: GDA 1994 MGA Zone 56	Date: 26 August 2020

Aerial Imagery 2015

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Scale: 0 100 200 Meters 300 400	Data Source Aerial Imagery: © 2020 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 26 August 2020

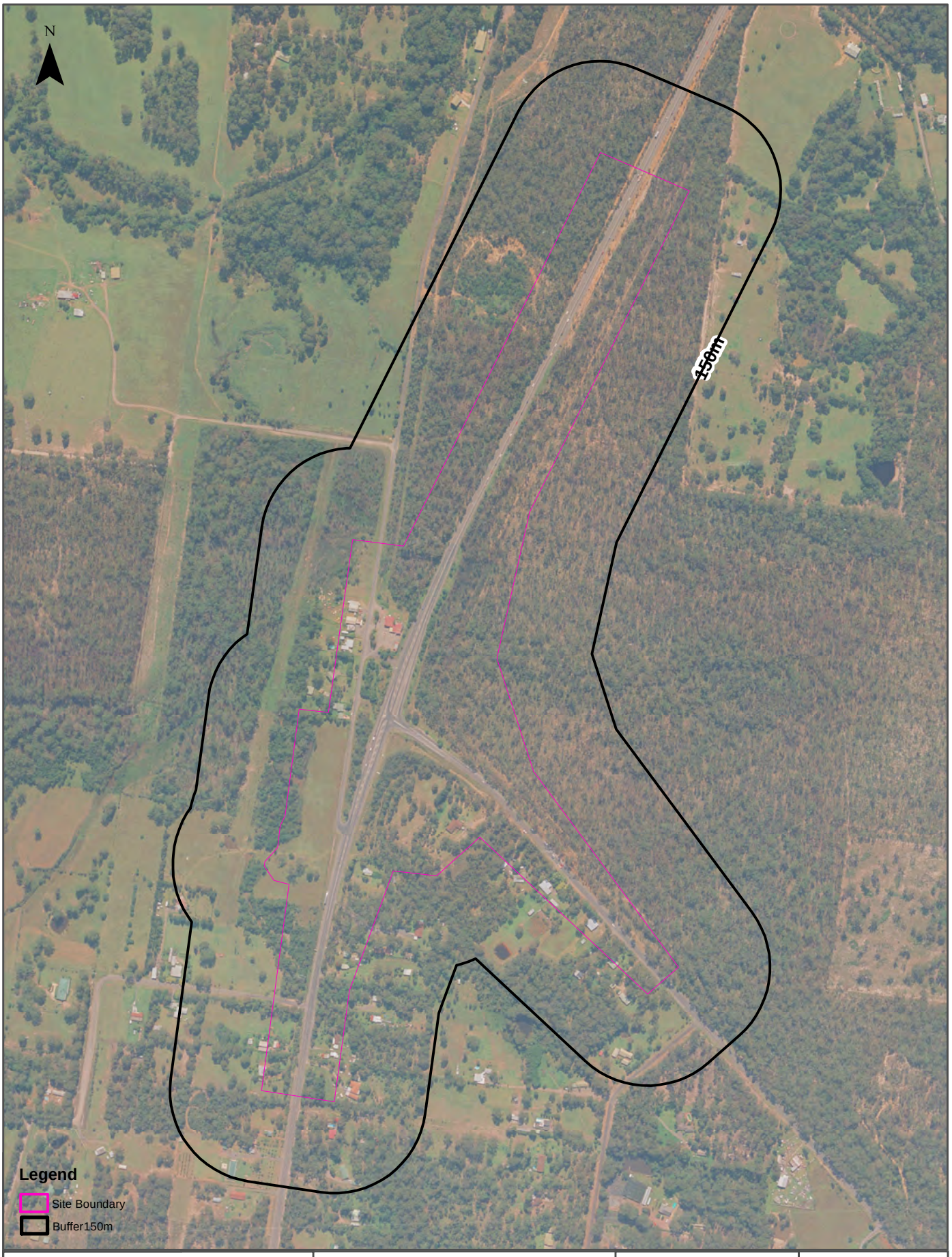
Aerial Imagery 2009

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Scale: 0 100 200 Meters 300 400	Data Source Aerial Imagery: © 2020 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 26 August 2020

Aerial Imagery 2002

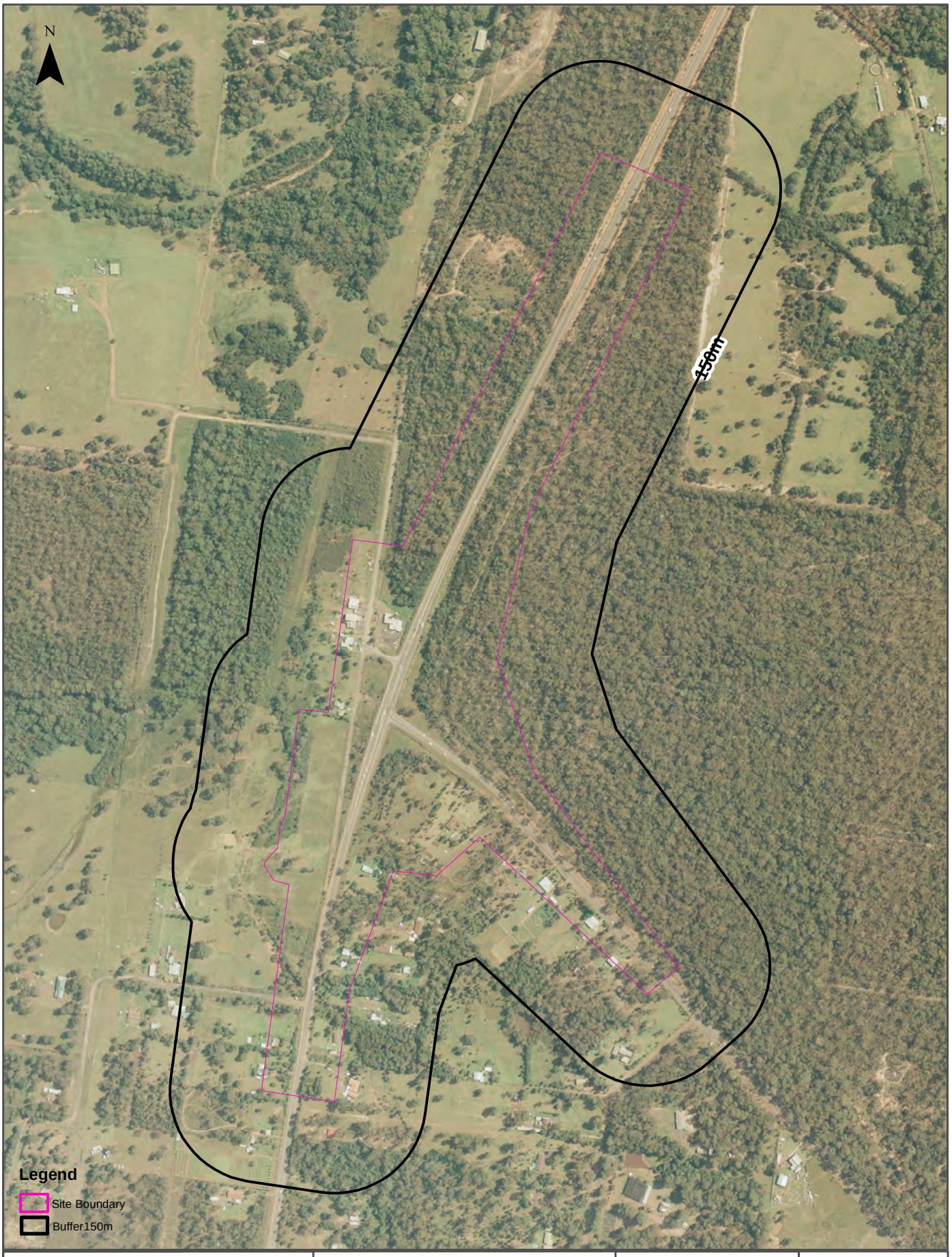
Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 01 September 2020
0 100 200 300 400 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

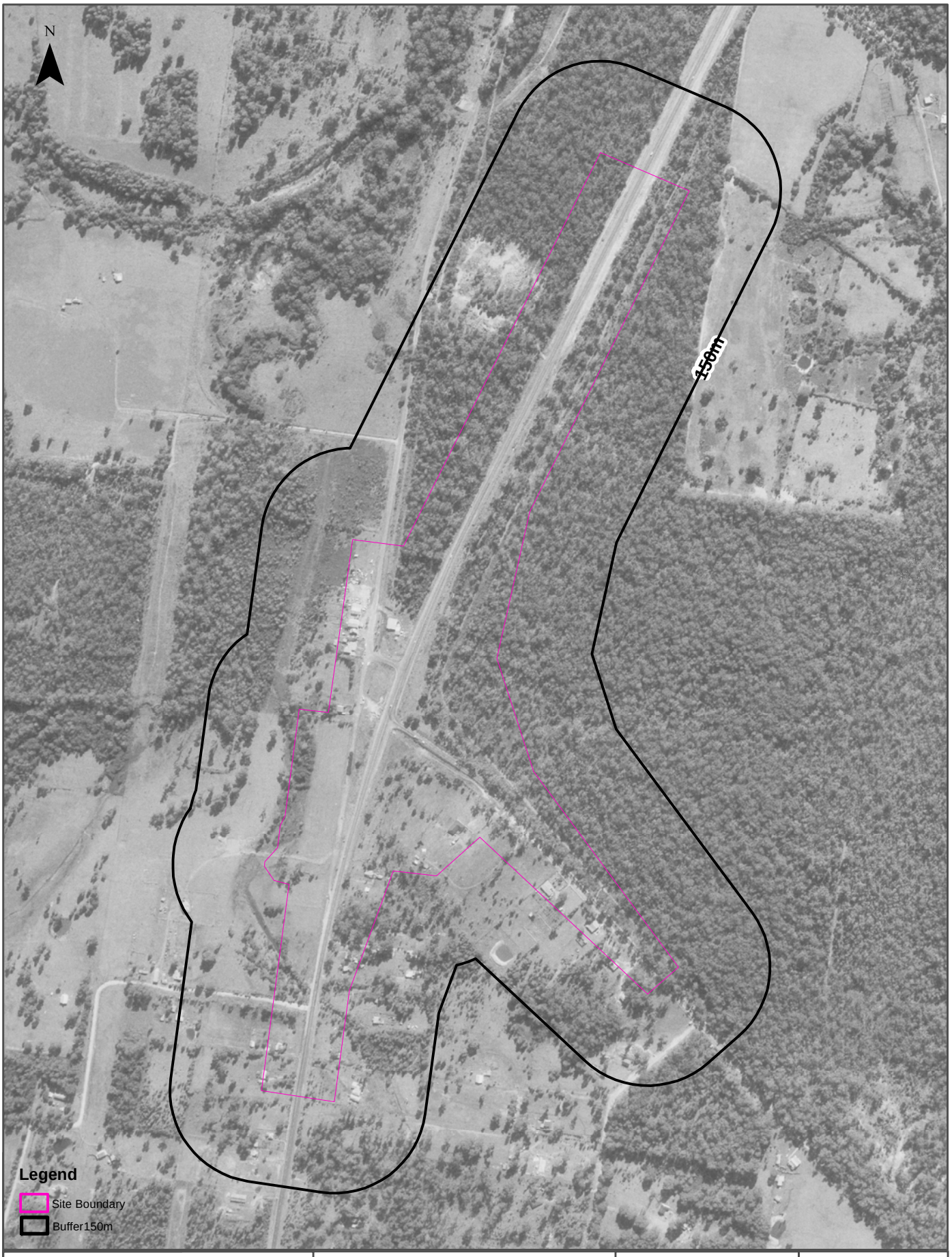
Aerial Imagery 1993

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



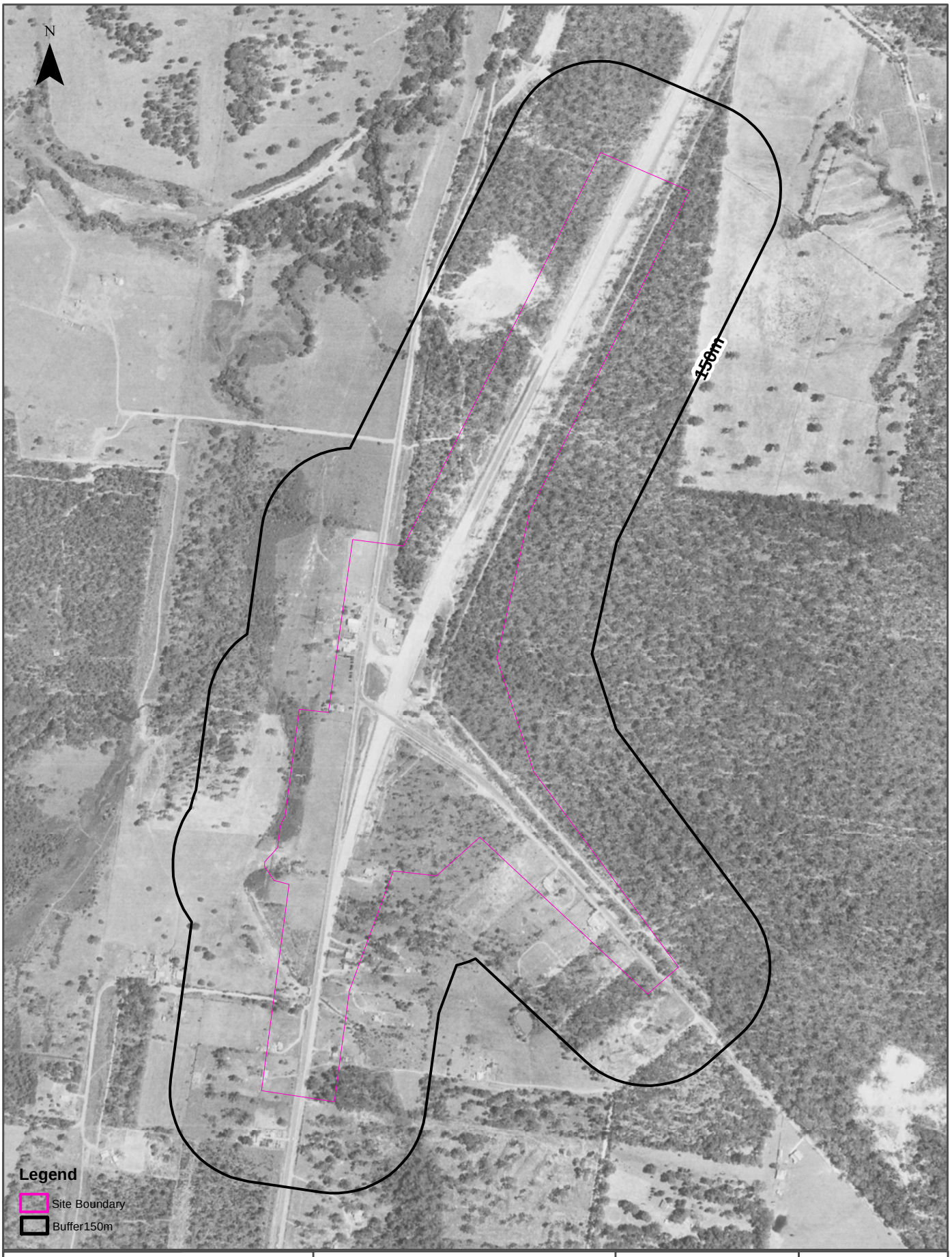
Aerial Imagery 1984

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



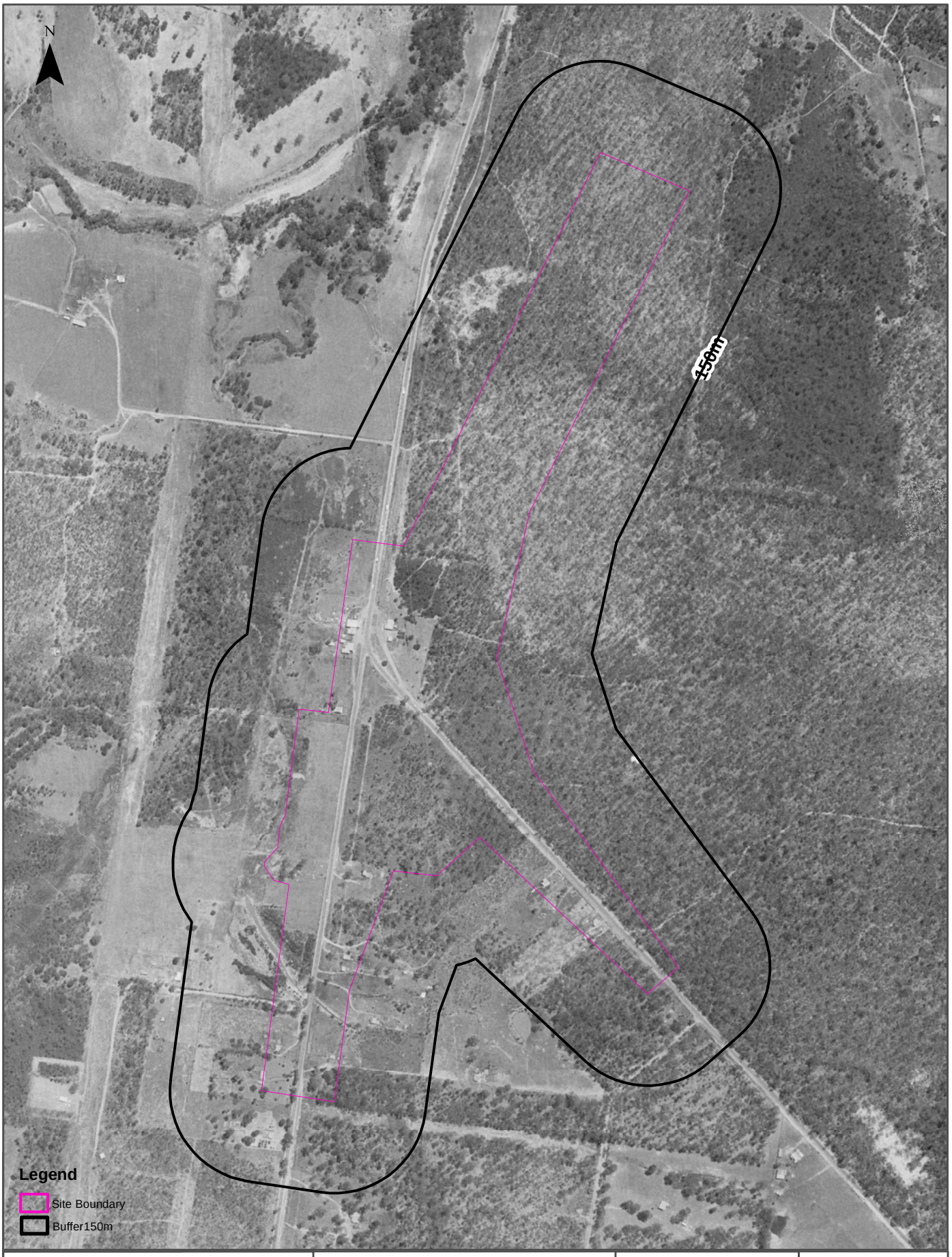
Aerial Imagery 1974

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Aerial Imagery 1969

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

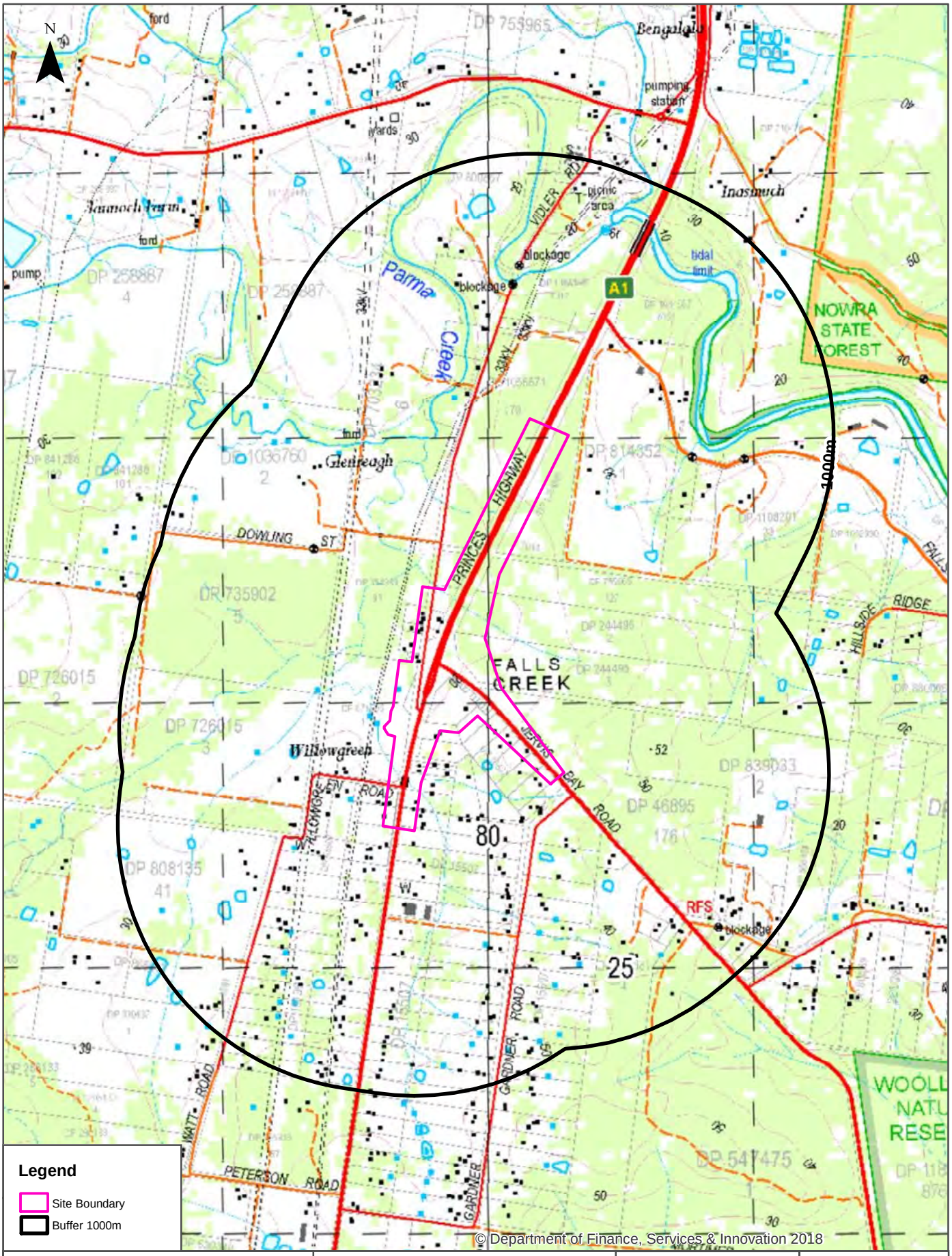


Aerial Imagery 1949

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

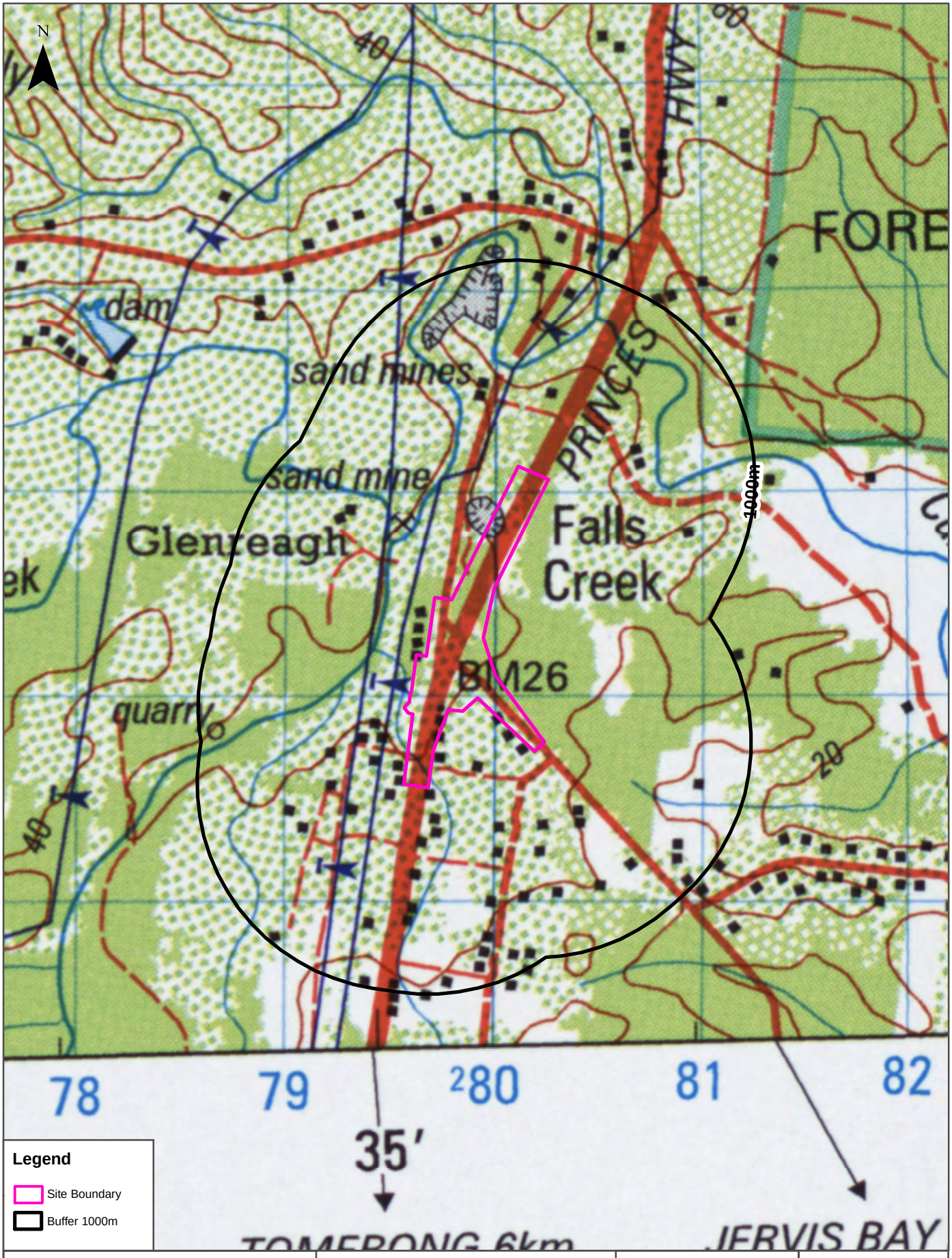
Topographic Map 2015

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



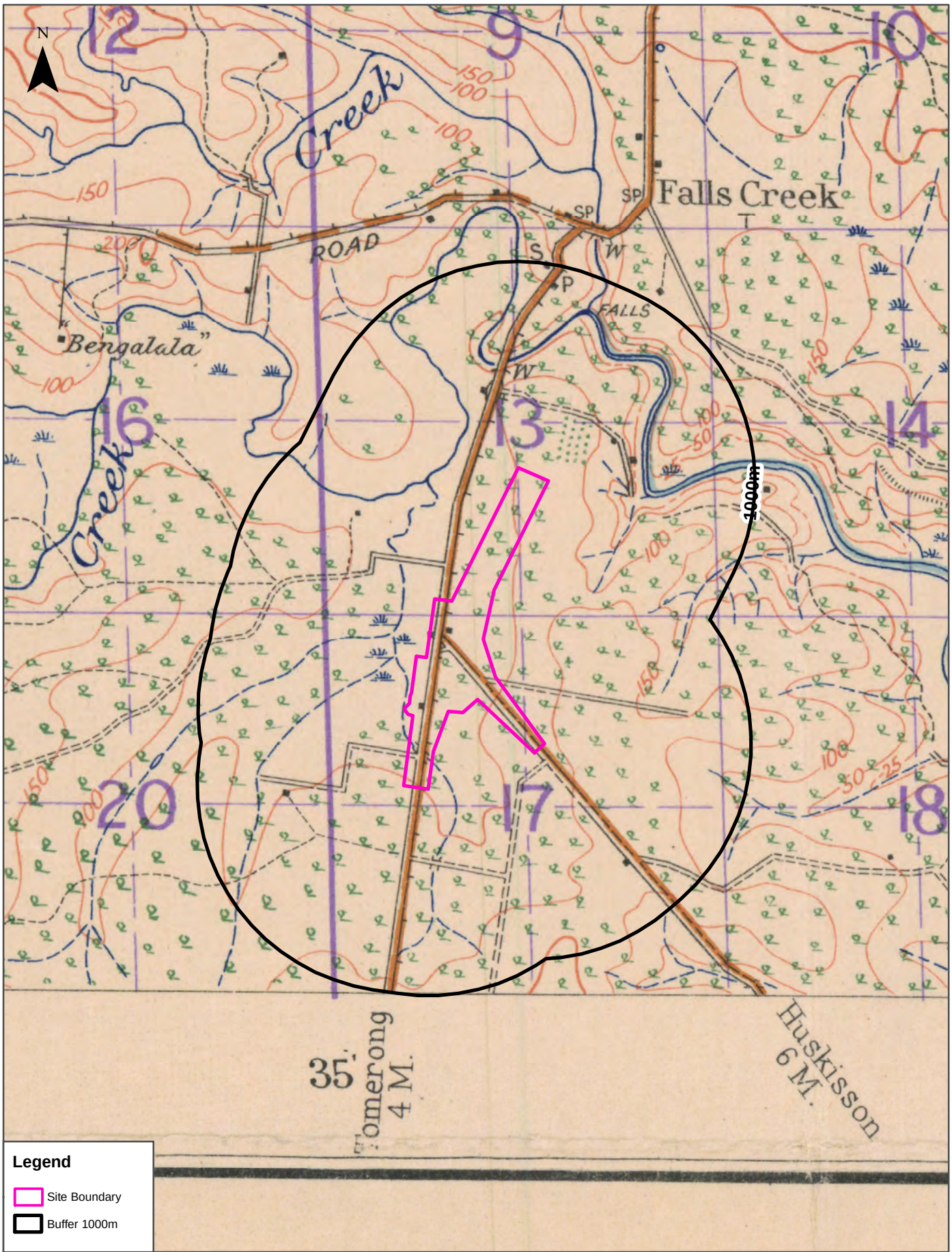
Historical Map 1998

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



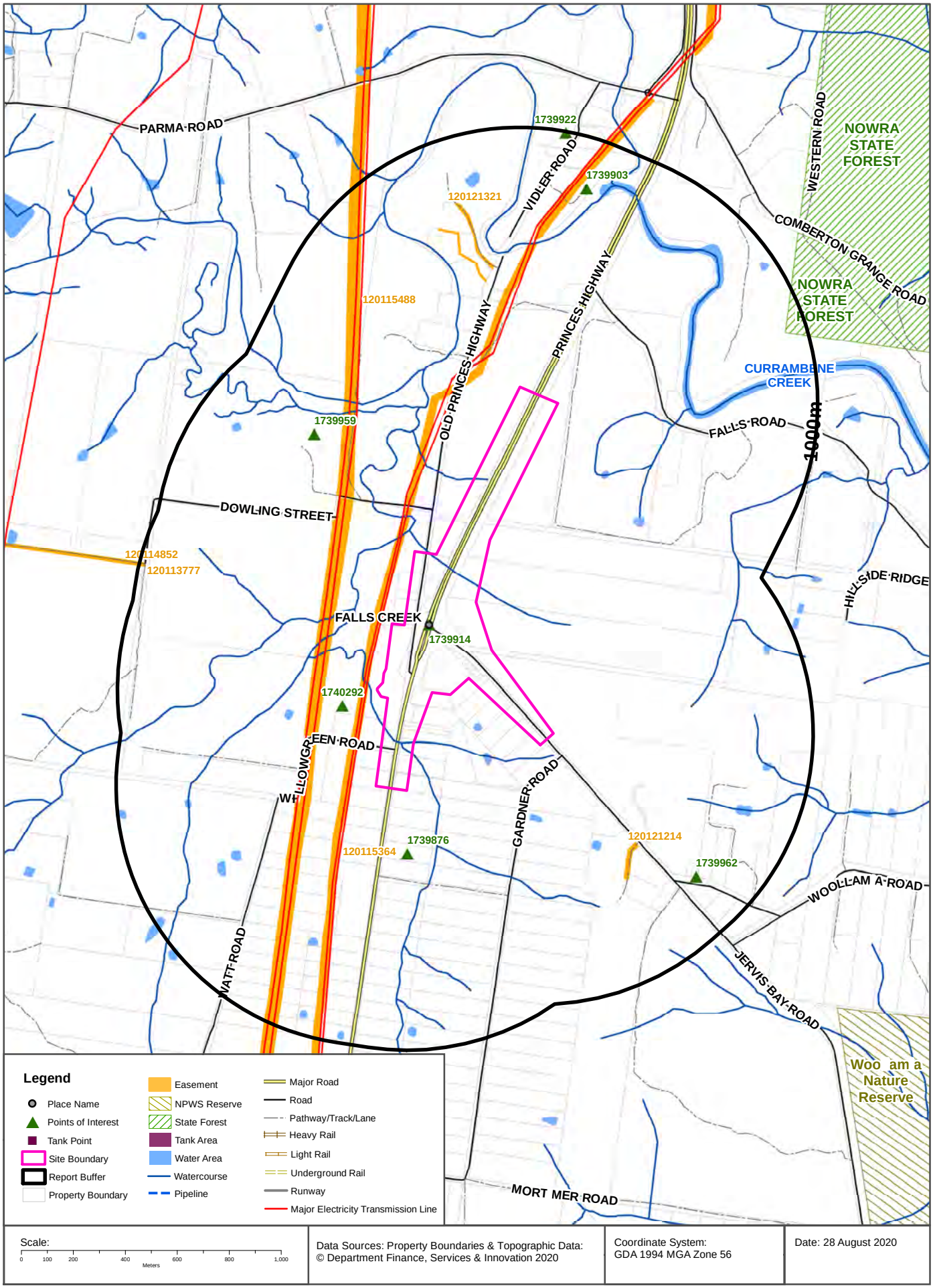
Historical Map c.1929

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Topographic Features

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Topographic Features

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
1739914	Locality	FALLS CREEK	0m	Onsite
1740292	Homestead	WILLOWGREEN	146m	South West
1739876	Place Of Worship	CHURCH OF CHRIST	244m	South
1739959	Homestead	GLENREAGH	594m	North West
1739962	Firestation - Bush	FALLS CREEK RFB	779m	South East
1739903	Picnic Area	FALLS CREEK PICNIC AREA	804m	North
1739922	Primary School	FALLS CREEK PUBLIC SCHOOL	993m	North

Topographic Features

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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					

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
120115364	Primary	Undefined		38m	South West
120115488	Primary	Undefined		203m	South West
120121321	Primary	Undefined		429m	North
120121214	Primary	Undefined		527m	South East
120113777	Primary	Undefined		981m	West
120114852	Primary	Undefined		981m	West

Topographic Features

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
423	NOWRA	916m	North East

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				

Elevation Contours (m AHD)

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Hydrogeology & Groundwater

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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)

Botany Groundwater Management Zones

Groundwater management zones relating to the Botany Sand Beds aquifer within the dataset buffer:

Management Zone No.	Restriction	Distance	Direction
N/A	No records in buffer		

Botany Groundwater Management Zones Data Source : NSW Department of Primary Industries

Groundwater Boreholes

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Hydrogeology & Groundwater

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW072145	10BL153672	Bore	Private	Domestic, Stock	Domestic, Stock		18/12/1993	24.00	24.00	Good	2.00	0.040		446m	North East
GW005339	10BL007129	Bore open thru rock	Private	Domestic, Stock	General Use		01/03/1957	58.20	58.20	Fair				644m	South East
GW072361	10BL156004	Bore	Private	Domestic, Stock	Domestic, Stock		10/09/1996		30.00					723m	South
GW072988	10BL156197	Bore	Private	Domestic	Domestic		31/10/1994	30.00	30.00					916m	South
216003					UNK								4.68	1298m	North
216004					UNK								39.53	1374m	North East
GW069180		Bore open thru rock	Private		Domestic, Stock		06/03/1991	66.70	66.70	S.Salty				1615m	South
GW104109	10BL160296	Bore		Domestic, Stock	Domestic, Stock		30/11/2001	120.00	120.00	1600				1781m	East

Hydrogeology & Groundwater

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Driller's Logs

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

Groundwater No	Drillers Log	Distance	Direction
GW072145	0.00m-2.00m SAND & SOIL 2.00m-3.00m GRAVEL 3.00m-24.00m SANDSTONE & SHALE	446m	North East
GW005339	0.00m-0.91m Soil 0.91m-2.13m Clay 2.13m-16.15m Sandstone Nominal Bands Water Supply 16.15m-24.38m Sandstone Yellow Nominal 24.38m-58.21m Shale Nominal Water Supply 24.38m-58.21m Sandstone Grey Nominal	644m	South East
GW072361	0.00m-1.00m SOIL & CLAY 1.00m-4.00m SHALE 4.00m-9.00m SANDSTONE 9.00m-15.00m SAND 15.00m-30.00m SANDSTONE (GREY)	723m	South
GW072988	0.00m-0.20m SOIL 0.20m-3.00m GREY SANDSTONE SOFT 3.00m-30.00m GREY SANDSTONE	916m	South
GW069180	0.00m-1.00m Soil And Clay	1615m	South
GW104109	0.00m-5.00m CLAY 5.00m-120.00m SILTSTONE/SHALE	1781m	East

Geology 1:250,000

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Geology

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Psn	Quartzose sandstone, minor siltstone plus conglomerate beds	Nowra Sandstone	Shoalhaven Group		Palaeozoic			1:250,000
Qal	Alluvium, gravel, sand silt and clay	undifferentiated			Cainozoic			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
Psb	Bluish grey to light grey siltstone, shaly in part with bands of silty sandstone	Berry Siltstone	Shoalhaven Group		Palaeozoic			1:250,000
Psn	Quartzose sandstone, minor siltstone plus conglomerate beds	Nowra Sandstone	Shoalhaven Group		Palaeozoic			1:250,000
Psw	Mid grey to blue grey, fine grained quartz lithic silty sandstone and siltstone	Wandrawandian Siltstone	Shoalhaven Group		Palaeozoic			1:250,000
Qal	Alluvium, gravel, sand silt and clay	undifferentiated			Cainozoic			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

Naturally Occurring Asbestos Potential

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

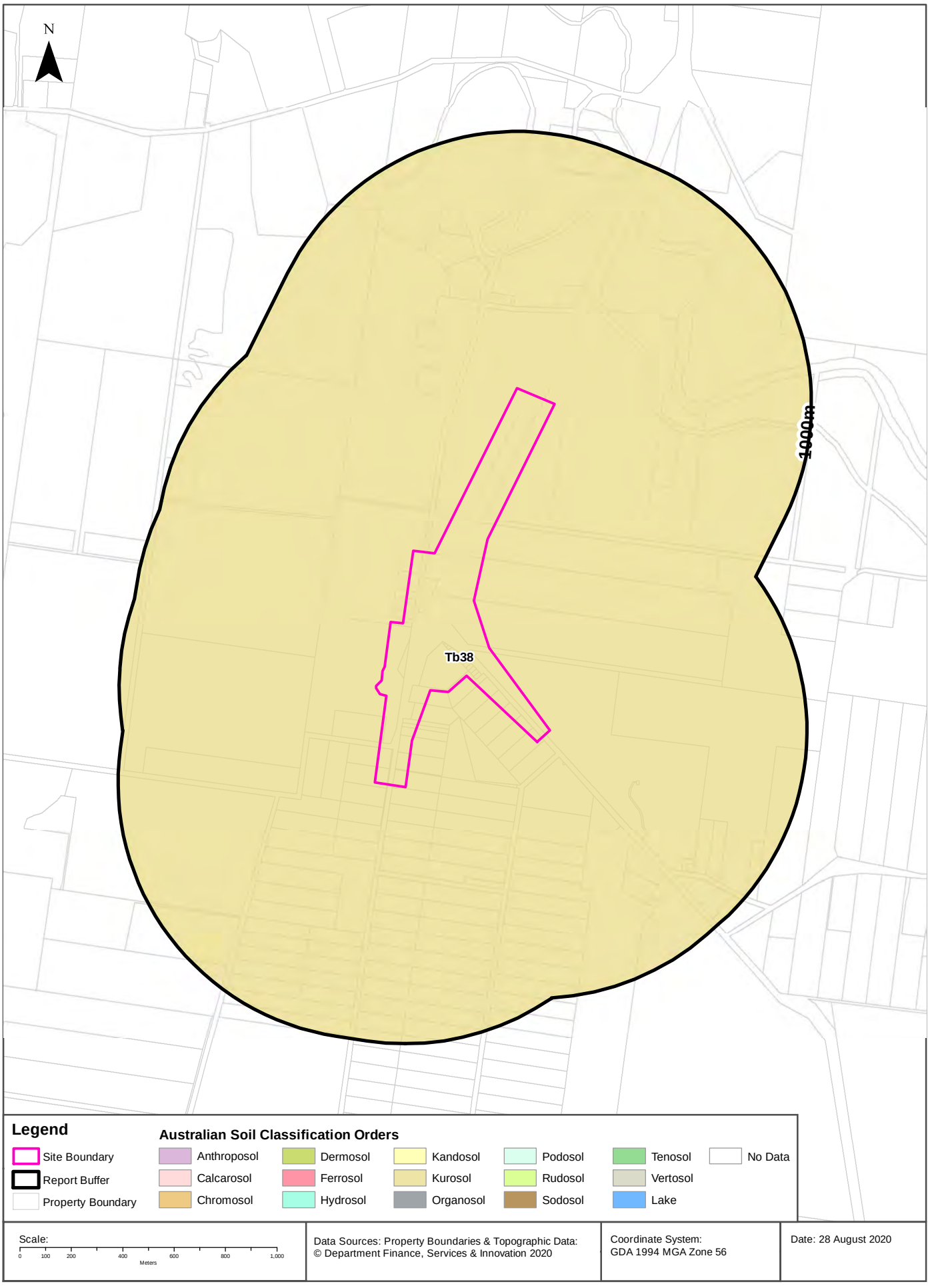
Naturally Occurring Asbestos Potential

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												

Atlas of Australian Soils

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Soils

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

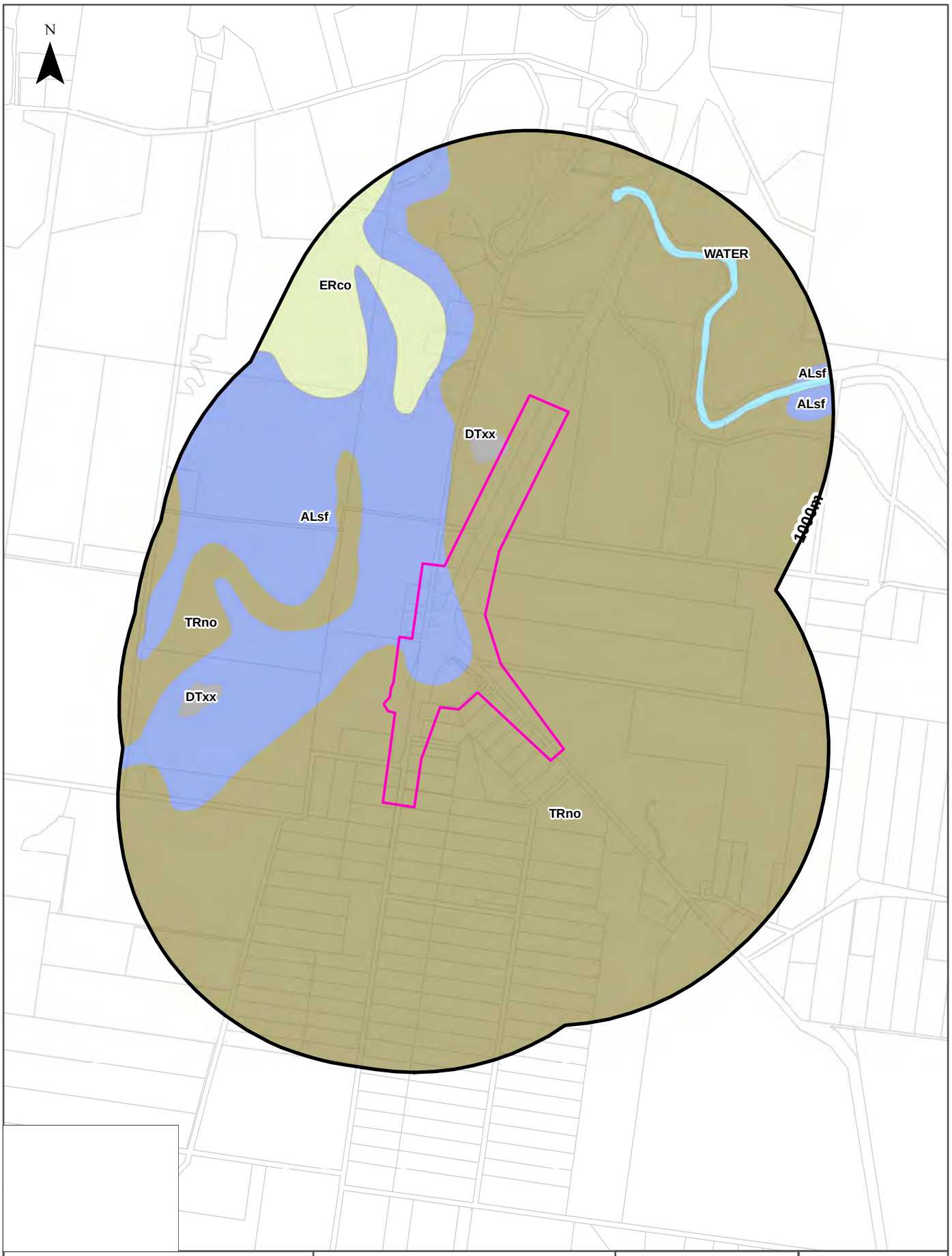
Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance
Tb38	Kurosol	Flat to undulating: chief soils are hard acidic yellow and yellow mottled soils (Dy2.41) and (Dy3.41) sometimes containing ironstone gravel. Associated are hard acidic red soils (Dr2.21, Dr2.41), and small areas of other soils, including (Gn2) and (Gn3.54).	0m

Soil Landscapes

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Soils

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Soil Landscapes

What are the onsite Soil Landscapes?

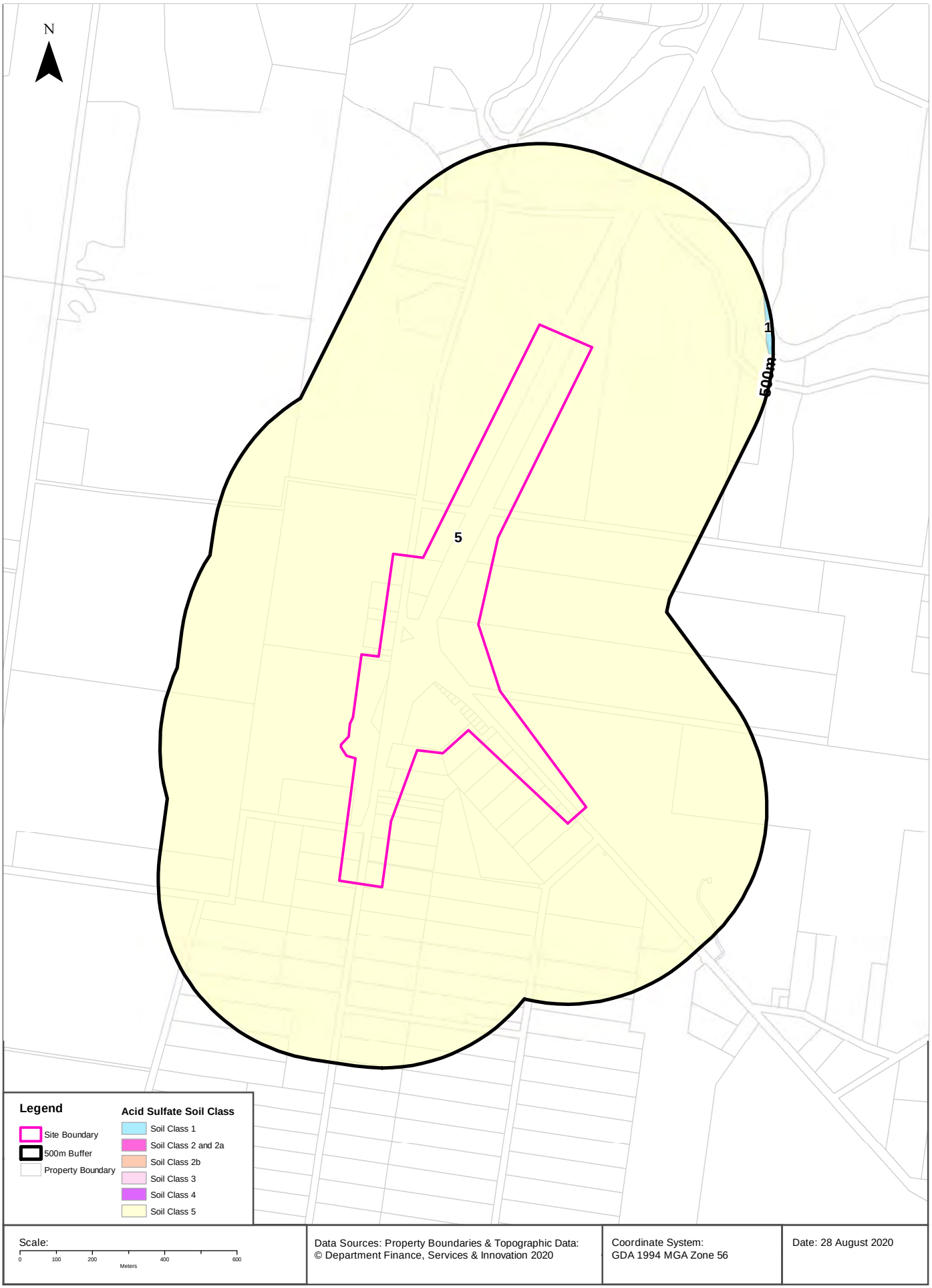
Soil Code	Name	Group	Process	Map Sheet	Scale
ALsf	SHOALHAVEN		ALLUVIAL	Kiama	1:100,000
DTxx	DISTURBED TERRAIN		DISTURBED TERRAIN	Kiama	1:100,000
TRno	NOWRA		TRANSFERRAL	Kiama	1:100,000

What are the Soil Landscapes within the dataset buffer?

Soil Code	Name	Group	Process	Map Sheet	Scale
ALsf	SHOALHAVEN		ALLUVIAL	Kiama	1:100,000
DTxx	DISTURBED TERRAIN		DISTURBED TERRAIN	Kiama	1:100,000
ERco	COOLONGATTA		EROSIONAL	Kiama	1:100,000
TRno	NOWRA		TRANSFERRAL	Kiama	1:100,000
WATER	WATER		WATER	Kiama	1:100,000

Acid Sulfate Soils

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Acid Sulfate Soils

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Environmental Planning Instrument - Acid Sulfate Soils

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

Soil Class	Description	EPI Name
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk	Shoalhaven Local Environmental Plan 2014

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

Soil Class	Description	EPI Name	Distance	Direction
1	Any works present an environmental risk	Shoalhaven Local Environmental Plan 2014	480m	North East

Atlas of Australian Acid Sulfate Soils

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Legend

- Site Boundary
- Report Buffer
- Property Boundary

Probability of occurrence of Acid Sulfate Soils

- A. High (>70%)
- B. Low (6-70%)
- C. Extremely Low (1-5%)
- D. No Chance (0%)
- No Data

Scale: 0 100 200 400 600 800 1,000 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2020

Coordinate System: GDA 1994 MGA Zone 56

Date: 28August 2020

Acid Sulfate Soils

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m
A	High Probability of occurrence. >70% chance of occurrence.	480m
B	Low Probability of occurrence. 6-70% chance of occurrence.	835m

Dryland Salinity

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A	N/A	N/A

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

Mining

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

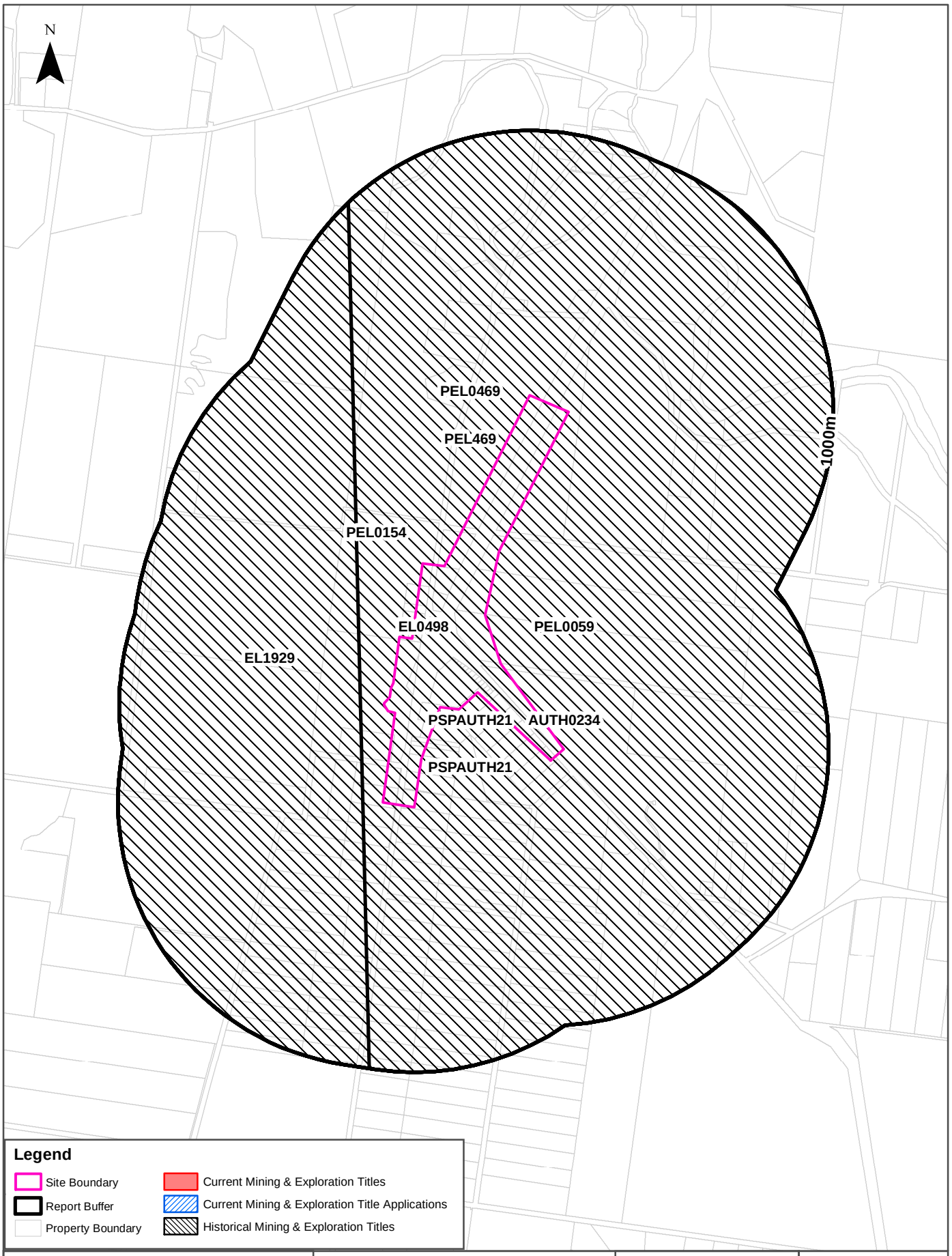
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

Mining & Exploration Titles

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Mining

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist (m)	Dir'
N/A	No Records in Buffer								

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist (m)	Dir'
N/A	No Records in Buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist (m)	Dir'
AUTH0234	ELECTRICITY COMMISSION OF NSW	07 May 1981	07 May 1983	COAL	Coal	0m	Onsite
EL0498	DOWNES, C	01 Feb 1972	01 Oct 1976	MINERALS	Brick clay	0m	Onsite
PEL0059	L H SMART OIL EXPLORATION CO. LTD			PETROLEUM	Petroleum	0m	Onsite
PEL0154	GENOA OIL NL, HARTOG OIL NL			PETROLEUM	Petroleum	0m	Onsite
PEL0469	LEICHHARDT RESOURCES PTY LTD	30/04/2009	13/10/2014	PETROLEUM	Petroleum	0m	Onsite
PEL469	LEICHHARDT RESOURCES PTY LTD			MINERALS		0m	Onsite
PSPAUTH21	LEICHHARDT RESOURCES PTY LTD			MINERALS		0m	Onsite
PSPAUTH21	LEICHHARDT RESOURCES PTY LTD	18/02/2008	18/02/2009	PETROLEUM	Petroleum	0m	Onsite
EL1929	GOLD FIELDS EXPLORATION PTY LIMITED	01 Sep 1982	01 Feb 1985	MINERALS	Au	76m	West

State Environmental Planning Policy

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

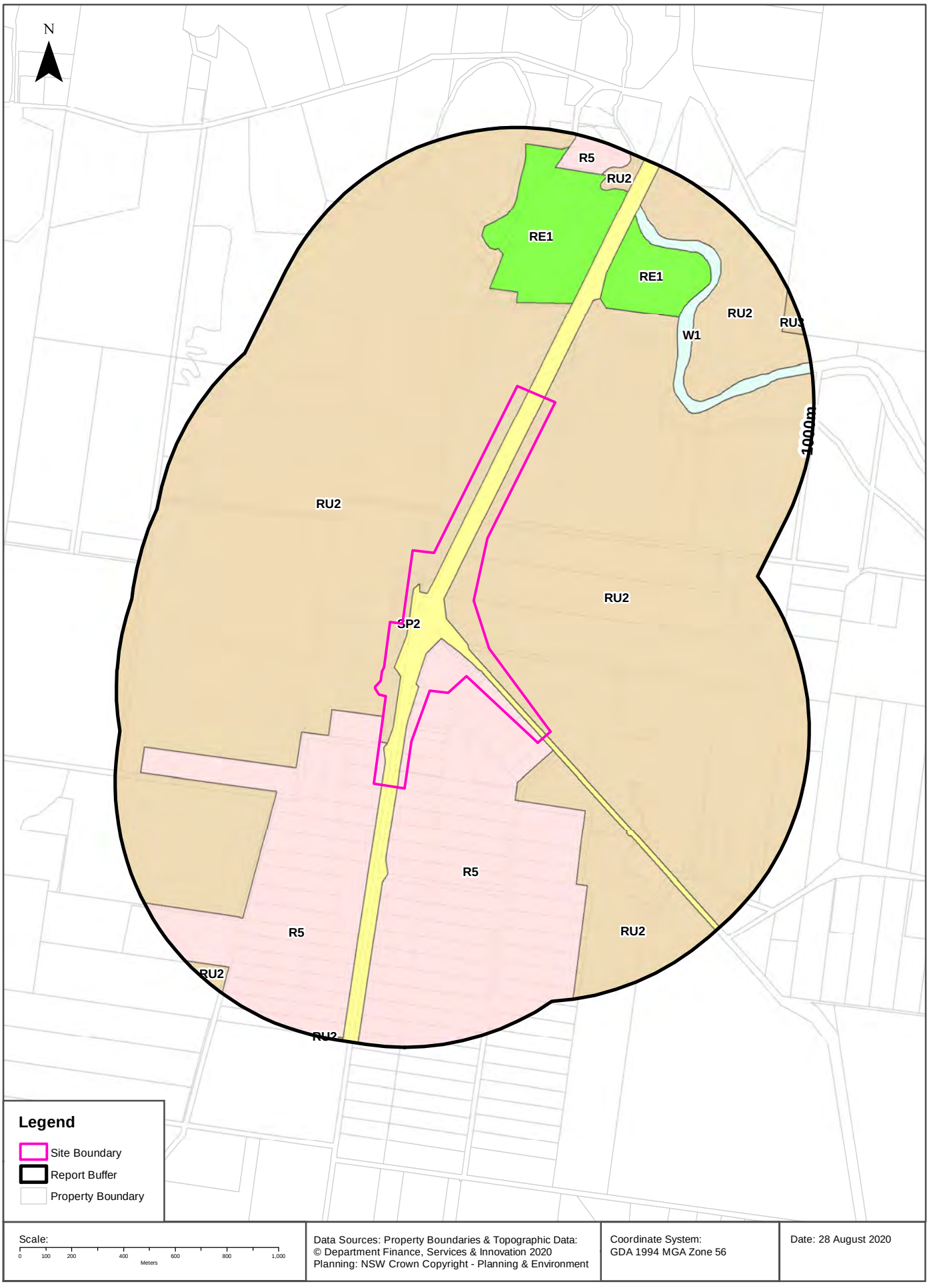
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No Records in Buffer							

EPI Planning Zones

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Environmental Planning Instrument

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RU2	Rural Landscape		Shoalhaven Local Environmental Plan 2014	08/04/2014	22/04/2014	26/06/2020		0m	Onsite
SP2	Infrastructure	Road	Shoalhaven Local Environmental Plan 2014	27/09/2019	27/09/2019	26/06/2020	Amendment No 23	0m	Onsite
R5	Large Lot Residential		Shoalhaven Local Environmental Plan 2014	08/04/2014	22/04/2014	26/06/2020		0m	Onsite
RU2	Rural Landscape		Shoalhaven Local Environmental Plan 2014	08/04/2014	22/04/2014	26/06/2020		61m	South East
RE1	Public Recreation		Shoalhaven Local Environmental Plan 2014	08/04/2014	22/04/2014	26/06/2020		325m	North
RE1	Public Recreation		Shoalhaven Local Environmental Plan 2014	08/04/2014	22/04/2014	26/06/2020		416m	North East
W1	Natural Waterways		Shoalhaven Local Environmental Plan 2014	08/04/2014	22/04/2014	26/06/2020		460m	East
RU2	Rural Landscape		Shoalhaven Local Environmental Plan 2014	16/02/2018	16/02/2018	26/06/2020	Amendment No 18	500m	East
R5	Large Lot Residential		Shoalhaven Local Environmental Plan 2014	08/04/2014	22/04/2014	26/06/2020		858m	North
RU3	Forestry		Shoalhaven Local Environmental Plan 2014	08/04/2014	22/04/2014	26/06/2020		916m	North East

Heritage Items

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Heritage

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
106073	Jervis Bay and Surrounding Area	Jervis Bay Rd, Jervis Bay NSW	1/11/102/0017	Natural	Nomination now ineligible for PPAL		0m	Onsite

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

State Heritage Register - Curtilages

What are the State Heritage Register 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							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage

Environmental Planning Instrument - Heritage

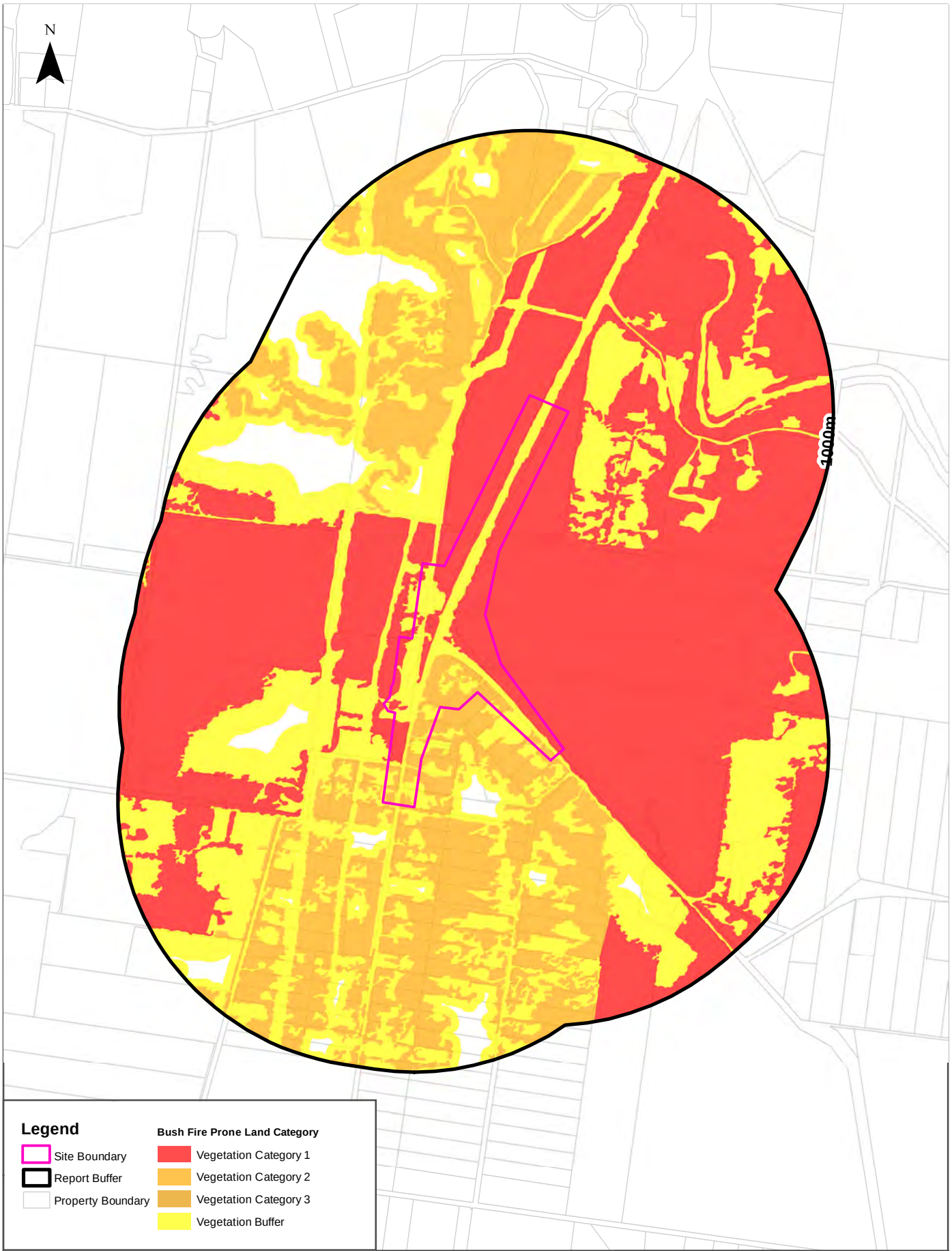
What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
193	Falls Creek School	Item - General	Local	Shoalhaven Local Environmental Plan 2014	08/04/2014	22/04/2014	10/07/2020	933m	North

Heritage Data Source: NSW Crown Copyright - Planning & Environment

Natural Hazards - Bush Fire Prone Land

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Natural Hazards

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

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

Ecological Constraints - Vegetation of the Southern Forests

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Legend

Site Boundary	01 Rainforests	06 Grassy Woodlands/Grasslands	11 Riparian Forests
Report Buffer	02 Wet Sclerophyll Forests	07 Dry Shrubby Forests	12 Sub-alpine Low Forests
Property Boundary	03 Ash Eucalypt Forests	08 Heath Forests, Mallee Low Forests, and Heathlands	13 Alpine/Sub-alpine Complex
Ramsar Wetlands	04 Montane Tableland Forests	09 Swamp Forests, Wet Heaths, & Sedgelands	14 Coastal Complex
	05 Dry Grass/Shrub Forests	10 Vegetation on Rock Outcrops / Screes	15 Wetlands

Scale: 0 100 200 400 600 800 1,000 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2020

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 August 2020

Ecological Constraints

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Vegetation of the Southern Forests

What vegetation of the Southern Forests exists within the dataset buffer?

Map Id	Veg Code	Formation	Class	Group	Distance	Direction
13329	139	08 Heath Forests, Mallee Low Forests, and Heathlands	08a Sandstone Plateau Heath Forests	Northern SC Hinterland Heath DryShrub Forest	0m	Onsite
13494	21	02 Wet Sclerophyll Forests	02c South Coast/Hinterland Layered Shrub Forests	South Coast Foothills Moist Shrub Forest	0m	Onsite
13543	139	08 Heath Forests, Mallee Low Forests, and Heathlands	08a Sandstone Plateau Heath Forests	Northern SC Hinterland Heath DryShrub Forest	33m	South
13231	21	02 Wet Sclerophyll Forests	02c South Coast/Hinterland Layered Shrub Forests	South Coast Foothills Moist Shrub Forest	48m	East
13417	21	02 Wet Sclerophyll Forests	02c South Coast/Hinterland Layered Shrub Forests	South Coast Foothills Moist Shrub Forest	238m	North West
13102	139	08 Heath Forests, Mallee Low Forests, and Heathlands	08a Sandstone Plateau Heath Forests	Northern SC Hinterland Heath DryShrub Forest	289m	West
12813	5	07 Dry Shrubby Forests	07c Coastal mixed species Dry Shrub forests	Jervis Bay Lowlands Dry Shrub-Grass Forest	591m	North
13647	139	08 Heath Forests, Mallee Low Forests, and Heathlands	08a Sandstone Plateau Heath Forests	Northern SC Hinterland Heath DryShrub Forest	658m	South West
13427	5	07 Dry Shrubby Forests	07c Coastal mixed species Dry Shrub forests	Jervis Bay Lowlands Dry Shrub-Grass Forest	669m	East
13669	5	07 Dry Shrubby Forests	07c Coastal mixed species Dry Shrub forests	Jervis Bay Lowlands Dry Shrub-Grass Forest	695m	South
13632	139	08 Heath Forests, Mallee Low Forests, and Heathlands	08a Sandstone Plateau Heath Forests	Northern SC Hinterland Heath DryShrub Forest	725m	South
12824	5	07 Dry Shrubby Forests	07c Coastal mixed species Dry Shrub forests	Jervis Bay Lowlands Dry Shrub-Grass Forest	777m	North East
13739	5	07 Dry Shrubby Forests	07c Coastal mixed species Dry Shrub forests	Jervis Bay Lowlands Dry Shrub-Grass Forest	790m	North East
13886	2	07 Dry Shrubby Forests	07a SC Hinterland Dry Shrub Forests	Coastal Lowland Dry Shrub Forest	804m	South East
13963	21	02 Wet Sclerophyll Forests	02c South Coast/Hinterland Layered Shrub Forests	South Coast Foothills Moist Shrub Forest	826m	South
13198	139	08 Heath Forests, Mallee Low Forests, and Heathlands	08a Sandstone Plateau Heath Forests	Northern SC Hinterland Heath DryShrub Forest	877m	East

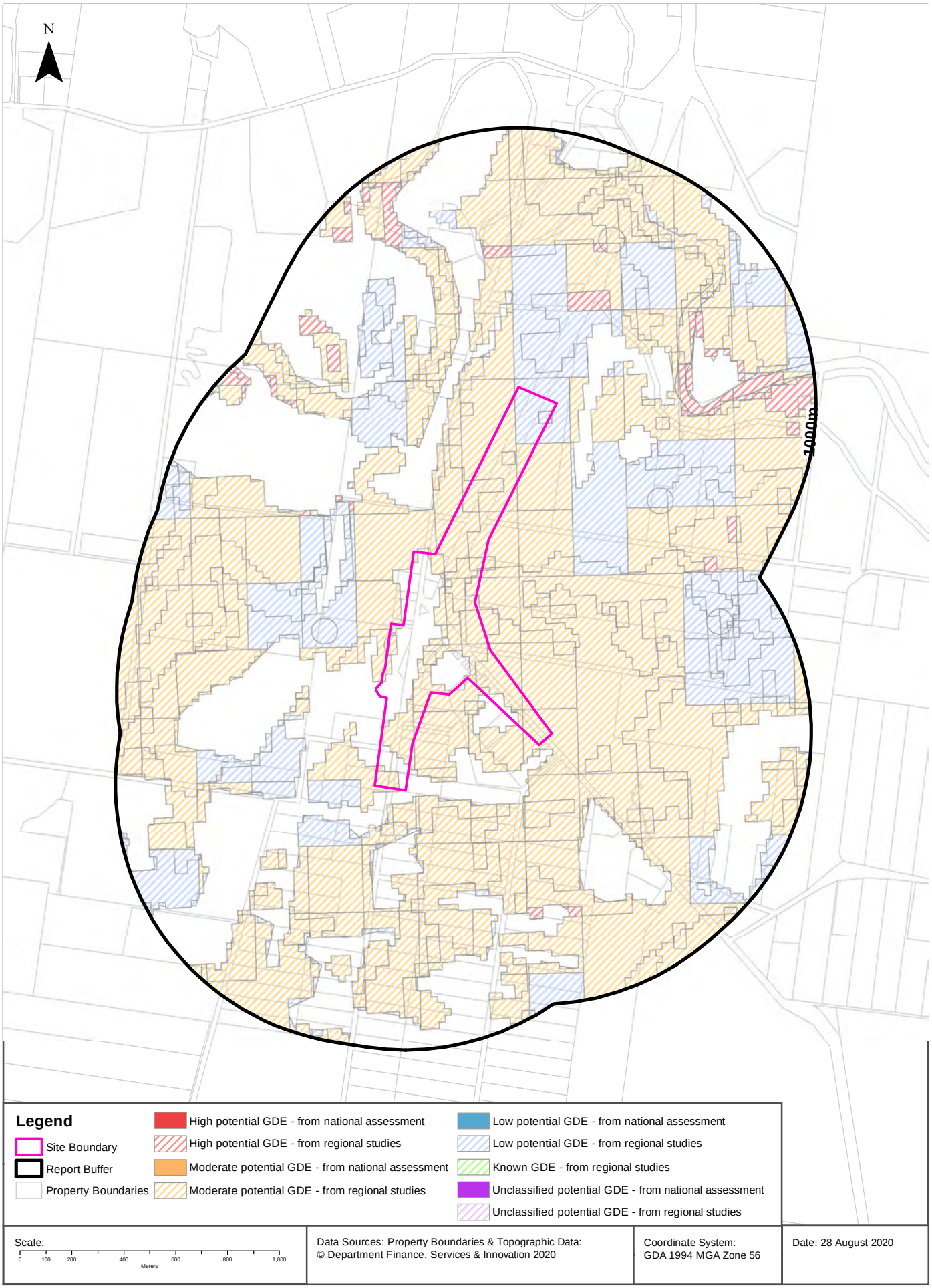
Ramsar Wetlands

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					

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540



Ecological Constraints

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	Low potential GDE - from regional studies	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		0m
Terrestrial	Moderate potential GDE - from regional studies	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	Moderate potential GDE - from regional studies	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		0m
Terrestrial	High potential GDE - from regional studies	Deeply dissected sandstone plateaus.	Vegetation		270m

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Ecological Constraints

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	3	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		0m
Terrestrial	4	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		0m
Terrestrial	5	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		0m
Terrestrial	6	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		0m
Terrestrial	7	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		0m
Terrestrial	8	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		0m
Terrestrial	10	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	10	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		0m
Terrestrial	2	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		58m
Terrestrial	9	Deeply dissected steeply sloping plateau margin in metamorphics and granite. Bounded in the west by the Great Escarpment.	Vegetation		303m

Ecological Constraints

Princes Highway / Jervis Bay Road Intersection, Falls Creek, NSW 2540

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Heleioporus australiacus	Giant Burrowing Frog	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Litoria littlejohni	Littlejohn's Tree Frog	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Calyptorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Dasyornis brachypterus	Eastern Bristlebird	Endangered	Category 2	Endangered	
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus fuliginosus	Sooty Oystercatcher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Lichenostomus fasciogularis	Mangrove Honeyeater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus occidentalis	Night Parrot	Presumed Extinct	Not Sensitive	Endangered	
Animalia	Aves	Pezoporus wallicus wallicus	Eastern Ground Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Thinornis rubricollis	Hooded Plover	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Arctocephalus forsteri	New Zealand Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus pusillus doriferus	Australian Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Dasyurus viverrinus	Eastern Quoll	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petauroides volans	Greater Glider	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus australis	Yellow-bellied Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petrogale penicillata	Brush-tailed Rock-wallaby	Endangered	Not Sensitive	Vulnerable	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Potorous tridactylus	Long-nosed Potoroo	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pseudomys novaehollandiae	New Holland Mouse	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Sminthopsis leucopus	White-footed Dunnart	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Hoplocephalus bungaroides	Broad-headed Snake	Endangered	Category 2	Vulnerable	
Plantae	Flora	Acacia constablei	Narrabarba Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia pubescens	Downy Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Amperea xiphoclada var. pedicellata		Presumed Extinct	Not Sensitive	Extinct	
Plantae	Flora	Caladenia tessellata	Thick Lip Spider Orchid	Endangered	Category 2	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Cryptostylis hunteriana	Leafless Tongue Orchid	Vulnerable	Category 2	Vulnerable	
Plantae	Flora	Eucalyptus langleyi	Albatross Mallee	Endangered Population, Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus sturgissiana	Ettrema Mallee	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Genoplesium baueri	Bauer's Midge Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Hibbertia puberula		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Hibbertia stricta subsp. furcatula		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Melaleuca biconvexa	Biconvex Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Pomaderris cotoneaster	Cotoneaster Pomaderris	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Pterostylis gibbosa	Illawarra Greenhood	Endangered	Category 2	Endangered	
Plantae	Flora	Pterostylis ventricosa		Critically Endangered	Category 2	Not Listed	
Plantae	Flora	Pterostylis vernalis		Critically Endangered	Category 2	Critically Endangered	
Plantae	Flora	Rhizanthella slateri	Eastern Australian Underground Orchid	Vulnerable	Category 2	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Solanum celatum		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Triplarina nowraensis	Nowra Heath Myrtle	Endangered	Not Sensitive	Endangered	

Data does not include NSW category 1 sensitive species.

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LC Code	Location Confidence
Premise match	Georeferenced to the site location / premise or part of site
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

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