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Goulburn Mulwaree Council

Highlands Source Project Land Use Assessment

April 2010



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Glossary of Terms

Director-General's Requirements	Requirements for an environmental assessment issued by the Director-General of the NSW Department of Planning in accordance with the <i>Environment Planning and Assessment Act 1979</i> .
Mitigation	Reduction in severity.
Option	A concept design alternative developed for consideration.
Proponent	Goulburn Mulwaree Council (GMC).
Project	Refers to the proposed Highlands Source Project. Broadly, the Project comprises of a proposed pipeline ca. 83 km in length to deliver water from the Wingecarribee Reservoir to the City of Goulburn in NSW.
Sensitive receiver	Land uses that are considered to be more susceptible to the impacts generated by the Project.



Acronyms & Abbreviations

DGR(s)	Director-General's Requirement(s)
GMC	Goulburn Mulwaree Council
HSP	Highlands Source Project
IWCM	Integrated Water Cycle Management
LEP	Local Environmental Plan
LGA	Local Government Area
NSW	New South Wales
WSC	Wingecarribee Shire Council
WTP	Water Treatment Plant



Units

km	Kilometres
mm	Millimetres
m	Metres



Executive Summary

Overview

This land use assessment aims to identify the existing land uses located along the proposed pipeline between Wingecaribbee Dam and Goulburn, as well as identifying any known changes in the future land use in the areas surrounding the proposed pipeline. This assessment also addresses the potential impacts which could arise as a result of the construction and operational phases of the Project.

Existing environment

Overall, the proposed pipeline would travel through agricultural land which is generally used for grazing, with some other agricultural uses scattered along the alignment. The proposed pipeline would travel through much of this agricultural land adjacent to existing infrastructure easements which travel through the area. These easements are currently either used for gas pipelines or overhead electricity lines.

Limited non-agricultural land uses are located along the pipeline. The majority non-agricultural land uses in the vicinity of the pipeline are associated with the towns of Moss Vale, Exeter, Sutton Forest and Marulan. The only major change in land use along the pipeline is at the Goulburn where the pipeline travels around the edge of the town and is therefore located in the vicinity of numerous non-agricultural land uses.

The proposed pipeline is located adjacent to limited sensitive residential receivers, with very little dwelling located along the pipeline, with the exception of concentrations of dwellings at Goulburn, north of Exeter and to the south east of Moss Vale. Only three non-residential sensitive receivers have been identified along the proposed pipeline these include:

- ▶ Tudor House School near Moss Vale;
- ▶ South Goulburn Primary School on the western side of Goulburn; and
- ▶ Illawarra Institute Goulburn TAFE on the western side of Goulburn.

Impact assessment

Land use impacts as a result of the construction of the proposed pipeline are considered to be relatively minor due to the proposed pipeline travelling through areas that are used mainly for the grazing of livestock. Impacts on land use would be limited to the following:

- ▶ Temporary loss of the use of land as a result of construction works and the rehabilitation period following construction;
- ▶ Potential of severance of land during construction; and

The above impacts have the potential to occur, however, with the implementation of mitigation measures these impacts can be avoided or minimised.

The proposed pipeline is located in close proximity to a number of residential dwellings. Impacts on these residential dwellings is considered to be minimal as no direct impacts are expected and the proposed construction method would mean that works would only be in any one area for a period of no longer than a week.

Land use impacts during the operation of the proposal would be minimal as much of the land to be disturbed by the construction phase would be returned to its natural state after the pipeline is laid.



Operation impacts would be associated with the maintenance of the pipeline which is considered to be of minimal impact. Another operational impact of the proposed pipeline is that land within the easement would have a limited development potential due to the location of the pipeline below ground and therefore limit the use of the land in the future.

Use of high value agricultural land would be impacted upon during construction; however this would be minimal due to the short term nature of the works and also as the land is not currently used for agricultural purposes considered to be of high value. Impacts on high value agricultural land is not considered during operation, as land can be used for agricultural purposes considered to be of high value, subject to approval from the proponent.

Overall, the construction and operation of the pipeline would have minimal impacts to land use. Where impacts could potentially arise, mitigation measures would be implemented to further reduce the potential impacts.



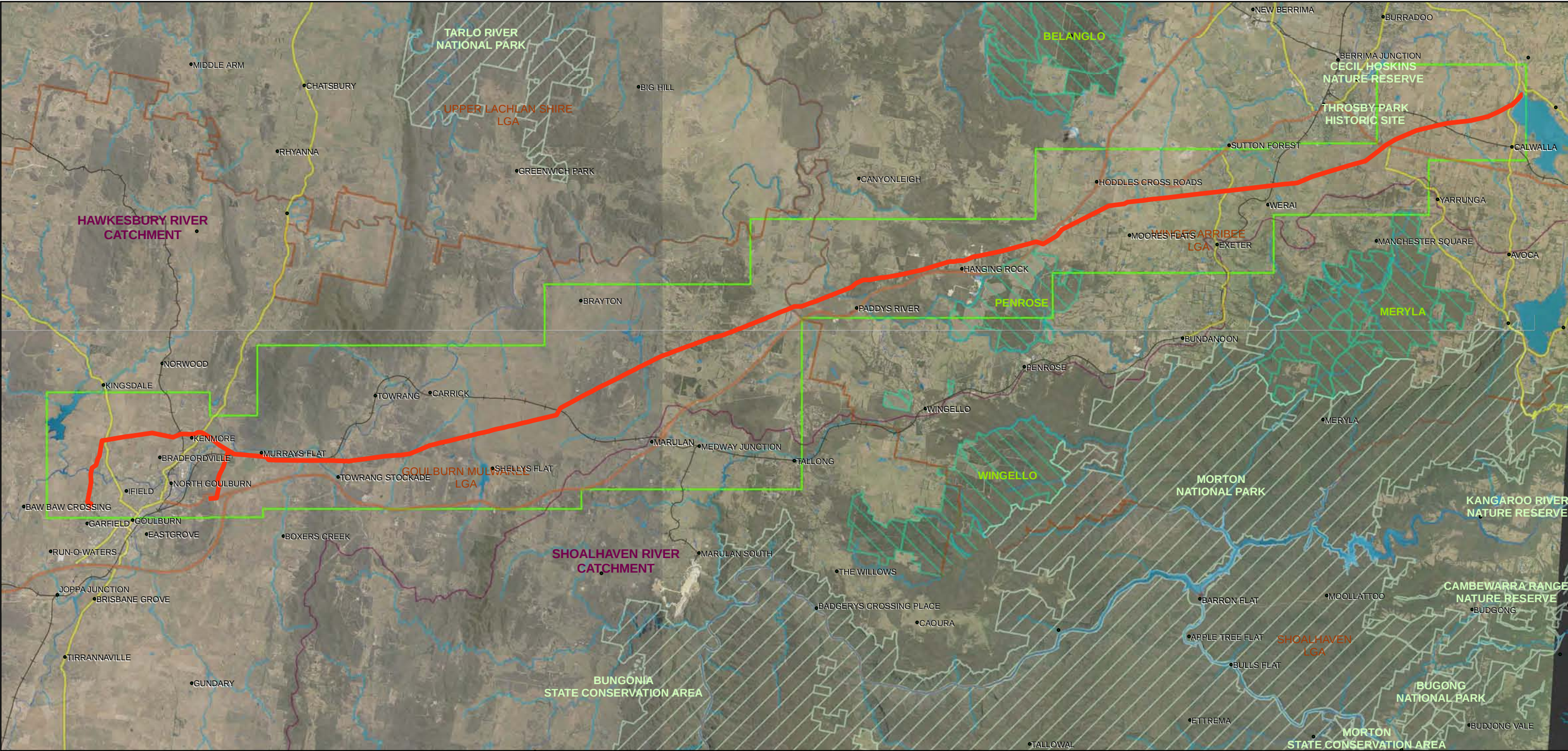
1. Introduction

This land use assessment has been undertaken by GHD on behalf of the Goulburn Mulwaree Council (GMC) for the Highlands Source Project (referred to as 'the Project'). This report has been prepared to assess potential impacts of the Project on land use during both the construction and operational phases of the Project.

1.1 Background

Goulburn has faced severe drought and water restrictions since 2002. By mid 2007 Goulburn had less than 12 months' water supply available. GMC, in conjunction with a State Government Task Force, identified an Emergency Pipeline from Wingecarribee Reservoir as the best means of overcoming the emergency and drought proofing Goulburn for the future (GMC & DoC, 2007). Subsequent rains in June 2007 removed the emergency aspect of the Project; however the need for improved water security remains.

Since 2007, a range of options for securing Goulburn's water supply have been investigated. GMC is preparing a draft Integrated Water Cycle Management (IWCM) Strategy that will outline actions for improving long term water sustainability. The IWCM Strategy is expected to be finalised towards the end of February 2010, and it is anticipated that the Highlands Source Project will be an integral part of this Strategy. Additionally, GMC has undertaken a Goulburn Water Supply Strategy Review, in which the Highlands Source Project was identified as the best solution for improving the city's water security.



Legend

- Proposed Pipeline Alignment

Study Area

Locality

Primary Road

Arterial Road

Railway

Rivers, Creeks

LGA Boundary

Lakes, Dams

Reserve

State Forest

Catchment Boundary
- 1:200,000 (at A3)

0 2 4 6 8 10

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55
-
-
- Goulburn Mulwaree Council
Highlands Source Project
- Study Area
- Job Number 23-13312
Revision 0
Date 19 JAN 2010
- Figure 1
- \\ghdnet\ghd\AU\Canberra\Projects\23\13312\GIS\ArcView\Workspace\EA\Figures\23_13312_EA_StudyArea.mxd
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Data Source: NSW Lands Dept: Placepoint, roadsegments,railway,hydroarea,hydroline,npwreserve,stateforest - 2007; GMC: aerial imagery - 2008; NSW DECC: rbasin_polygon - 2008. Created by: ccharalambou

Level 7, 16 Marcus Clarke Street Canberra ACT 2601 T 61 2 6113 3200 F 61 2 6113 3299 E cbrmail@ghd.com.au W www.ghd.com.au



1.2 Scope of assessment

1.2.1 Objectives and purpose of this report

The objectives of this land use assessment are to:

- Assess the potential impact of construction and operation of the Project on land use.
- Address the Director General's Requirements (DGRs) for the Environmental Assessment of the Project.

Land use

The DGRs identify land use and access as key issues for the Environmental Assessment. Table 1-1 outlines the DGRs relating to land use and where they have been addressed in this report.

Table 1-1 Director-General's Requirements – land use

Director-General's Requirements	Where addressed in this report
Provide a strategic assessment of the project, including justification of the need and scale, scope and location for the project, with particular reference to the water supply requirements of the regions, alternatives considered (including consequence of not proceeding); and consistently with relevant State and regional planning policies including the Sydney-Canberra Corridor Regional Strategy	Section 6.4
Analyse the site suitability of the project considering potential conflicts with existing and future land uses and infrastructure (including existing residential and other sensitive land use, known future development, infrastructure and utility corridors, land of high agricultural value and land of high conservation value), taking into account local and strategic land use objectives.	Chapter 6

1.2.2 Scope of work

The scope of the land use assessment is to identify the existing land uses in the area as well as identifying any known changes in the future land use. This includes identifying sensitive land uses which may experience increased impacts as a result of the Project.

The assessment also addresses the potential impacts which could arise as a result of the construction and operational phases of the Project. This report also includes mitigation measures which could be implemented in order to further reduce the impacts of the Project on land use.

1.3 Limitations

Overall this land use study has been based on identifying the general land use of the area which is traversed by the proposed pipeline route. Land use identification was limited due to site access restrictions which have result in:

- An inability to confirm what each piece of land is specifically used for; and
- An inability to access all pieces of land in which the pipeline travels through.



2. Planning and statutory requirements

The Project is located within the Wingecarribee and Goulburn Mulwaree local government areas. Therefore the local environmental plans of these Local Government Areas (LGA) apply to the site. Currently the following local environmental plans apply to the site:

- *Wingecarribee Local Environmental Plan 1989*; and
- *Goulburn Mulwaree Local Environmental Plan 2009*.

Wingecarribee Council is currently updating their local environmental plan, which is currently with the Department of Planning for approval. The *Draft Wingecarribee Local Environmental Plan 2009* is considered to be relevant to the proposal as this plan may be in force in the near future.

Section 5.3 outlines the zones in which the Project is located.

Section 6.4 provides an outline describing how the Project is consistent with the existing and future local environmental plans.



3. Project description

The Project is to construct and operate a water transfer scheme to transfer water from Wingecarribee Reservoir (9 km east of Moss Vale NSW) to Goulburn's water supply system.

The proposed pipeline would be approximately 83 km in length and would be located within the Council areas of Wingecarribee Shire Council (WSC) and GMC. The necessary ancillary infrastructure would include an offtake and pump station at the Wingecarribee Reservoir site, power supply and controls, and a telemetry system.

The pipeline would deliver a flow of 5 ML/day (over a 22 hour period) with the potential to increase the flow to 7.5 ML/day in the future (15 to 20 years time) to accommodate expected growth in demand. The mode of operation of the system, whether it will be continuous or intermittent, would be subject to detailed design.

The pipeline easement would be constructed predominantly adjacent to existing infrastructure easements. The easement would traverse mostly rural land and would cross various waterways, existing services, and road and rail infrastructure.

There are two water transfer schemes under consideration. The schemes are as follows:

- Raw Water Transfer Scheme, which would transfer raw (untreated) water from the Wingecarribee Reservoir to the Goulburn Water Treatment Plant; and
- Treated Water Transfer Scheme, which would transfer treated water from the Wingecarribee Water Treatment Plant to a reservoir at Governor's Hill (east of Goulburn) or directly into the town water supply system.

The Project, for which GMC is seeking approval to construct and operate, contains both water transfer schemes. Only one transfer scheme however would be constructed.

If the Project is approved, a decision on which scheme to construct would be made once detailed project design has been completed. It is proposed to have the Project operational by June 2011.

The Project would be jointly funded by GMC, the NSW Government and the Australian Government through its Water Smart Australia Program.

Key construction activities of the Project include:

- Constructing the water intake infrastructure at the Wingecarribee Reservoir site;
- Trench excavations and placement of the pipeline to the off-take point at Goulburn;
- Constructing railway, road, services and river crossings;
- Reinstatement / revegetation of the construction corridor; and
- Commissioning of the water transfer scheme.

Key operational activities of the Project would include:

- Pumping of water from the Wingecarribee Reservoir to Goulburn;
- Regular maintenance of the pumping station;
- Regular maintenance of the air and scour valves; and



- Less frequent maintenance of the pipeline.

3.1 Investigation Area

The Project comprises approximately 83 km of trunk water main and ancillary infrastructure, extending from Wingecarribee Reservoir within the Wingecarribee LGA, to the Goulburn WTP within the Goulburn Mulwaree LGA.

The Wingecarribee LGA is located in the Southern Highlands and centred approximately 150 km south of Sydney. The majority of the LGA is elevated 640 metres above sea level. The Goulburn Mulwaree LGA is situated to the south west of the Wingecarribee LGA. The proposed pipeline corridor follows an upward sloping gradient to Goulburn, which is 702 metres above sea level.

The preferred pipeline route corridor would be located mostly adjacent to existing infrastructure easements that have previously been cleared and either remain cleared or have regenerating vegetation present. From Wingecarribee Reservoir, the proposed pipeline corridor largely runs adjacent to existing power line easements until it crosses the Hume Highway. After crossing the Hume Highway, the proposed pipeline would be located adjacent to and outside of an existing gas pipeline easement (the Moomba to Sydney Gas Pipeline), which it follows almost the entire way to Goulburn.



4. Methodology

The following tasks were undertaken to assess the impact of the Project on land uses along the proposed pipeline route:

- ▶ Establish the existing land uses located along the proposed pipelines route. A desktop review of zoning plans, topographic maps, aerial photography was undertaken to determine the land uses present along the proposed pipeline.
- ▶ A site visit to assist with confirming the findings of the desktop review and to provide greater detail of the exact use of the land.
- ▶ Identification of the potential impacts of the main features of the Project on land use;
- ▶ A desktop review of existing plans and strategies to determine the Project's consistency with such documents that govern land use; and
- ▶ Development of recommended mitigation measures as appropriate.



5. Existing environment

5.1 Land use

5.1.1 Overview

Overall, the proposed pipeline traverses agricultural land that is generally used for grazing, with some other agricultural uses located along the pipeline. The proposed pipeline would traverse much of this agricultural land adjacent to existing infrastructure easements. These easements are currently either used for gas pipelines or overhead electricity lines.

5.1.2 Glenquarry Sector

Land in the Glenquarry sector is generally used for agricultural purposes with much of the land used for grazing. Land use at the eastern end of the proposed pipeline, in the vicinity of Wingecarribee Dam is associated with the use of the dam and includes water treatment and pumping infrastructure. To the south east of Moss Vale on the Illawarra Highway is a smaller residential area containing small residential lots that are located approximately 1 kilometre from the pipeline. This area of increased residential dwellings is also located next to the Tudor House School which is located adjacent to the Illawarra Highway (approximately 1 kilometre from the proposed pipeline). Land use diversifies approximately two kilometres to the north of the proposed pipeline within the town of Moss Vale. This area consists of a large number of different land uses, however, land use is dominated by residential uses that surround the town centre.

5.1.3 Werai-Moss Vale and Sutton Forest-Exeter Sectors

Land in the Werai-Moss Vale and Sutton Forest-Exeter sectors is primarily used for agricultural purposes, with much of the land used for grazing. Limited non-agricultural uses have been identified along the proposed pipeline. Such non-agricultural land uses include, Mount Broughton Golf Club located 500 metres to the north of the proposed pipeline and the Service Centre located on the Hume Highway 200 metres to the west of the proposed pipeline. A small area adjacent to Exeter Road to the north of the town of Exeter contains a number of residential dwellings in close proximity to each other. These dwellings could be considered to be on rural residential properties, and back on to agricultural land in which the proposed pipeline would travel through.

5.1.4 Paddy's River and Marulan Sectors

Some land in the Paddy's River and Marulan Sectors is used for agricultural purposes, with grazing being the main use. These uses are located on cleared land in between areas of dense vegetation. Much of the alignment in this section is located within an existing easement which travels through these densely vegetated areas. The only significant non-agricultural land use in the vicinity of the alignment is the Penrose State Forest which is located approximately 1 kilometre to the south of proposed pipeline on the southern side of the Hume Highway. The nearest significant change in land use in this section of the proposed pipeline is the town of Marulan which is located three kilometres to the south of the proposed pipeline; this area contains a variety of land uses, such as residential, commercial and other community land uses.



5.1.5 Towrang and Murrays Flat Sectors

Land in the Towrang and Murrays Flat Sector is primarily used for agricultural purposes. The proposed alignment travels through land that has not been cleared for agriculture and therefore remains relatively densely vegetated. The proposed pipeline travels through these areas adjacent to existing easements. These areas occur generally at the western end of this section of the proposed pipeline east of Towrang Road. This section of the proposed pipeline contains limited non-agricultural land uses.

5.1.6 Goulburn Sector

In the vicinity of Goulburn there are two alignment options. Land uses in the vicinity of each of these options is outlined below.

Treated water transfer scheme alignment (southern alignment)

The southern alignment option of the Project at Goulburn is located predominately on land used for agricultural purposes or land that contains dense vegetation. The land to the west of the proposed alignment contains a vast range of differing land uses associated with the town of Goulburn, with significant areas of residential uses. The alignment would end on land that currently contains an area of dense vegetation. The Goulburn Speedway is the only significant non-agricultural land use located along this alignment; this land use is located approximately 200 metres to the south of this alignment of the pipeline.

Raw water transfer scheme alignment (northern alignment)

The northern alignment option of the Project at Goulburn is located around the northern outskirts of the town and is located on land that is generally described as rural. This includes some land that is used for agricultural purposes and also some land that is used for rural residential development. The alignment travels close to the built up area of Goulburn in the vicinity of the Kenmore Hospital site on Taralga Road which is located approximately 150 metres to the south of the proposed pipeline, this site is no longer an operational hospital and is used primarily as a museum. The pipeline also travels through the grounds of the Goulburn Racecourse which is located on the northern edge of town on Taralga Road. Once the pipeline travels west past these land uses, the alignment once again travels through agricultural land prior to travelling adjacent to a rural residential area on the western edge of Goulburn. The proposed end point of the pipeline at an existing water treatment plant is located adjacent to the abovementioned rural residential area and a number of educational establishments of which the closest is approximately 500 metres to the east of the proposed pipeline. A built-up low density residential area is located approximately 200 metres to the south of the existing water treatment plant.

5.2 Sensitive receivers

The main sensitive receivers in the vicinity of activities required for the construction and operation phases of the Project are considered to be mostly residential receivers located along the proposed pipeline corridor. Residential dwellings along the proposed pipeline are typically located on rural properties where densities are extremely low. The exception to this, are rural residential properties located along the edge of Goulburn and to the north of Exeter. A small collection of standard residential lots are located to the north of the proposed pipeline corridor near Moss Vale and with some standard residential lots located in the vicinity of the pipeline around Goulburn.



Approximately 40 dwellings are located within 100 metres of the proposed pipeline, with 16 of these located within 50 metres. Two dwellings located approximately 10 metres from the alignment. These dwellings are located on a property located off the Hume Highway west of the second crossing of the Wollondilly River and a standard residential lot located at Goulburn south west of the Goulburn Racecourse.

A few non-residential sensitive receivers have been identified as being located in the vicinity of the proposed pipeline, these land uses are:

- ▶ Tudor House School which is located approximately 1 kilometre to the north of the proposed pipeline near Moss Vale;
- ▶ South Goulburn Primary School which is located approximately 500 metres east of the proposed pipeline on the western side of Goulburn; and
- ▶ Illawarra Institute Goulburn TAFE which is located approximately 800 metres east of the proposed pipeline on the western side of Goulburn.

5.3 Zoning

Land along the proposed pipeline is located within the Goulburn Mulwaree and Wingecarribee LGAs. Land within the Goulburn Mulwaree LGA is controlled by the *Goulburn Mulwaree Local Environmental Plan 2009*. Land within the Wingecarribee LGA is controlled by the *Wingecarribee Local Environmental Plan 1989*, however, the *Draft Wingecarribee LEP 2009* is currently with the Department of Planning for approval and therefore was considered as part of this study. Table 5-1 outlines the zones located along the proposed pipeline under each of the three relevant planning instruments.

Copies of the relevant zoning maps are located in Appendix A.

Table 5-1 Land use zones located along alignment

Sector	Planning Instrument	Zones
Glenquarry	<i>Wingecarribee LEP 1989</i>	▶ 5(b) Special Uses (Railways) ▶ 5(c) Special Uses (Water Catchment) ▶ 7(b) Environmental Protection (Landscape Conservation)
	<i>Draft Wingecarribee LEP 2009</i>	▶ E3 Environmental Management ▶ SP2 Water Supply System ▶ SP2 Rail Infrastructure Facility ▶ SP2 Infrastructure
Werai - Moss Vale	<i>Wingecarribee LEP 1989</i>	▶ 1(a) Rural 'A' ▶ 5(b) Special Uses (Railways)
	<i>Draft Wingecarribee LEP 2009</i>	▶ RU2 Rural Landscape ▶ E3 Environmental Management ▶ SP2 Rail Infrastructure Facility



Sector	Planning Instrument	Zones
Sutton Forest – Exeter	<i>Wingecarribee LEP 1989</i>	SP2 Tourist
		1(a) Rural 'A' 1(b) Rural 'B' 7(b) Environmental Protection (Landscape Conservation)
	<i>Draft Wingecarribee LEP 2009</i>	- SP2 Tourist - E3 Environmental Management - SP2 Infrastructure
Paddy's River	<i>Wingecarribee LEP 1989</i>	1(a) Rural 'A' 1(b) Rural 'B'
	<i>Draft Wingecarribee LEP 2009</i>	- RU2 Rural Landscape - E2 Environmental Conservation - E3 Environmental Management
Marulan	<i>Goulburn Mulwaree LEP 2009</i>	- RU1 Primary Production - RU2 Rural Landscape - RU6 Transition
Towrang	<i>Goulburn Mulwaree LEP 2009</i>	- IN1 General Industrial - RU1 Primary Production - RU2 Rural Landscape - RU6 Transition - SP2 Public Utility Undertaking
Murray's Flat	<i>Goulburn Mulwaree LEP 2009</i>	Northern Alignment
		- SP2 Public Utility Undertaking - RU2 Rural Landscape - RE2 Private Recreation
		Southern Alignment
		- E2 Environmental Conservation - E3 Environmental Management - RU6 Transition - SP2 Public Utility Undertaking
Goulburn	<i>Goulburn Mulwaree LEP 2009</i>	Northern Alignment
		- RE1 Public Recreation - RE2 Private Recreation - E2 Environmental Conservation



Sector	Planning Instrument	Zones
		▶ E3 Environmental Management ▶ R2 Low Density Residential ▶ R5 Large Lot Residential ▶ RU6 Transition ▶ SP2 Public Utility Undertaking

5.4 High value agricultural land

A search of the Land Capability for NSW' mapping (Department of Land and Water Conservation) was undertaken to ascertain the agricultural value of the land located within the proposed pipeline easement. Mapping indicates 93.1% of the construction corridor (20 metre wide easement) is classified as one of three types of agricultural land. These classes of agricultural land and the amount located within the construction corridor are as follows:

- ▶ 22.3 ha of land classified as suitable for regular cultivation (13.3% of construction corridor);
- ▶ 107.3 ha of land classified as suitable for grazing with occasional cultivation (64.1% of construction corridor); and
- ▶ 26.2 ha of land classified as suitable for grazing with no cultivation (15.6% of construction corridor).

Land considered to be suitable for regular cultivation is deemed to be of 'High Value Agricultural Land'. This land is located predominately at the Wingecarribee end of the proposed pipeline to the east of the Hume Highway. Isolated areas of 'High Value Agricultural Land' are located to the west of Goulburn within the Murray's Flat Sector.

5.5 Land of high conservation value

The proposed pipeline would not be required to travel through any National Parks or land reserved for conservation purposes.

Land having biodiversity value is located in areas along the proposed pipeline. The location of these areas has been outlined in the ecology assessment.

Land having heritage value, both Indigenous and non-Indigenous, is located along the proposed pipeline. Then location of these areas has been outlined in the relevant heritage reports.

The proposed pipeline is located within the Sydney Drinking Water Catchment.



6. Impact assessment

6.1 Environmental Risk Assessment

The Project would have some impacts on land use and may introduce new risks that would require careful management. A detailed assessment of the identified impacts was undertaken by considering the risks that would be associated with them.

The risk assessment was conducted to:

1. prioritise the identified impacts in terms of the potential relative risk each may pose to the land use and the consequences that may arise from any changes; and
2. identify targeted actions and initiatives that would need to be adopted to monitor and manage the risks during the proposed Project operations.

A qualitative risk assessment approach was used. The relative risk for each identified impact was determined as a function of the likelihood of a certain impact event occurring as well as the consequences that may be associated with it. Initially the risk was assessed on the basis of the Project description, a desktop study to determine land use along the proposed pipeline and system understanding (*i.e.* how the current systems operate, the controls that already exist to manage some of the risks, *etc.*) documented in this report. For the impacts with the higher relative risk scores, additional management and control activities have been identified for consideration, and the risks were reassessed assuming that these controls/actions would have been implemented. (It is these additional identified management activities and controls that make up the recommended impact mitigation measures described in Section 7).

The details and outcomes of the risk assessment are provided in Appendix B.

The potential impacts identified as posing an extreme, high or medium risk in the Risk Assessment are:

- Severance of agricultural land (Medium); and
- Loss of stock due to fence removal (Medium).

No land use issues are considered to pose an extreme, high or medium risk during the Project's operation phase.

6.2 Construction phase

6.2.1 Temporary land use impacts

During the construction phase temporary changes to the use of existing land would occur as a result of the trenching works. Impacts on the use of the land would be mainly related to the loss of land temporarily for the use for agricultural purposes such as grazing, this includes temporary loss of the 22.3 ha of agricultural land classified as high value. This impact would potentially extend beyond the construction period, as the land within the easement returns to its natural state after construction has disturbed the soils and ground cover (grasses).

Temporary land use impacts for the Project are generally related to agricultural (predominately grazing) land uses. However, some impacts could potentially be experienced to non-agricultural land uses. These impacts are considered to be minor due to the small amount of non-agricultural land that would be



impacted. The most significant land use that could be potentially impacted, is land on which the Goulburn Racecourse is located, the proposed pipeline travels through the racecourse site and could potentially result in impacts during construction. These impacts would be minimised through staging the trenching required to be outside of times in which the racecourse experiences periods of heavy use, such as on race days.

The impacts expected during construction are considered to be relatively minor as the construction work would move along the route progressively as sections of pipe are laid. This would minimise the impacts on the existing land uses at any one point to a relatively short period of time. However, some impacts would potentially occur after the pipe is laid, as land would continue to be considered to be unusable, while it is given time to rehabilitate to a level considered appropriate after consultation with the affected land owner. Overall these impacts are considered to be minimal as the percentage of the land to be disturbed on many properties is relatively small due to the size of the existing allotments. The size of the majority of properties also means that there are suitable alternate areas available for agricultural use during the construction phase.

6.2.2 Land severance

If the construction works were required to occur across a property (i.e. from boundary to boundary), the property in question would be split into two separate components with access between these two separate components being limited or not possible. This potential impact is considered unlikely as the staging of the trenching for the proposed pipeline would be undertaken to ensure that no land is severed into separate components.

6.2.3 Land of high conservation value

The Project has the potential to impact on land of high conservation value; these impacts have been assessed as part of other specialist studies such as ecology, heritage and water quality.

6.3 Operation

6.3.1 Restrictions to use of land

As the proposed pipeline would be located underground, operational impacts would be limited to maintenance activities, including periodic checking of above-ground air valves, and restrictions on the use of land within the proposed pipeline easement.

During operation of the proposed pipeline, restrictions would be placed on the land in the vicinity of the pipeline due to the presence of the pipeline below ground. These restrictions would be applied to the pipeline easement (up to 10 metres in width). The restrictions to be put in place within the easement include:

- ▶ Landowners would not be able to erect a new, or change an existing building, structure, pipeline, road, fence, driveway or paving within the pipeline easement, without the approval of the proponent; and
- ▶ Approval to be sought from the proponent prior to planting trees, cropping, digging, ploughing or altering the ground level within the proposed pipeline easement.



These restrictions would be outlined in the lease agreements entered into between the proponent and the landowners. The above restrictions would result in a decrease of the development potential of the land located within the easement. However, due to much of the land to be located within the new easement being used for grazing and other agricultural uses, impacts to these land uses are considered to be minimal as the proposed pipeline would be laid at a sufficient depth so as not to affect cultivation, grazing of livestock and normal farming activities over the proposed pipeline easement in the long term. Due to the depth of the pipeline the use of land with high agricultural value would not be impacted upon during operation, subject to approval from the proponent.

The restrictions placed on the new easement when coupled with the restrictions placed on existing easements, which would be located adjacent to much of the new easement, would result in a wide corridor of land which would have a reduced development potential. However, due to the existing use in these areas being predominately grazing, the impacts of this reduction of development potential is considered to be minimal as this use would be allowed to continue during operation as outlined above.

6.4 Consistency of the Project with existing plans and strategies

6.4.1 Local environmental plans

The Project is permissible within a number of zones through which it traverses. However, under two of the relevant LEPs the Project is considered to be prohibited development within the zone listed below:

- ▶ Zone RE1 – Public Recreation (Goulburn Mulwaree LEP);
- ▶ Zone RE2 – Private Recreation (Goulburn Mulwaree LEP);
- ▶ Zone E2 – Environmental Conservation (Goulburn Mulwaree LEP);
- ▶ Zone E3 – Environmental Management (Goulburn Mulwaree LEP and Draft Wingecarribee LEP);
- ▶ Zone RU2 – Rural Landscape (Draft Wingecarribee LEP);
- ▶ Zone SP2 – Infrastructure (Draft Wingecarribee LEP);
- ▶ Zone SP2 – Infrastructure (Rail Infrastructure Facility) (Draft Wingecarribee LEP); and
- ▶ Zone SP3 – Tourist.

However, the *State Environmental Planning Policy (Infrastructure) 2007* overrides local environmental plans and includes provisions which make the Project permissible without consent within all zones described in the three local environmental plans relevant to the Project.

6.4.2 Sydney to Canberra Corridor Strategy 2006-2031

Discussion of the consistency of the proposal with the overall objectives of the *Sydney–Canberra Corridor Regional Strategy* is discussed in the Strategic Context and Need chapter of the Environmental Assessment.

This section identifies the plans for future development as outlined in the strategy and outlines the potential impacts the project could have on these plans.

Under the strategy the following areas near the proposed pipeline have been identified for future settlement:



- ▶ 1400 lots at Moss Vale, the location of these lots is limited to greenfield areas to be identified;
- ▶ 1000 lots at Mary's Mount located on Goulburn's northern outskirt's;
- ▶ Additional lots at Kenmore located on the Goulburn's northern outskirt's.

The impacts on future development at Moss Vale cannot be identified, as the location of the potential new development is currently unknown. Through a review of the *Draft Wingecarribee LEP 2009*, which is expected to be gazetted in the near future, the area in which the proposed pipeline travels is unlikely to be used for future residential development as the land is proposed to be zoned for rural purposes.

The recently adopted *Goulburn Mulwaree LEP 2009* has zoned areas around Mary's Mount and Kenmore for residential development, consistent with the Strategy. A review of the LEP indicates that the proposed pipeline would not travel through these areas, and therefore the impacts of the proposed pipeline on future development is considered to be minimal.



7. Mitigation measures

7.1 Construction

The following mitigation measures would be implemented to minimise the potential impacts during the construction of the Project:

- ▶ The following standard project approaches would be adopted to minimise the impacts on land use:
 - The proponent would consult and prepare agreements between the proponent and landholders, which outline all matters pertaining to the proposal specific to their property and ensure landowner and construction contractor are aware of the other's requirements;
 - Rehabilitation plans to be incorporated into the individual property plans, rehabilitation objectives to be agreed upon with the landowner during consultation. Rehabilitated land to be maintained until objectives are achieved;
 - Access to properties to be provided at all times, this includes maintaining access within properties and avoidance of severing pieces of land from the rest of the property;
 - Staging of works to avoid impacts on land uses where possible;
 - Services searches would be undertaken during detailed design to identify and locate underground services located in the corridor. The design would aim to ensure that services are not impacted. Potential impacts on services would be dealt with in the project hazards and risk management plan. Should impacts to underground services be unavoidable, consultation with the service provider would be undertaken and the services relocated prior to construction and outlined in the construction environmental management plan;
- ▶ Consultation with landowners would occur in accordance with the construction environmental management plan for the Project, especially with regards to access to the corridor during construction.

7.2 Operation

The following mitigation measures would be implemented to minimise the potential impacts during the operation of the proposed pipeline:

- ▶ The following standard project approaches would be adopted to minimise the impacts on land use:
 - Pipeline to be signposted to ensure that the route is known so that no earthworks occur within the easement;
 - The pipeline route would be periodically inspected to ensure rehabilitation and stabilisation works have been effective in the longer term;
- ▶ Consultation with landowners would occur in accordance with the operational environmental management plan for the Project, especially with regards to maintenance access and limiting development within the corridor; and
- ▶ Provision of a plan showing pipeline easement and the agreed access routes to landowners.



8. Conclusion

The proposed pipeline travels through a significant amount of private land. Much of this land is used for agricultural purposes with grazing being the most common form of land use within the study area. The proposed pipeline also travels in close proximity to the towns of Moss Vale and Goulburn, at these locations the proposed pipeline is located on or adjacent to land that is used for non-agricultural purposes such as residential, recreational, educational or transport infrastructure purposes.

Land use impacts as a result of the construction of the proposed pipeline are considered to be relatively minor due to the proposed pipeline travelling through areas that are used mainly for the grazing of livestock. Impacts on land use would be limited to the following:

- ▶ Temporary loss of the use of land during construction works; and
- ▶ Potential of severance of land during construction.

The above impacts have the potential to occur, however, with the implementation of the mitigation measures outlined in Chapter 7 these impacts can be avoided or minimised.

The proposed pipeline is located in close proximity to a number of residential dwellings which are located on large properties, the proposed pipeline is located within 100 metres of approximately 60 dwellings, with the closest being 5 metres from the proposed alignment. Impacts on these residential dwellings is considered to be minimal as no direct impacts are expected and the proposed construction method would mean that works would only be in any one area for a period of no longer than a week.

Land use impacts during the operation of the proposal would be minimal as much of the land to be disturbed by the construction phase would be returned to its natural state after the pipeline is laid. Operation impacts would be associated with the maintenance of the pipeline which is considered to be of minimal impact. Another operational impact of the proposed pipeline is that land within the easement would have a limited development potential due to the location of the pipeline below ground and therefore limit the use of the land in the future.

Overall, the construction and operation of the pipeline would have minimal impacts to land use. Where impacts could potentially arise, mitigation measures would be implemented to further reduce the potential impacts.



9. References

Department of Planning, 2008. *Sydney to Canberra Corridor Strategy 2006-2031*.



Appendix A

Council Zoning Maps

Wingecaribee Local Environmental Plan 1989

Draft Wingecaribee Local Environmental Plan 2009

Goulburn Mulwaree Local Environmental Plan 2009

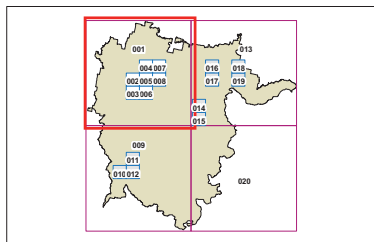
Land Zoning Map - Sheet LZN-001

Zone

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Business
B6	Enterprise Corridor
E1	National Parks & Nature Reserves
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
IN1	General Industrial
IN2	Light Industrial
IN3	Heavy Industrial
R1	General Residential
R2	Low Density Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU3	Forestry
RU5	Village
RU6	Transition
SP2	Infrastructure

Cadastre

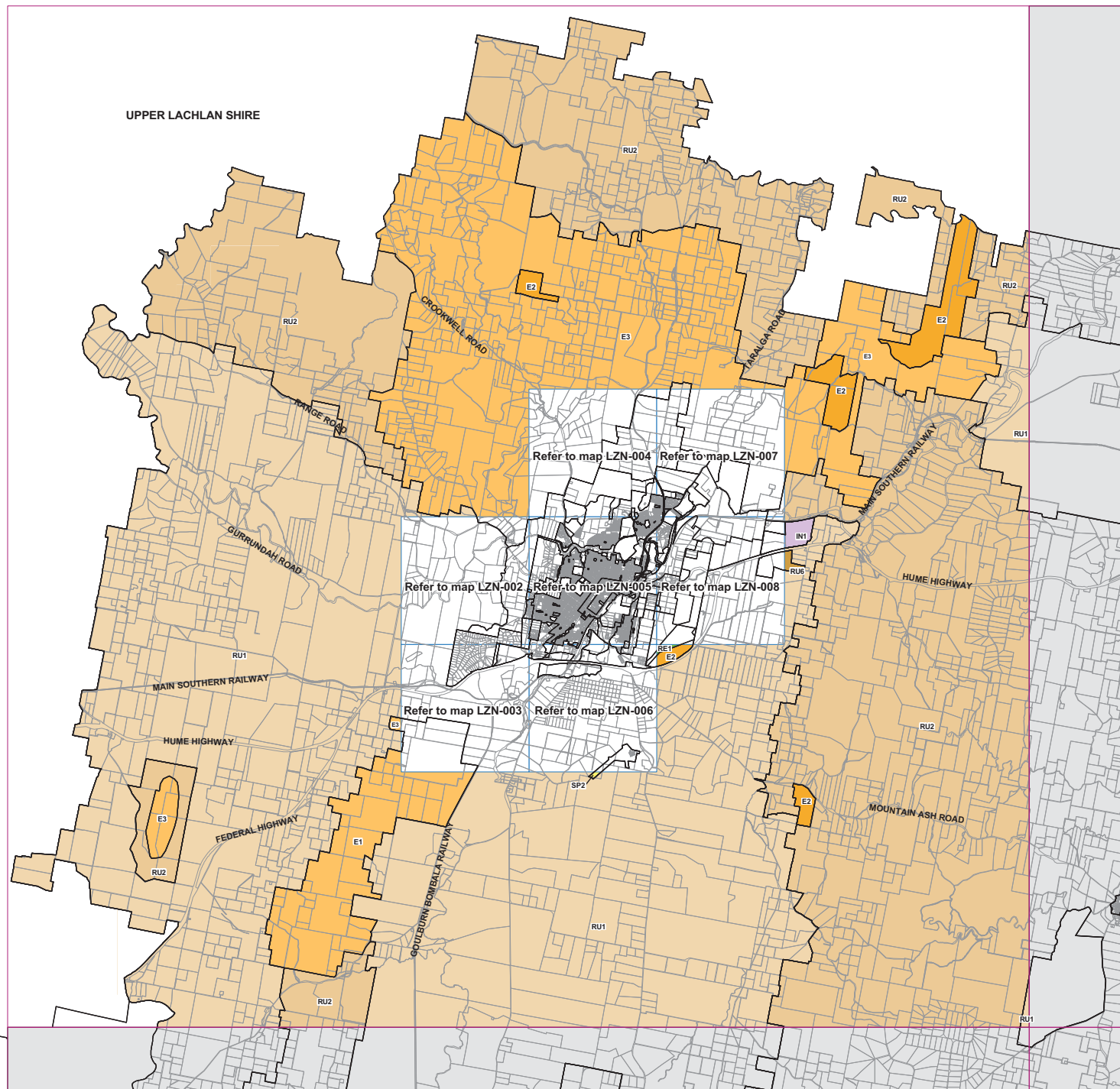
Cadastre 1/9/08 © Dept of Lands



Projection: GDA 1994
Zone 55

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METRES

Scale 1: 160000 @ A3



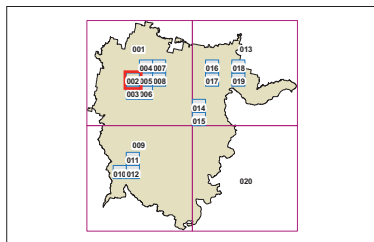
Land Zoning Map - Sheet LZN-002

Zone

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Business
B6	Enterprise Corridor
E1	National Parks & Nature Reserves
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
IN1	General Industrial
IN2	Light Industrial
IN3	Heavy Industrial
R1	General Residential
R2	Low Density Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU3	Forestry
RU5	Village
RU6	Transition
SP2	Infrastructure

Cadastre

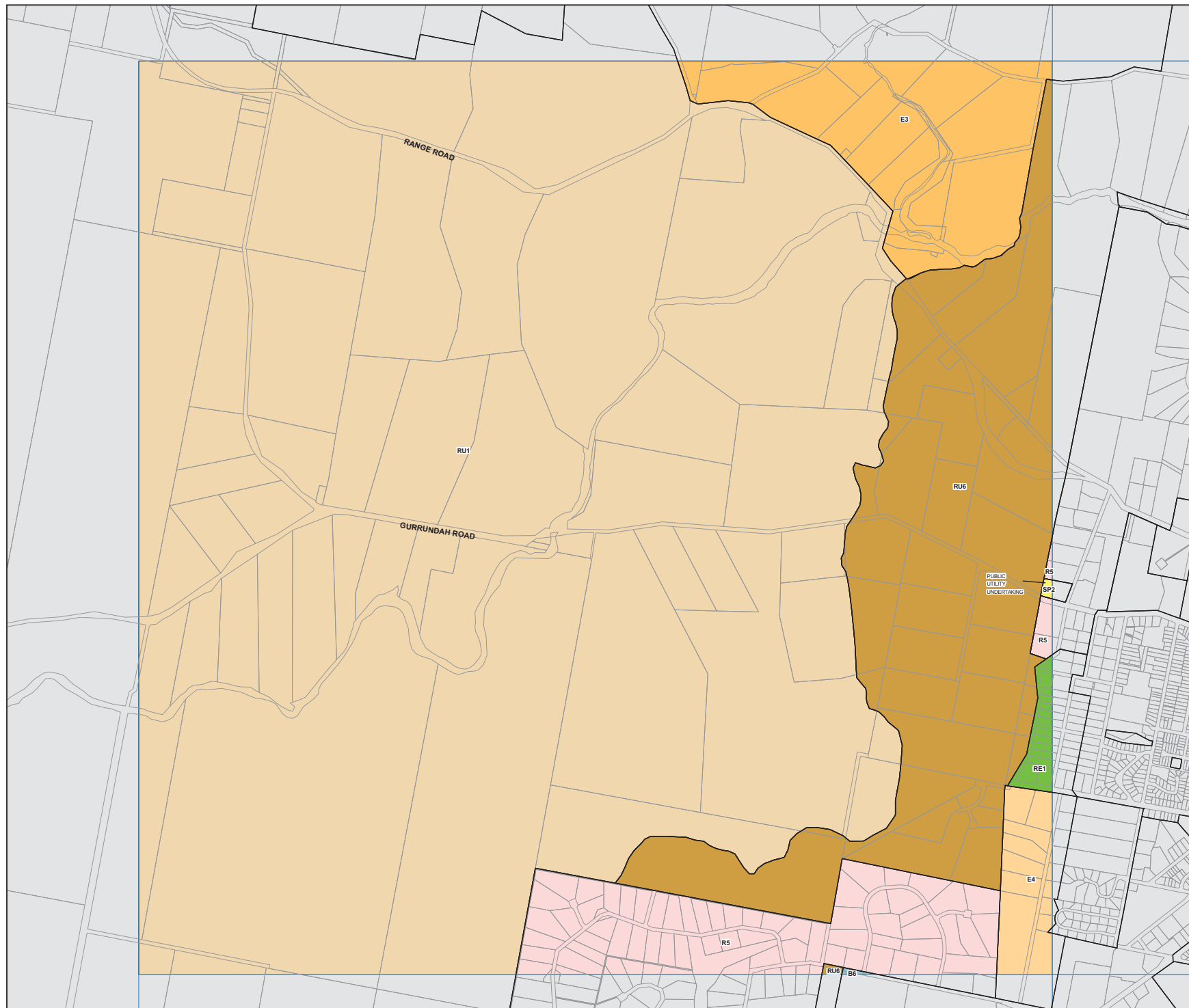
Cadastre 1/9/08 © Dept of Lands



Projection: GDA 1994
Zone 55

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METRES

Scale 1: 20000 @ A3



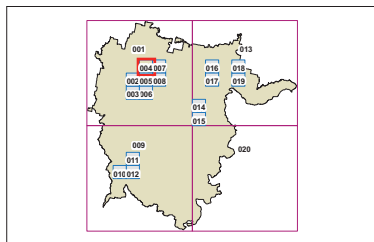
Land Zoning Map - Sheet LZN-004

Zone

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Business
B6	Enterprise Corridor
E1	National Parks & Nature Reserves
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
IN1	General Industrial
IN2	Light Industrial
IN3	Heavy Industrial
R1	General Residential
R2	Low Density Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU3	Forestry
RU5	Village
RU6	Transition
SP2	Infrastructure

Cadastre

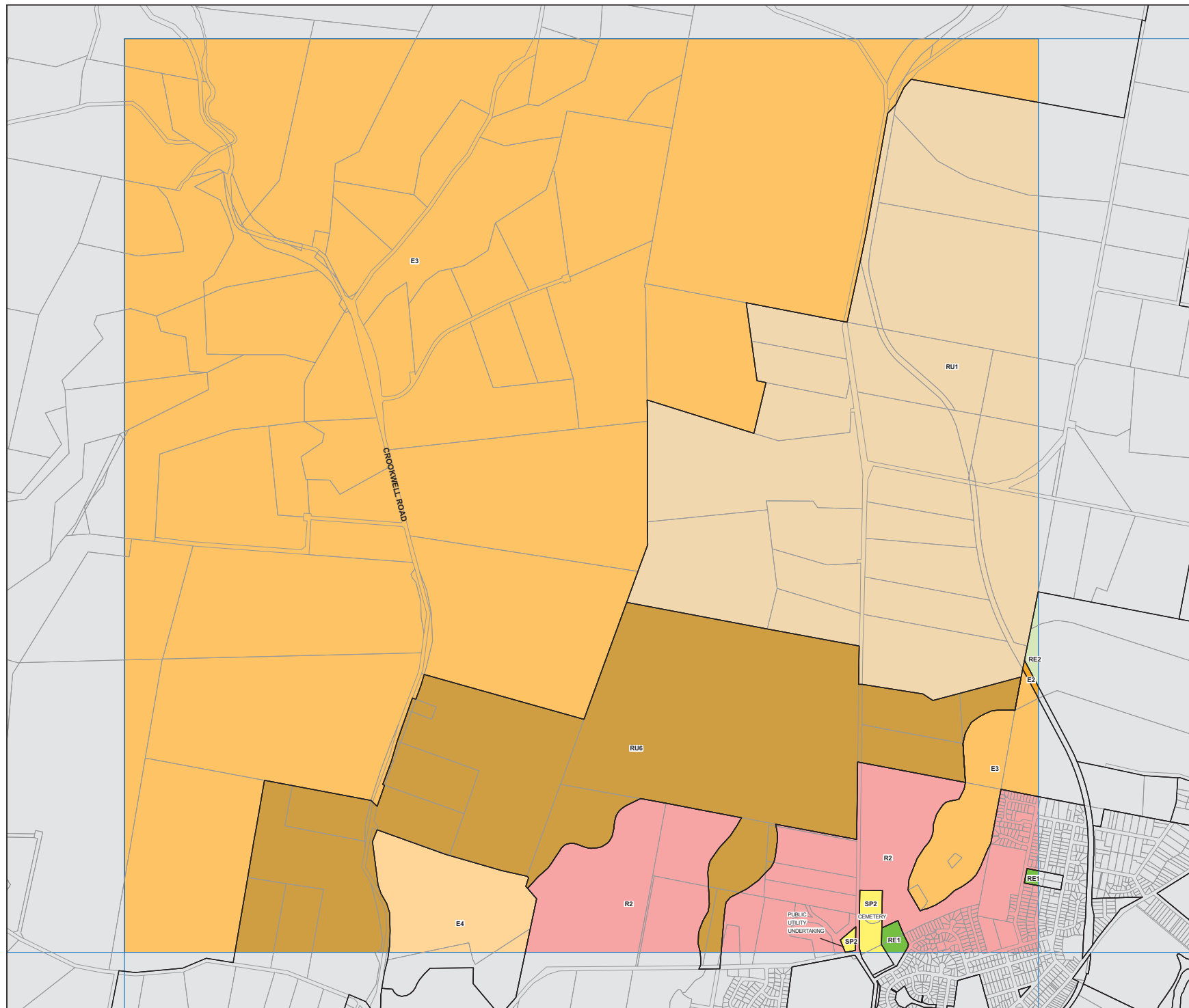
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Projection: GDA 1994
Zone 55



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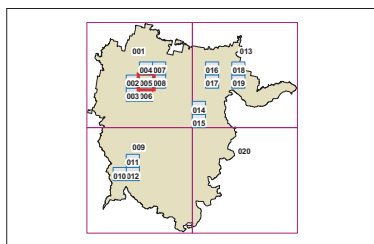
Land Zoning Map - Sheet LZN-005

Zone

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Business
B6	Enterprise Corridor
E1	National Parks & Nature Reserves
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
IN1	General Industrial
IN2	Light Industrial
IN3	Heavy Industrial
R1	General Residential
R2	Low Density Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU3	Forestry
RU5	Village
RU6	Transition
SP2	Infrastructure

Cadastre

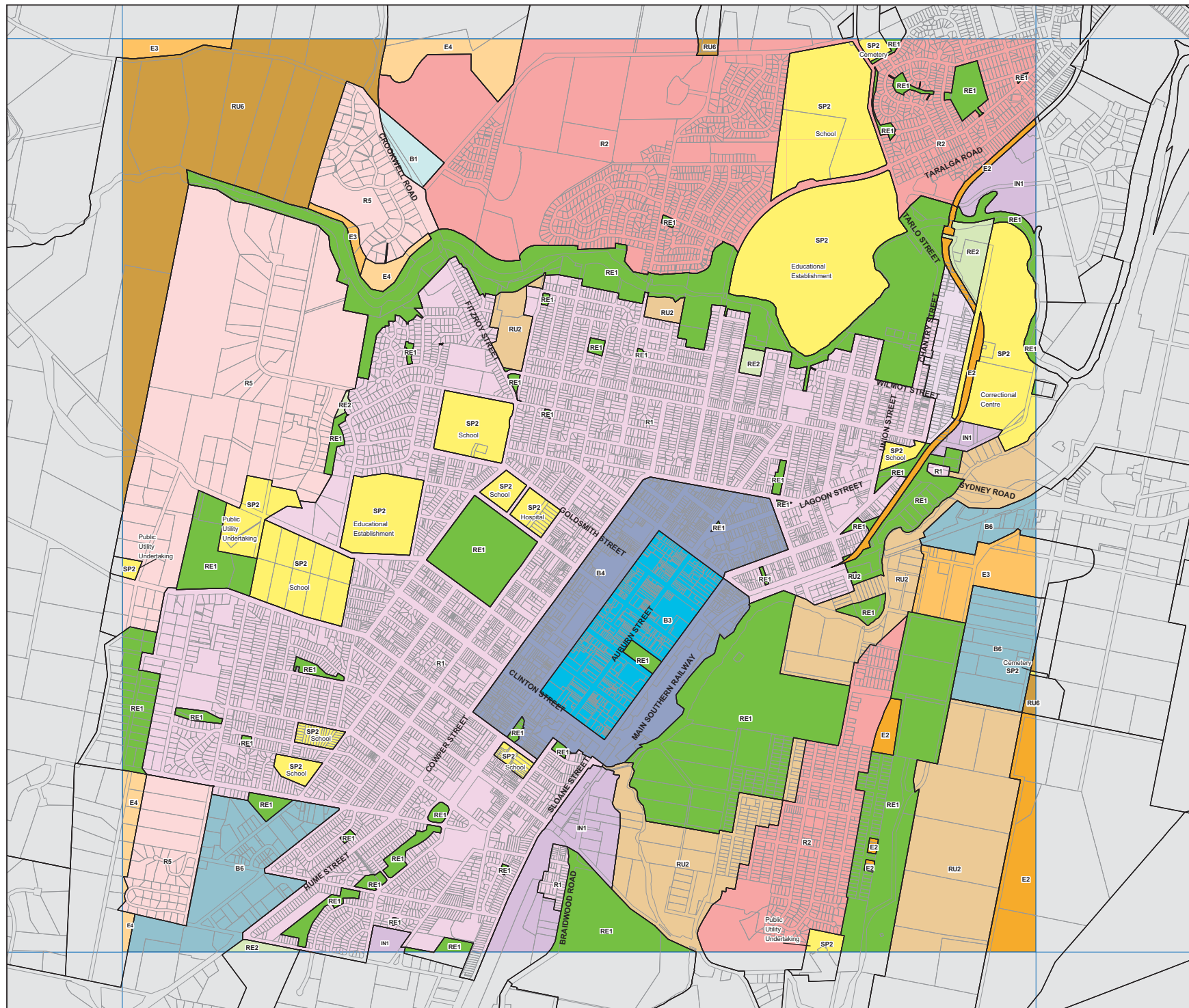
Cadastre 1/9/08 © Dept of Lands



Projection: GDA 1994
Zone 55

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METRES

Scale 1:20000 @ A3



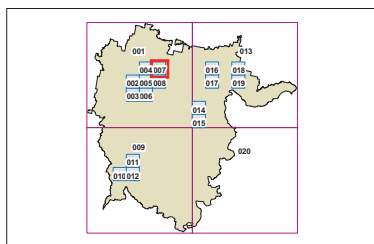
Land Zoning Map - Sheet LZN-007

Zone

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Business
B6	Enterprise Corridor
E1	National Parks & Nature Reserves
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
IN1	General Industrial
IN2	Light Industrial
IN3	Heavy Industrial
R1	General Residential
R2	Low Density Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU3	Forestry
RU5	Village
RU6	Transition
SP2	Infrastructure

Cadastre

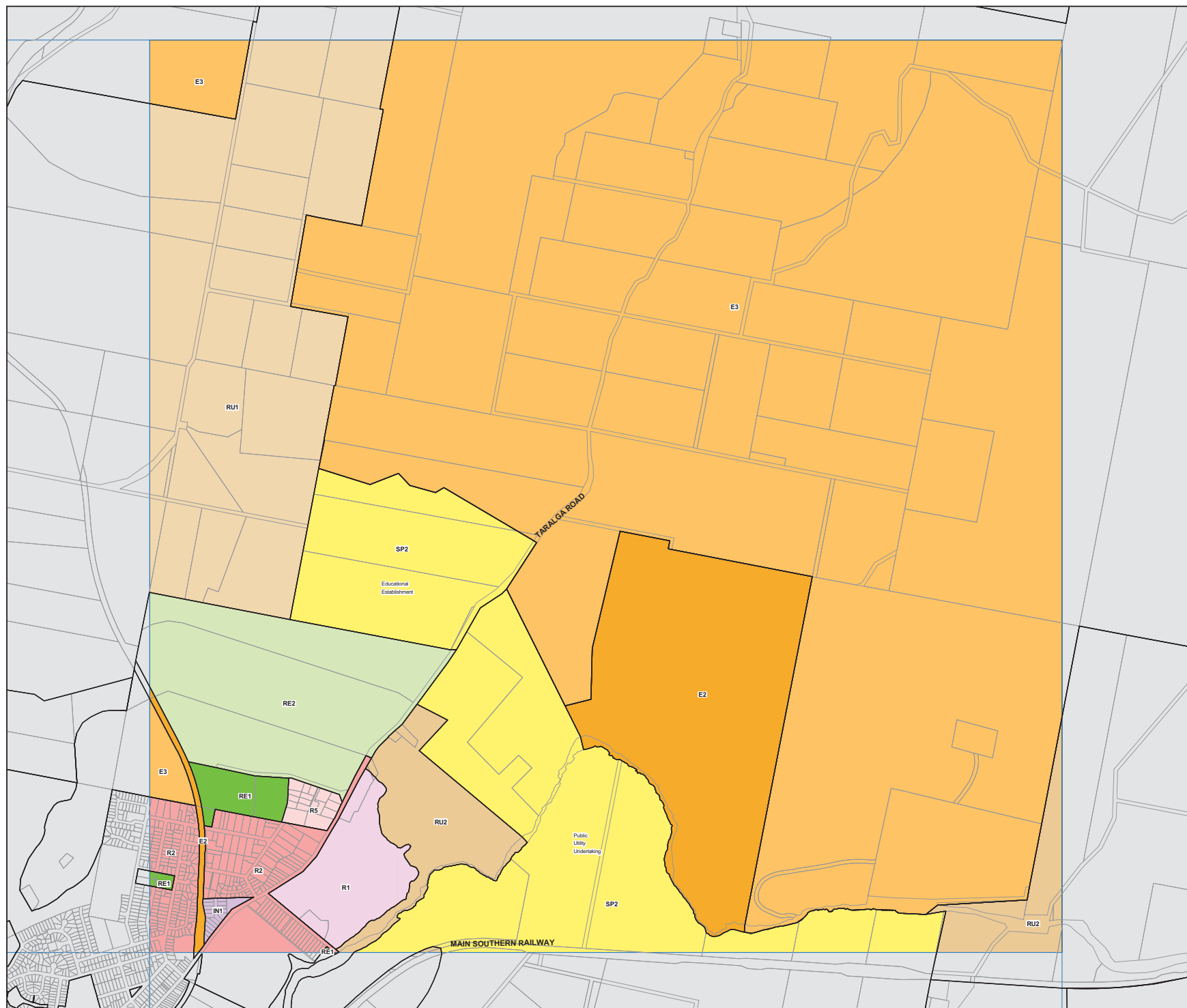
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Projection: GDA 1994
Zone 55

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Scale 1: 20000 @ A3



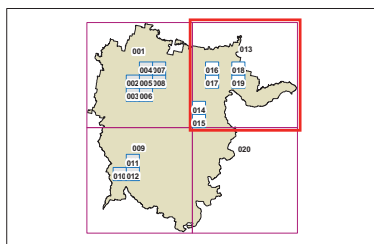
Land Zoning Map - Sheet LZN-013

Zone

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Business
B6	Enterprise Corridor
E1	National Parks & Nature Reserves
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
IN1	General Industrial
IN2	Light Industrial
IN3	Heavy Industrial
R1	General Residential
R2	Low Density Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU3	Forestry
RU5	Village
RU6	Transition
SP2	Infrastructure

Cadastre

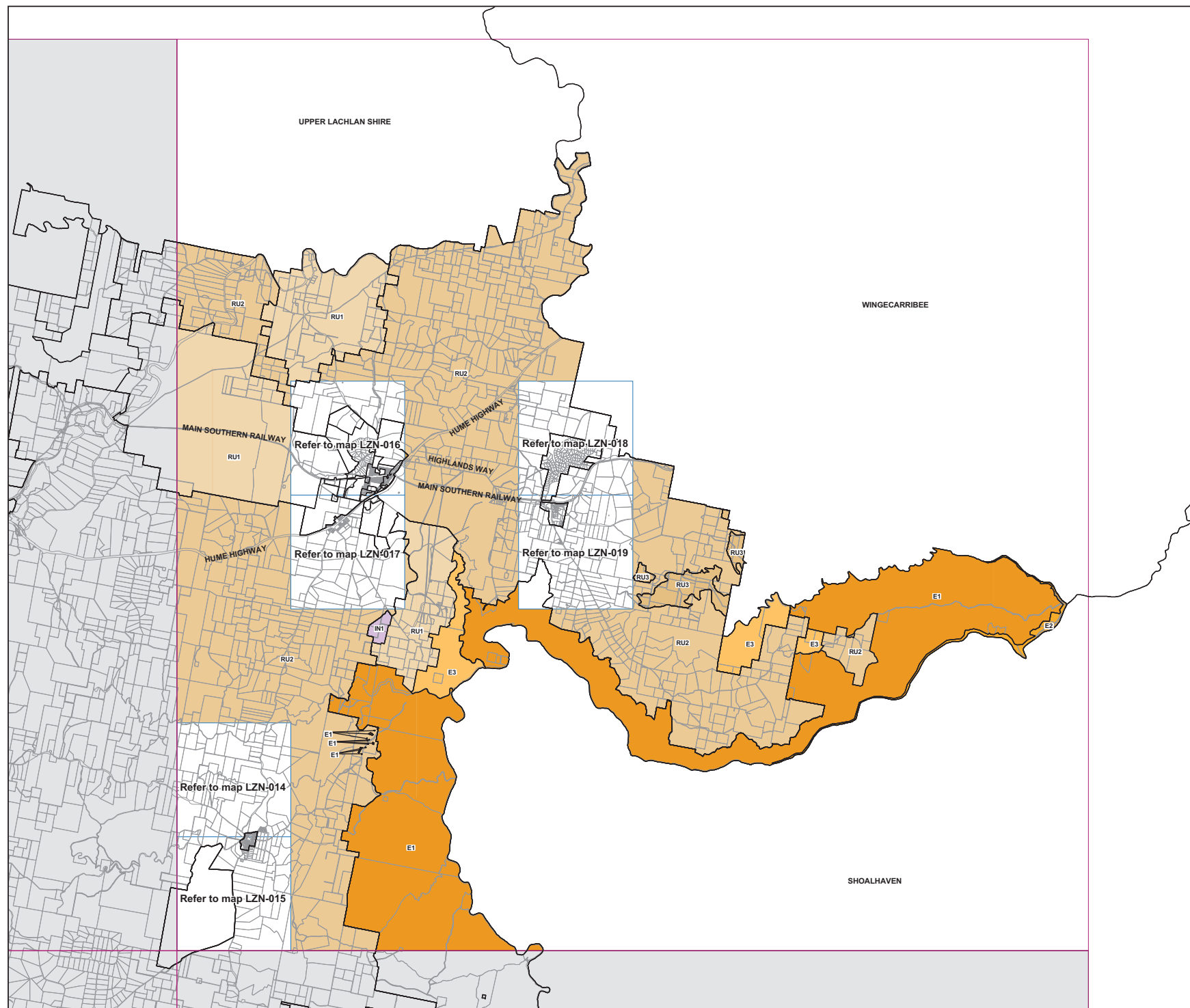
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Projection: GDA 1994
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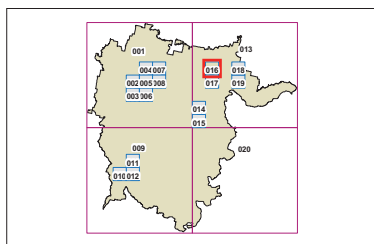
Land Zoning Map - Sheet LZN-016

Zone

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Business
B6	Enterprise Corridor
E1	National Parks & Nature Reserves
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
IN1	General Industrial
IN2	Light Industrial
IN3	Heavy Industrial
R1	General Residential
R2	Low Density Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU3	Forestry
RU5	Village
RU6	Transition
SP2	Infrastructure

Cadastre

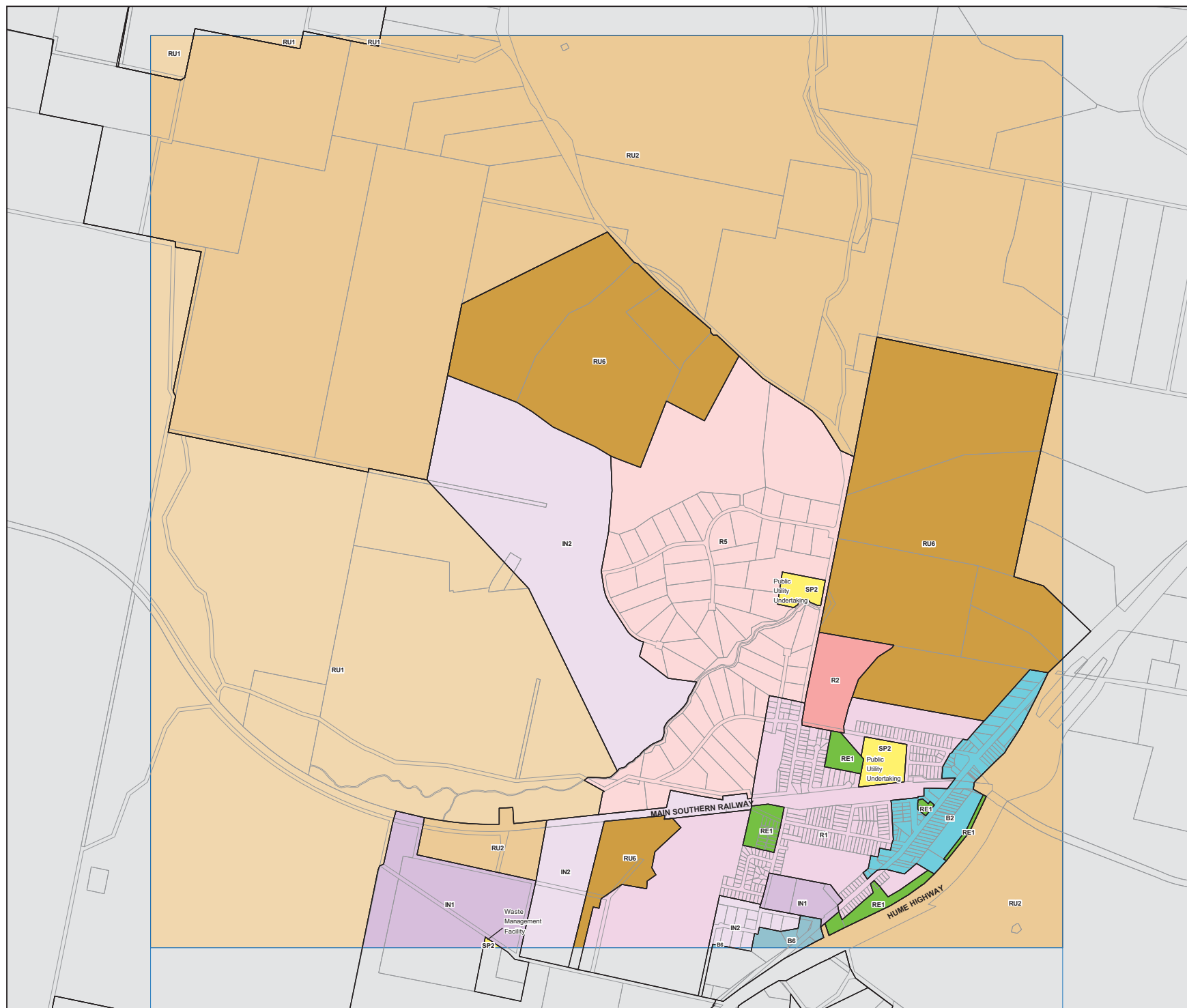
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Projection: GDA 1994
Zone 55

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METRES

Scale 1: 20000 @ A3



Legend

LAND CONTAINING EXTRACTIVE MINERALS	
Exploited in Class 35 WINDICATORIA LEP 1980	
ITEM OF ENVIRONMENTAL HERITAGE	
Exploited in Class 27 WINDICATORIA LEP 1980	
FIGURE INDUSTRIAL CORRIDOR Exploited in Class 41 WINDICATORIA LEP 1980	



[illegible]

Legend

PROPOSED ROAD WIDENING/REELIM ROAD	
ITEM OF ENVIRONMENTAL HERITAGE - <i>Revised</i> in Class 27 Widenings/L.E. 1989	
CLAS 41 Widenings/L.E. 1989	
FUTURE INDUSTRIAL CORRIDOR - <i>Revised</i> in	

INSET 2

SCALE 1:1,000

RIVER

ROAD

SETBACK

[illegible]

Map showing ship berths and associated ship names and dates. The map includes labels for 'A' through 'Z' along the waterfront. Ship names and dates are listed next to the berths. For example, 'OLEP 2647/98' is listed for berth 'A'. Other ships include 'OLEP 2648/98', 'OLEP 2649/98', 'OLEP 2650/98', 'OLEP 2651/98', 'OLEP 2652/98', 'OLEP 2653/98', 'OLEP 2654/98', 'OLEP 2655/98', 'OLEP 2656/98', 'OLEP 2657/98', 'OLEP 2658/98', 'OLEP 2659/98', 'OLEP 2660/98', 'OLEP 2661/98', 'OLEP 2662/98', 'OLEP 2663/98', 'OLEP 2664/98', 'OLEP 2665/98', 'OLEP 2666/98', 'OLEP 2667/98', 'OLEP 2668/98', 'OLEP 2669/98', 'OLEP 2670/98', 'OLEP 2671/98', 'OLEP 2672/98', 'OLEP 2673/98', 'OLEP 2674/98', 'OLEP 2675/98', 'OLEP 2676/98', 'OLEP 2677/98', 'OLEP 2678/98', 'OLEP 2679/98', 'OLEP 2680/98', 'OLEP 2681/98', 'OLEP 2682/98', 'OLEP 2683/98', 'OLEP 2684/98', 'OLEP 2685/98', 'OLEP 2686/98', 'OLEP 2687/98', 'OLEP 2688/98', 'OLEP 2689/98', 'OLEP 2690/98', 'OLEP 2691/98', 'OLEP 2692/98', 'OLEP 2693/98', 'OLEP 2694/98', 'OLEP 2695/98', 'OLEP 2696/98', 'OLEP 2697/98', 'OLEP 2698/98', 'OLEP 2699/98', 'OLEP 2700/98'. The map also shows the 'Port of Los Angeles' and 'Long Beach' areas.

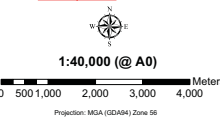
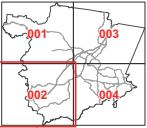
The map shows the San Gabriel River flowing from the top left towards the center, where it is dammed by the San Gabriel Dam. The river continues as the Los Angeles River towards the bottom right. The area around the dam and river is labeled with various codes and text, including 'SAN GABRIEL RIVER', 'SAN GABRIEL DAM', 'LOS ANGELES', 'INDUSTRIAL', 'FUTURE', 'CORRIDOR', and '7 (b)'. The map is oriented with North at the top.



**DRAFT WINGECARRIBEE
LOCAL ENVIRONMENTAL PLAN
2009**

Land Zoning Map - sheet LZN-002

- Draft LEP Zones**
- Rural Zones**
- RU1 Primary Production
 - RU2 Rural Landscape
 - RU3 Forestry
 - RU4 Rural Small Holdings
- Residential Zones**
- R2 Low Density Residential
 - R3 Medium Density Residential
 - R4 High Density Residential
 - R5 Large Lot Residential
- Business Zones**
- B1 Neighbourhood Centre
 - B2 Local Centre
 - B4 Mixed Use
 - B5 Business Development
 - B7 Business Park
- Industrial Zones**
- I1 General Industrial
 - I2 Light Industrial
 - I3 Heavy Industrial
- Special Purpose Zones**
- SP1 Special Activities
 - SP2 Infrastructure
 - SP3 Tourist
- Recreation Zones**
- RE1 Public Recreation
 - RE2 Private Recreation
- Environment Protection Zones**
- E1 National Parks and Nature Reserves
 - E2 Environmental Conservation
 - E3 Environmental Management
 - E4 Environmental Living
- Extractive Materials**
- Identified And Potential Extractive Material
 - Identified and Potential Extractive Material - Buffer Zone
- Schedules**
- Main Rivers
 - Cadastrate



Map identification number:
8350-COM-LZN-002-040-160209

**ENVIRONMENTAL PLANNING AND
ASSESSMENT ACT, 1979**

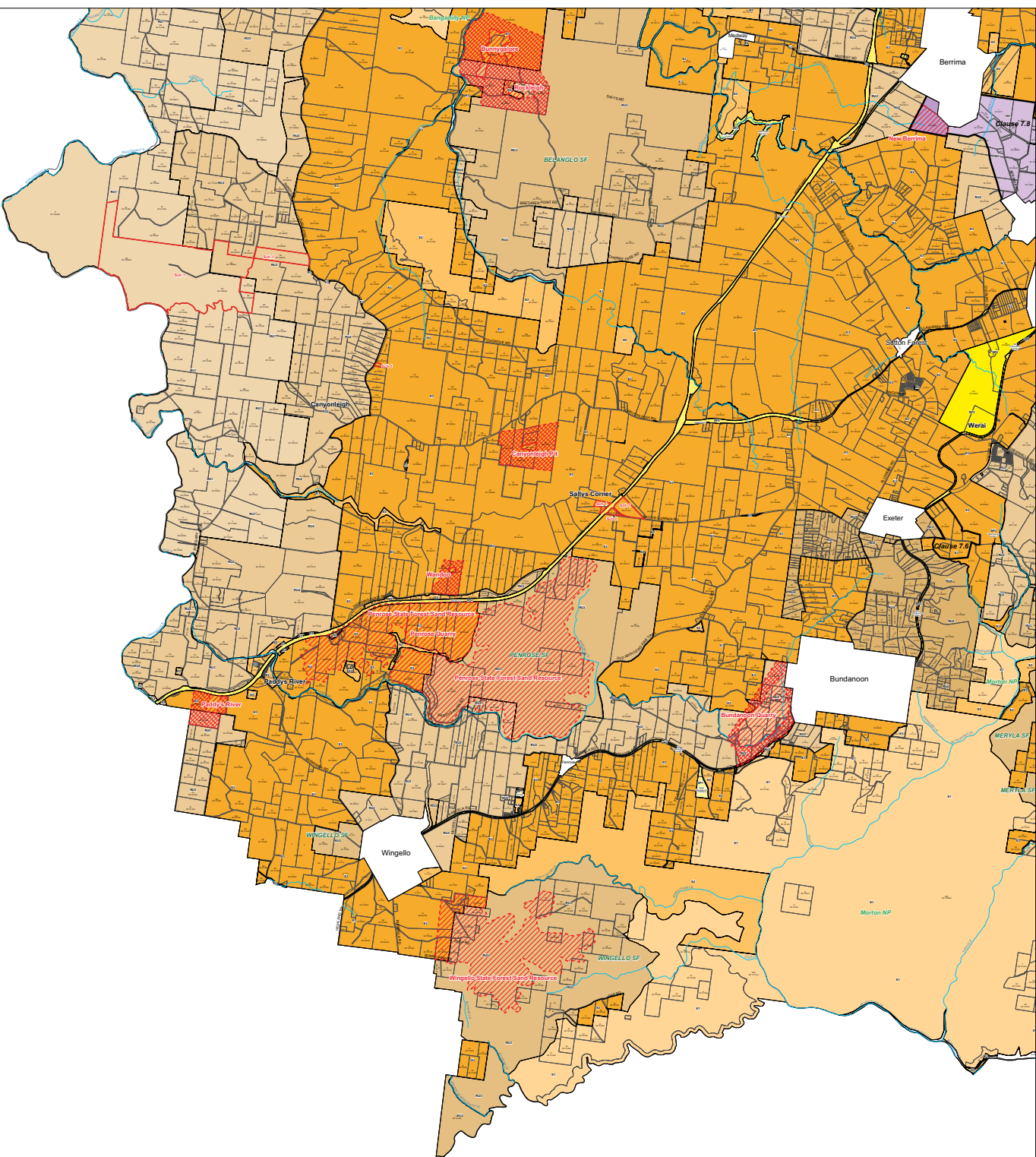
This map should be read in conjunction with the
Wingecarribee L.E.P. 2009 & Schedule of Amendments.

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ENVIRONMENTAL PLANNING AND ASSESSMENT
ACT, 1979 (AS AMENDED) AND REGULATIONS**

GENERAL MANAGER DATE

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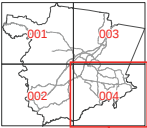




DRAFT WINGECARRIBEE
LOCAL ENVIRONMENTAL PLAN
2009

Land Zoning Map - sheet LZN-004

- Draft LEP Zones
- Rural Zones
- RU1 Primary Production
 - RU2 Rural Landscape
 - RU3 Forestry
 - RU4 Rural Small Holdings
- Residential Zones
- R1 Low Density Residential
 - R2 Medium Density Residential
 - R3 High Density Residential
 - R4 Large Lot Residential
- Business Zones
- B1 Neighbourhood Centre
 - B2 Local Centre
 - B3 Mixed Use
 - B4 Business Development
 - B5 Business Park
- Industrial Zones
- I1 General Industrial
 - I2 Light Industrial
 - I3 Heavy Industrial
- Special Purpose Zones
- SP1 Special Activities
 - SP2 Infrastructure
 - SP3 Tourism
- Recreation Zones
- RE1 Public Recreation
 - RE2 Private Recreation
- Environment Protection Zones
- E1 National Parks and Nature Reserves
 - E2 Environmental Conservation
 - E3 Environmental Management
 - E4 Environmental Living
- Schedules
- Extractive Materials
- Identified And Potential Extractive Material
 - Identified and Potential Extractive Material - Buffer Zone
- Clauses
- Main Rivers
 - Cadastral



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0 500 1,000 2,000 3,000 4,000 Meters

Projection: MGA (GDA84) Zone 56

Map identification number:

8350-COM-LZN-004-040-160209

ENVIRONMENTAL PLANNING AND
ASSESSMENT ACT, 1979

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ACT, 1979 (AS AMENDED) AND REGULATIONS

GENERAL MANAGER

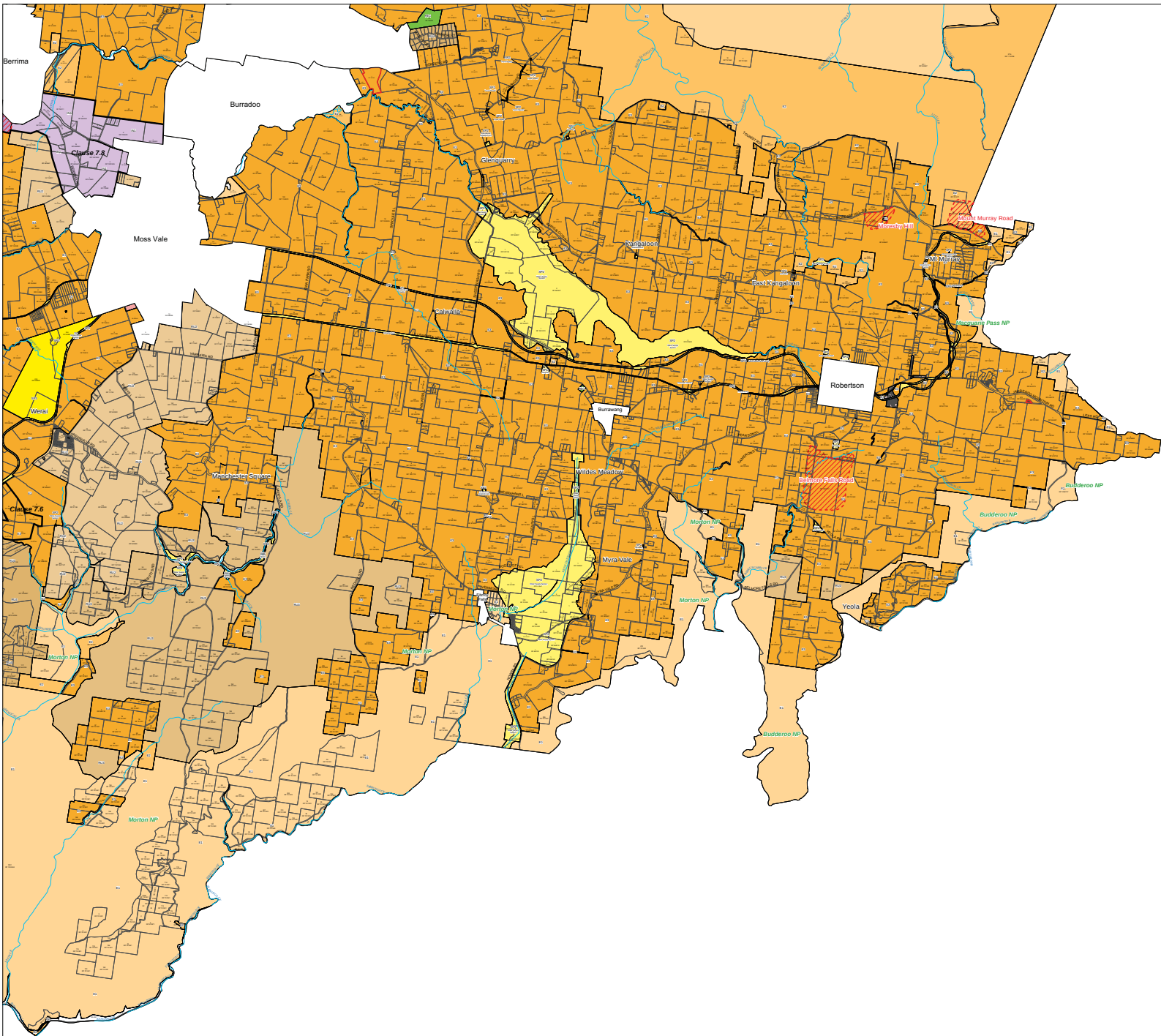
DATE

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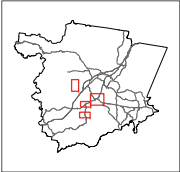




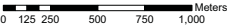
DRAFT WINGECARRIBEE
LOCAL ENVIRONMENTAL PLAN
2009

Land Zoning Map - sheet LZN-008

- Draft LEP Zones
- Rural Zones**
- RU1 Primary Production
 - RU2 Rural Landscape
 - RU3 Forestry
 - RU4 Rural Small Holdings
- Residential Zones**
- R2 Low Density Residential
 - R3 Medium Density Residential
 - R4 High Density Residential
 - R5 Large Lot Residential
- Business Zones**
- B1 Neighbourhood Centre
 - B2 Local Centre
 - B4 Mixed Use
 - B5 Business Development
 - B7 Business Park
- Industrial Zones**
- IN1 General Industrial
 - IN2 Light Industrial
 - IN3 Heavy Industrial
- Special Purpose Zones**
- SP1 Special Activities
 - SP2 Infrastructure
 - SP3 Tourist
- Recreation Zones**
- RE1 Public Recreation
 - RE2 Private Recreation
- Environment Protection Zones**
- E1 National Parks and Nature Reserves
 - E2 Environmental Conservation
 - E3 Environmental Management
 - E4 Environmental Living
- Clauses**
- Schedule 1 - Additional Use
 - Cadastral



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Projection: MGA (GDA94) Zone 56

Map identification number:
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ENVIRONMENTAL PLANNING AND
ASSESSMENT ACT, 1979

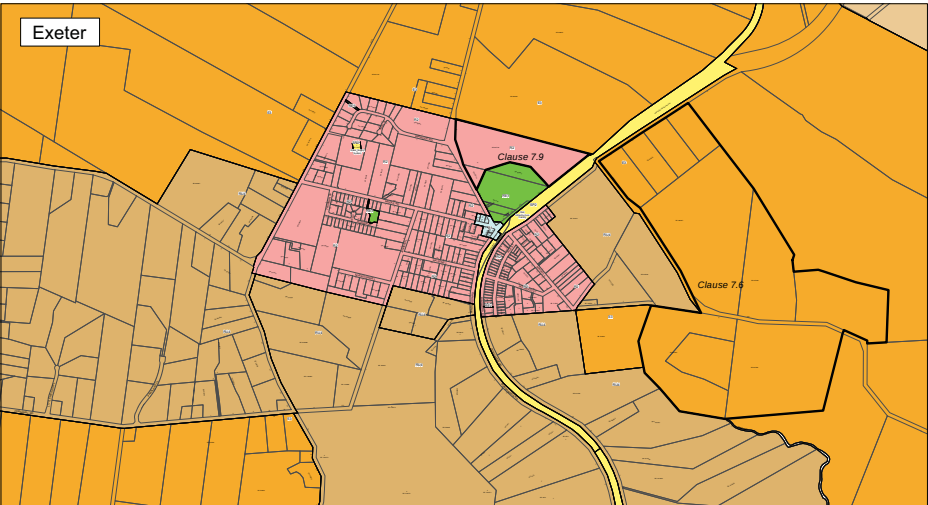
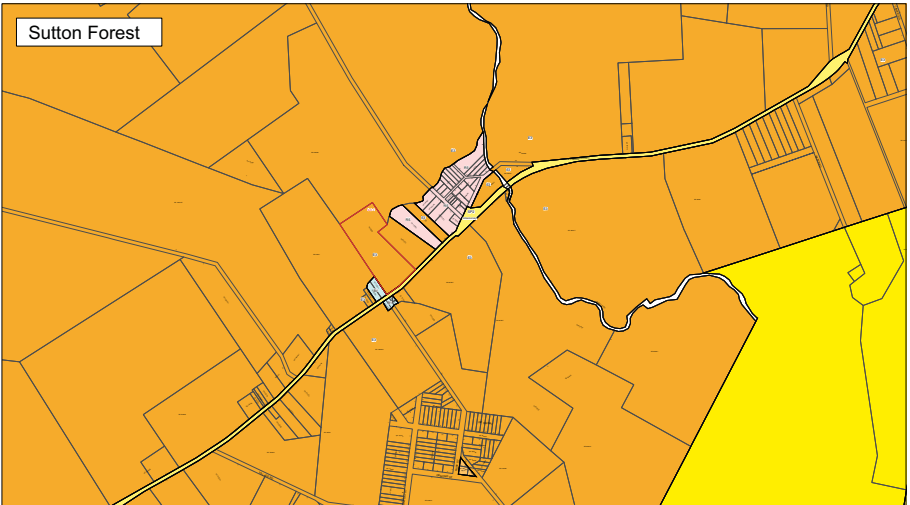
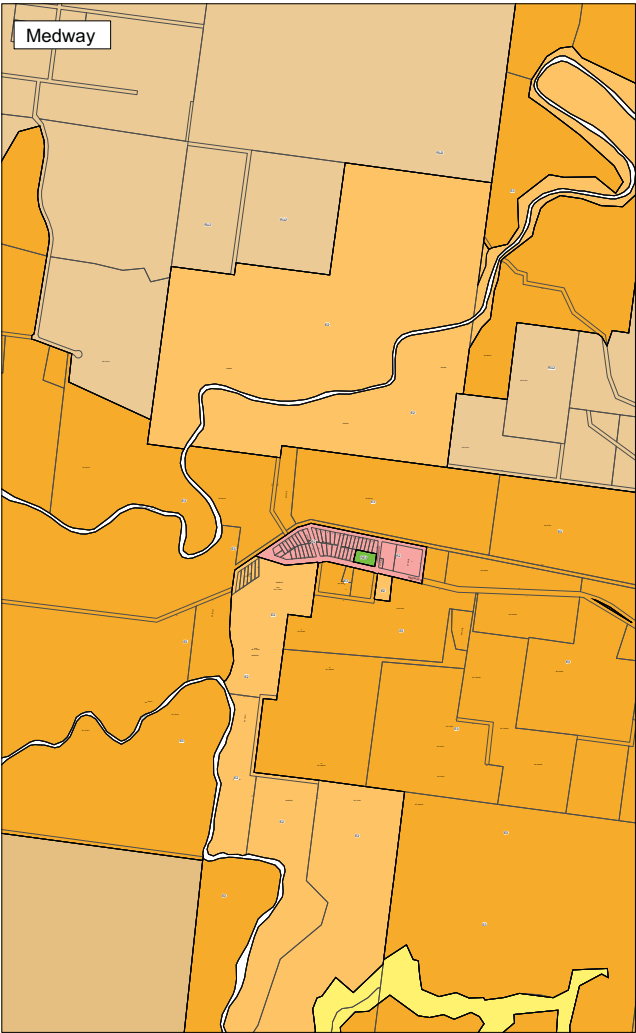
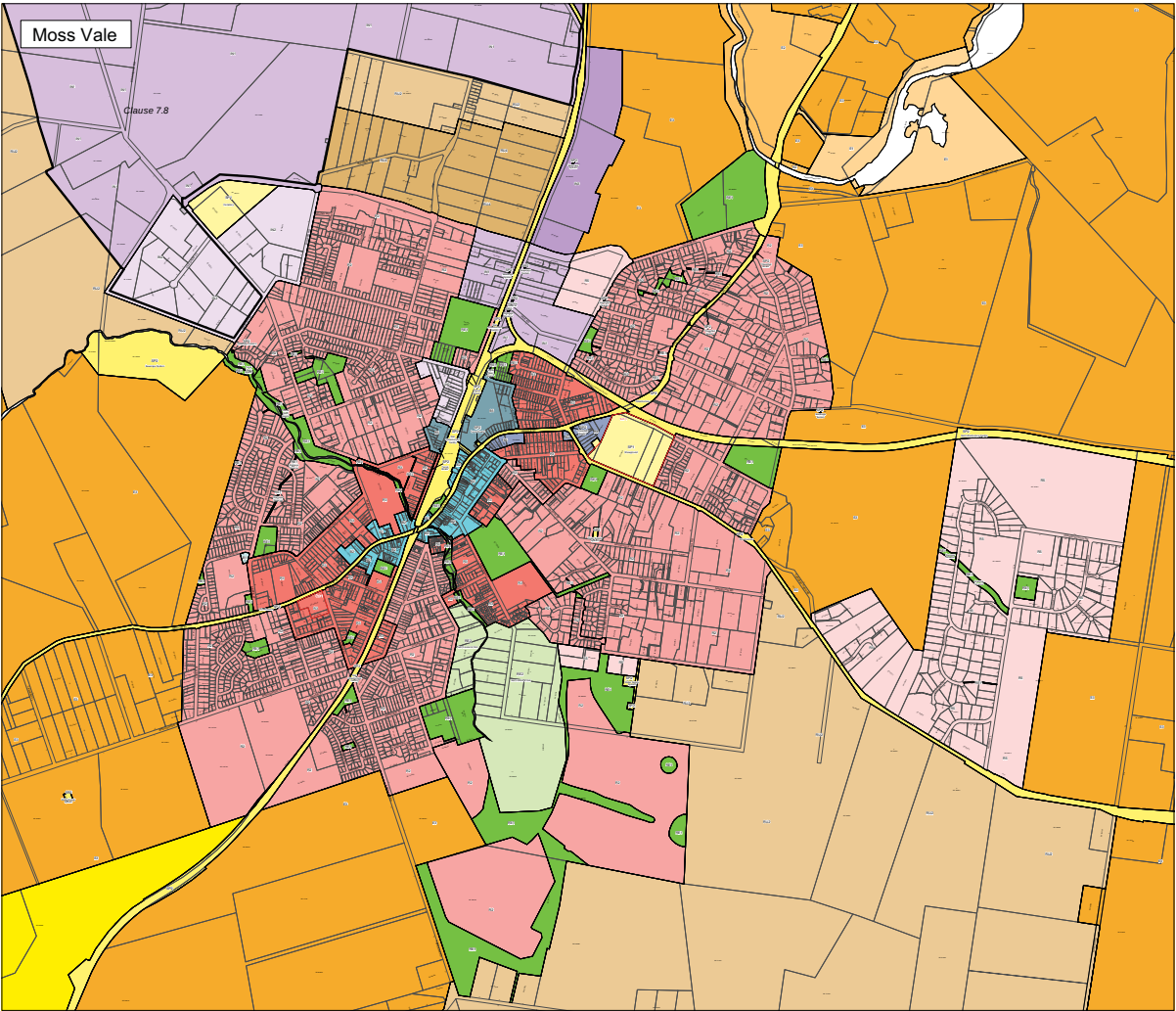
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ACT, 1979 (AS AMENDED) AND REGULATIONS

GENERAL MANAGER DATE

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GIS SECTION, INFORMATION TECHNOLOGY BRANCH

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Appendix B

Environmental Risk Assessment Tables



Consequence Table

Aspect	Insignificant	Minor	Moderate	Major	Catastrophic
<i>Land use planning impacts</i>	Land use changes resulting in consistency with planning policies	Land use changes result in minor inconsistency with planning policies	Land use changes result in significant inconsistency with local planning policies	Land use changes result in significant inconsistency with state planning policies	Land use changes result in complete inconsistency with planning policies

Likelihood Table

Likelihood	Description
Almost Certain	The event is expected to occur in most circumstances
Likely	The event will probably occur in most circumstances
Possible	The event could occur
Unlikely	The event could occur but not expected
Rare	The event occurs only in exceptional circumstances

Risk Matrix

Likelihood Level	Consequence Level				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	Low	Medium	High	Extreme	Extreme
Likely	Low	Medium	High	High	Extreme
Possible	Negligible	Low	Medium	High	High
Unlikely	Negligible	Low	Medium	Medium	High
Rare	Negligible	Negligible	Low	Medium	Medium



Environmental Risk Register – Land Use

Risk No	Risk Pathway Description (how the project interacts with assets, values and uses)	Description of Consequences	Planned Controls to Manage Risk (as per Project Description)	Risk Assessment (Control)			Additional Controls Recommended to Reduce Risk	Treated Risk Assessment		
				Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating
1	Construction on agricultural land impacting on the existing use of the land	Temporary changes to the use of agricultural land. <i>Reduction in available land that can be used for agricultural purposes</i>		Minor	Possible	Low		Minor	Possible	Low
2	Construction across single properties.	Severance of agricultural land. <i>Land being split into two components, with access between these components being not possible or limited</i>		Moderate	Possible	Medium	Construction works to not be undertaken across entire properties, resulting in severance. Works to be undertaken in stages, to allow access across land at all times	Minor	Unlikely	Low
3	Construction of the project requires removal of existing stock fences	Stock can escape onto neighbouring properties. <i>Resulting in a loss to stock owners</i>		Moderate	Possible	Medium	Temporary fencing to be erected around work area, ensuring connection into boundary fencing prior to removal or impacts to boundary fences.	Moderate	Rare	Low



4	Construction on non-agricultural land impacting on the existing use of the land	Temporary changes to use of non-agricultural land. <i>Limit on the use of land for non-agricultural land</i>		Moderate	Rare	Low		Moderate	Rare	Low
5	Construction of the pipeline in a location which results in long term impacts to existing land use	Long term impacts to existing non-agricultural land. <i>Existing land use no longer possible during operation of the proposal</i>	Rehabilitation and Maintenance of all disturbed areas	Moderate	Rare	Low		Moderate	Rare	Low
6	Operation of the pipeline resulting in land being undevelopable due to below ground infrastructure	Loss of ability to develop the land. <i>Amount of land considered to be developable is reduced</i>	Compensation for the easement across the land	Insignificant	Almost certain	Low		Insignificant	Almost certain	Low



GHD

133 Castlereagh St Sydney NSW 2000

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T: 2 9239 7100 F: 2 9239 7199 E: sydmail@ghd.com.au

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