

16. Land use

This chapter provides a summary of the land use impacts associated with the project. A copy of the full report is included in Appendix J.

16.1 Methodology

The following tasks were undertaken to assess the impact of the Project on land use:

- Review of the existing land use environment through a review of zoning plans, topographic maps, aerial photography and results of a site visit;
- Identification of the potential impacts of the main features of the Project on land use;
- Determine the consistency of the Project with existing plans and strategies that govern land use; and
- Recommend any mitigation measures as appropriate.

16.2 Existing environment

16.2.1 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.

16.2.2 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 one 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 one 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.

16.2.3 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 m to the north of the proposed pipeline and the Service Centre located on the Hume Highway 200 m 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.

16.2.4 Paddy's River and Marulan Sectors

Some land in the Paddys 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 one 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.

16.2.5 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.

16.2.6 Goulburn Sector

In the vicinity of Goulburn there are two alignment options. Land uses in the vicinity of each of these options are 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 m 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 m 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 m to the east of the proposed pipeline. A built-up low density residential area is located approximately 200 m to the south of the existing WTP.

16.2.7 Sensitive receivers

The main sensitive receivers in the vicinity of activities required for the construction and operation phases of the Project are mostly residential dwellings located along the corridor. Residential dwellings along the proposed pipeline are typically located on rural properties, with the exception of some rural residential properties located in the vicinity of Goulburn and Exeter and a small collection of standard residential lots located adjacent to the proposed pipeline corridor near Moss Vale and Goulburn. Overall the number of residential properties that would be located along the alignment is relatively low.

Approximately 40 dwellings are located within 100 m of the proposed pipeline alignment, with 16 of these located within 50 m. Two dwellings are located approximately 10 m from the pipeline 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.

Figure 16.1 shows the location of dwellings within 100 m of the proposed pipeline corridor.

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

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

Figure 16.1 also shows the location of non-residential sensitive receptors located adjacent to the proposed pipeline route.

16.2.8 Environmentally sensitive areas

The proposed pipeline route intersects two regional biodiversity corridors within the HNCMA jurisdiction. Regional corridors or pathways aim to link primary landscape features and large areas of similar habitat. Examples include: linking lower slopes to highland communities, coastal plains to escarpment forests, and providing a bridge between sandstone plateaus. The inclusion of altitudinal and latitudinal grades, such as from valley floor to Mountain top and north and south along upland plateaus, provides linkages for altitudinal and seasonal migration and allows for adjustments relating to climatic and evolutionary change. A network of regional corridors provides habitat continuity enabling re-colonisation or dispersal after fire or continued drought (HNCMA, 2008).

The proposed pipeline route intersects the Abercrombie River to Morton National Park Regional Biodiversity Corridor (RBC) 15 km from Goulburn around the Murrays Flats and Nattery Hill areas towards the western end of the pipeline. The Abercrombie River to Morton National Park RBC covers a latitudinal expanse that connects the Nattai Sandstone landscape and Bargo area with the sandstone country of Morton National Park.

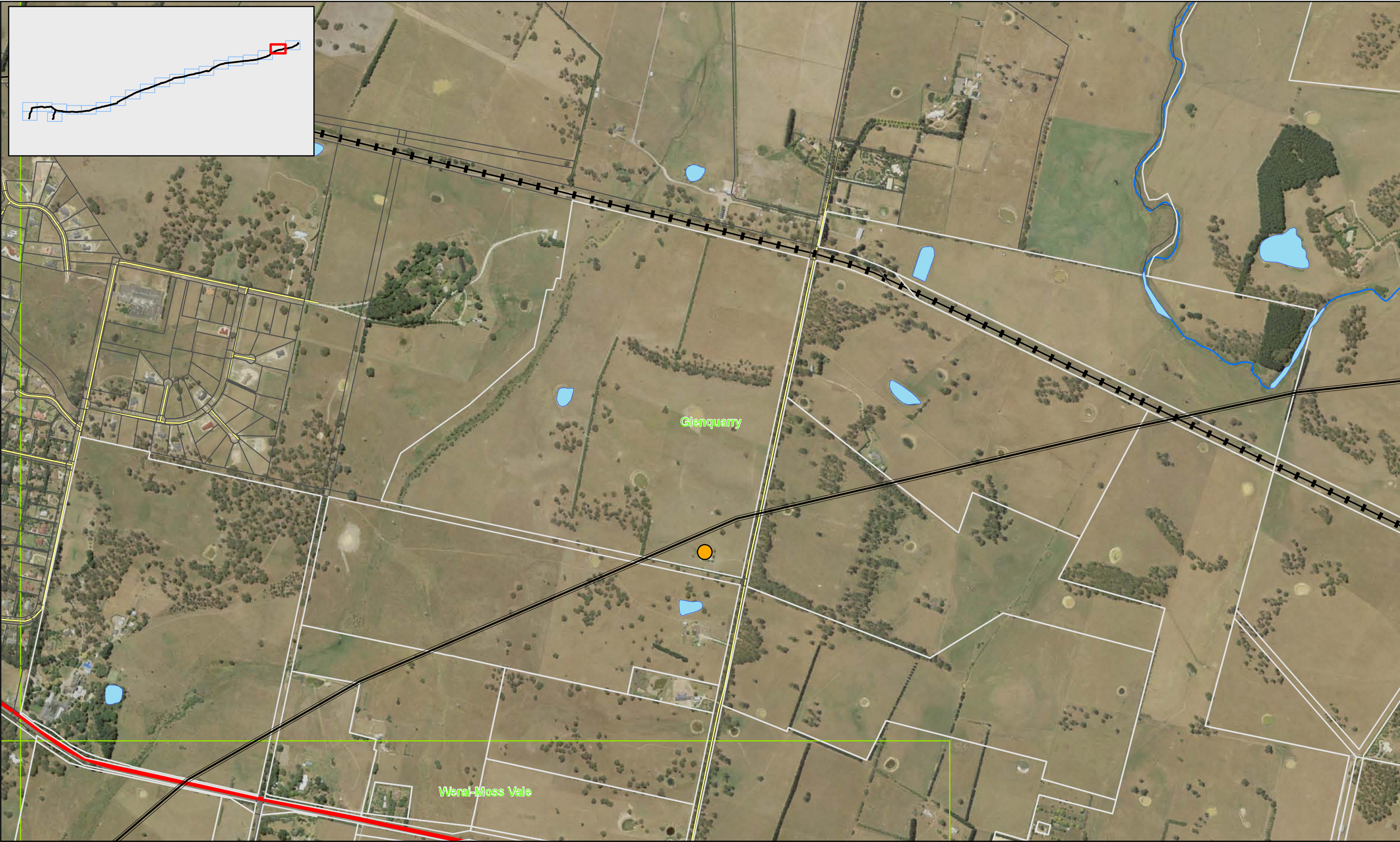
The proposed pipeline route also intersects the Bargo to Morton National Park Regional Biodiversity Corridor approximately 20 km Wingecarribee Reservoir around the Penrose State Forest within the

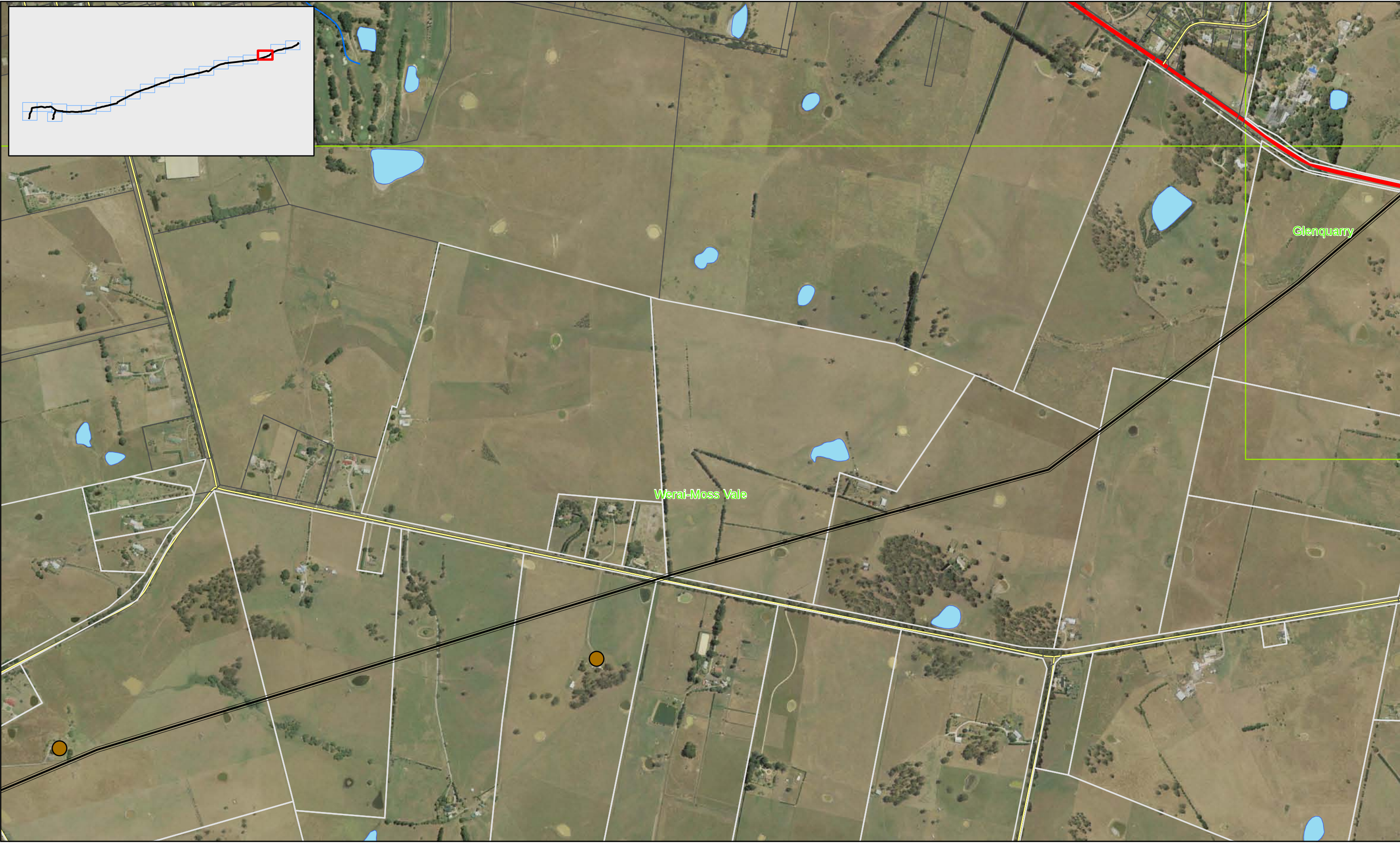


eastern section of the pipeline. The Bargo to Morton National Park RBC connects the highland communities of the Blue Mountains with those in Morton National Park. Contains an east west altitudinal and rainfall gradient that connects dry country to moist and rises from the south-western slopes to the Mountain Highlands.

The pipeline runs also immediately to the north of the Penrose State Forest which is currently subject to logging.







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Metres

N

LEGEND

● Locality

— Proposed Route (29/11/2009)

— Properties Intersected By Corridor

— Cadastre

● Residential dwelling

● Less than 10m

● 10m - 20m

● 20m - 50m

● Greater than 50m

— River/Creek

— Railways

— Primary Road

— Arterial Road

— Sub Arterial Road

— Local Road

— Hydro Area

— Sector boundary

CLIENTS | PEOPLE | PERFORMANCE

Goulburn Mulwaree Council

Goulburn Mulwaree Council

Highlands Source Project

Location of Sensitive Receptors

Within 100m of Pipeline Alignment

Sector: Werai-Moss Vale

Job Number

Revision

Date

23-13312

0

30 MAR 2010

Figure 16.1-C

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Metres

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LEGEND

● Locality

— Proposed Route (29/11/2009)

— Properties Intersected By Corridor

— Cadastre

● Residential dwelling

● Less than 10m

● 10m - 20m

● 20m - 50m

● Greater than 50m

— River/Creek

— Railways

— Primary Road

— Arterial Road

— Sub Arterial Road

— Local Road

— Hydro Area

— Sector boundary

CLIENTS | PEOPLE | PERFORMANCE

Goulburn Mulwaree Council

Goulburn Mulwaree Council

Highlands Source Project

Location of Sensitive Receptors

Within 100m of Pipeline Alignment

Sector: Wera-Moss Vale

Job Number

23-13312

Revision

0

Date

30 MAR 2010

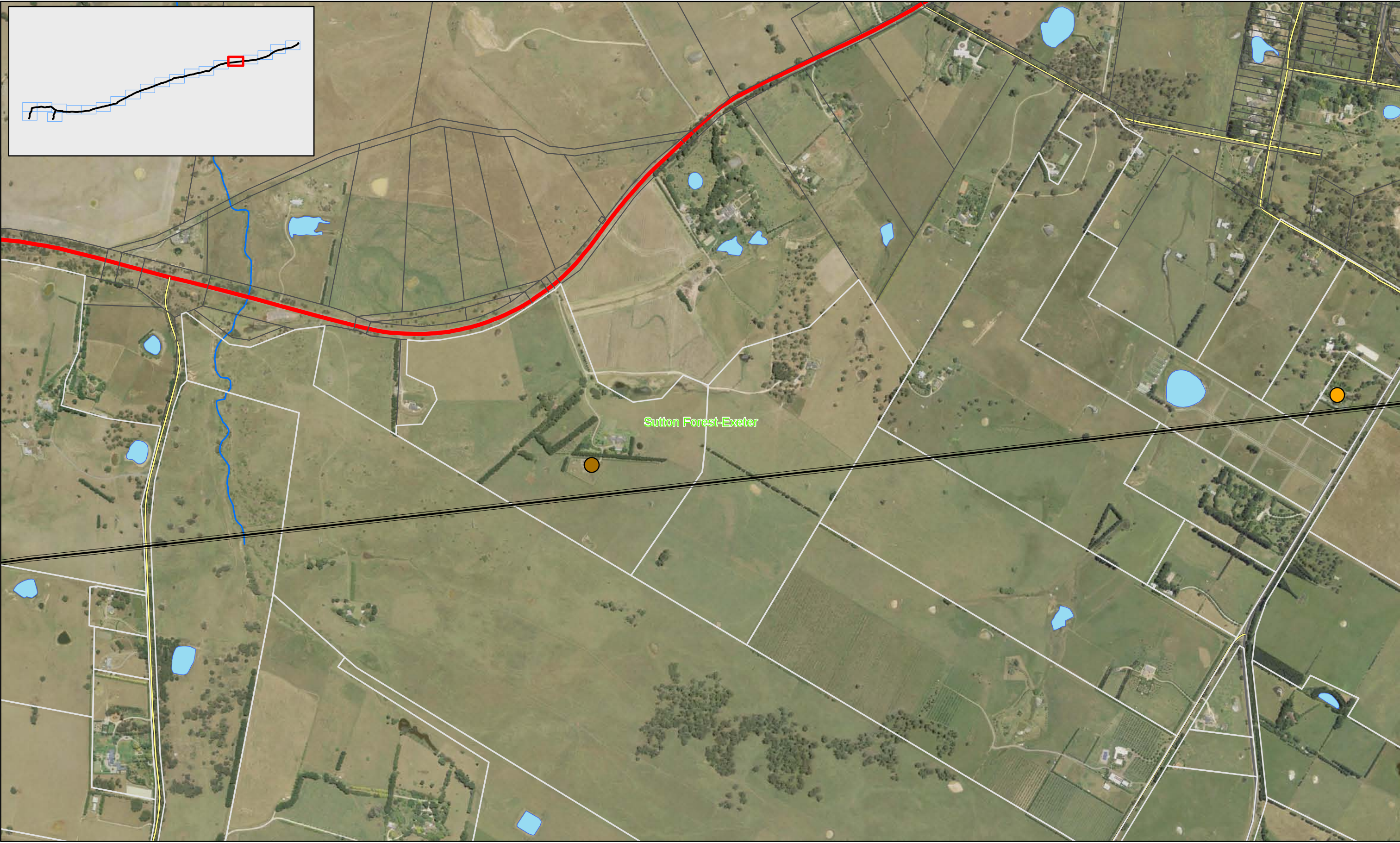
Figure 16.1-D

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55

LEGEND

Residential dwelling	● Locality	— River/Creek	■ HydroArea
● Less than 10m	— Proposed Route (29/11/2009)	— Railways	■ Sector boundary
● 10m - 20m	— Properties Intersected By Corridor	— PrimaryRoad	
● 20m - 50m	— Cadastre	— ArterialRoad	
● Greater than 50m		— SubArterialRoad	
		— LocalRoad	

CLIENTS|PEOPLE|PERFORMANCE

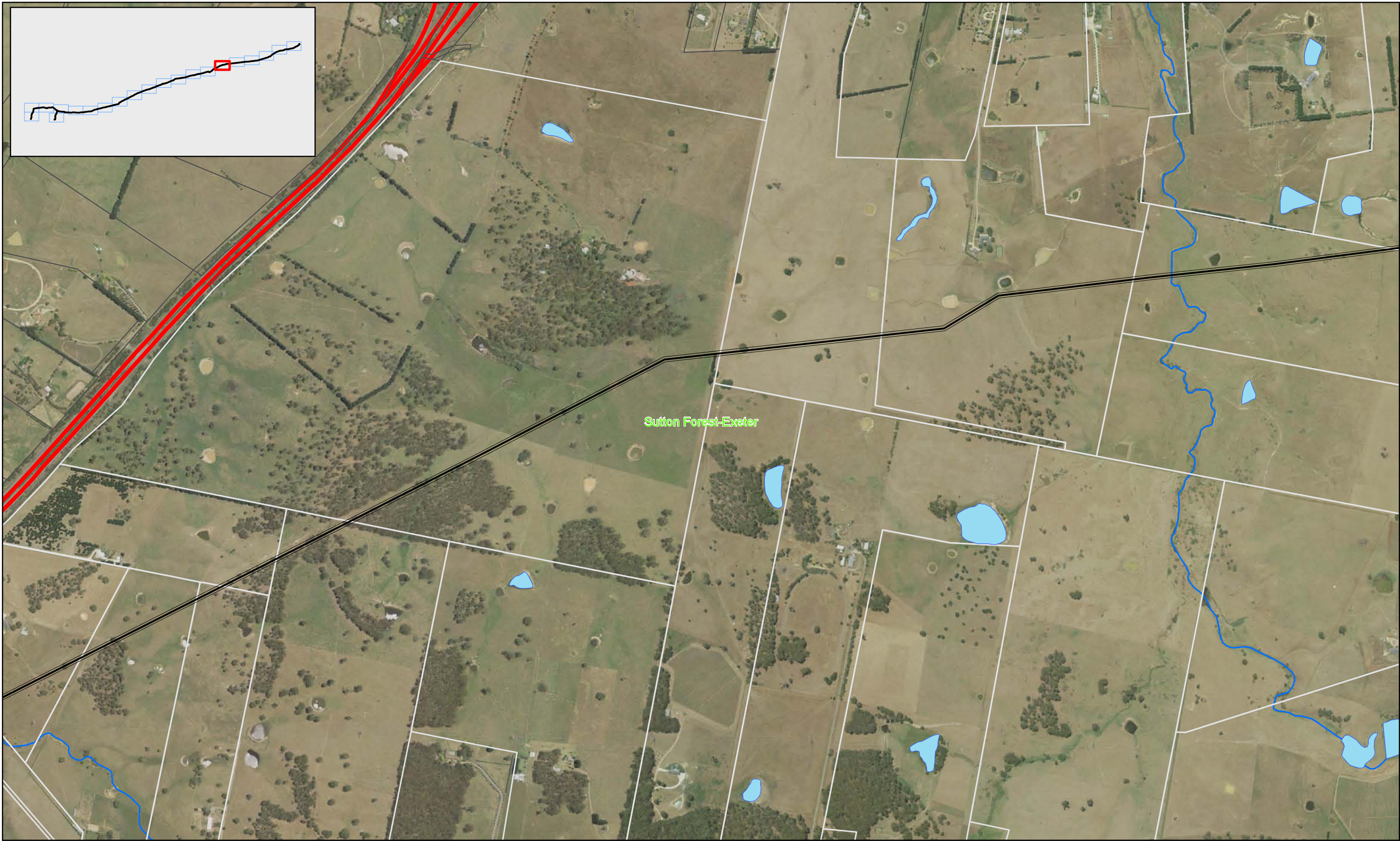
Goulburn Mulwaree Council
Highlands Source Project

Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Sutton Forest-Exeter

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Figure 16.1-E

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LEGEND

● Localities

— Proposed Route (29/11/2009)

— Properties Intersected By Corridor

— Cadastre

● Residential dwelling

● Less than 10m

● 10m - 20m

● 20m - 50m

● Greater than 50m

— River/Creek

— Railways

— Primary Road

— Arterial Road

— Sub Arterial Road

— Local Road

— HydroArea

— Sector boundary

CLIENTS | PEOPLE | PERFORMANCE

Goulburn Mulwaree Council
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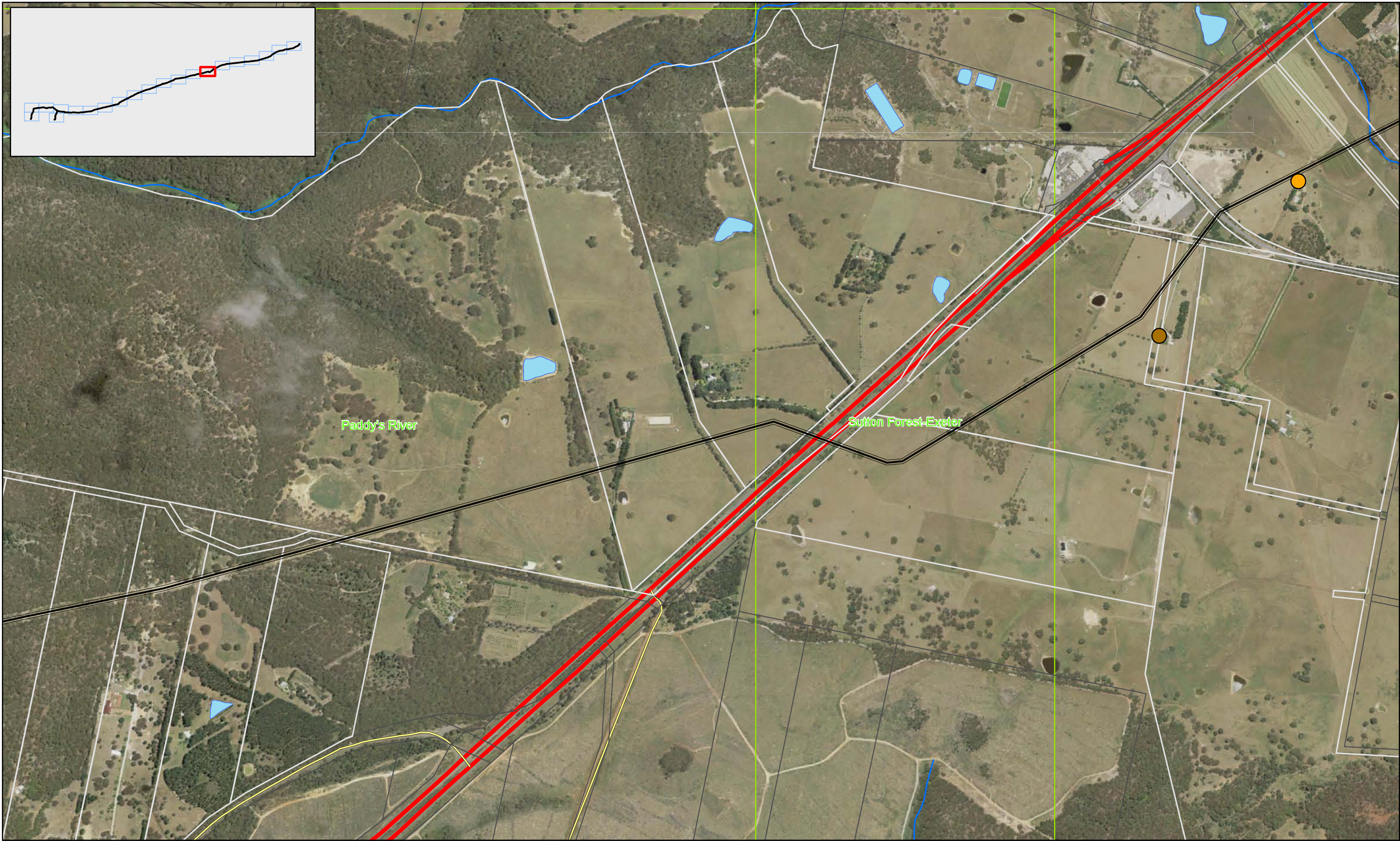
Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Sutton Forest-Exeter

Figure 16.1-F

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Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55

N

LEGEND

● Locality

— Proposed Route (29/11/2009)

— Properties Intersected By Corridor

— Cadastre

● Residential dwelling

- Less than 10m
- 10m - 20m
- 20m - 50m
- Greater than 50m

— River/Creek

— Railways

— Primary Road

— Arterial Road

— Sub Arterial Road

— Local Road

— Hydro Area

— Sector boundary

CLIENTS | PEOPLE | PERFORMANCE

Goulburn Mulwaree Council
Highlands Source Project

Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Paddys River

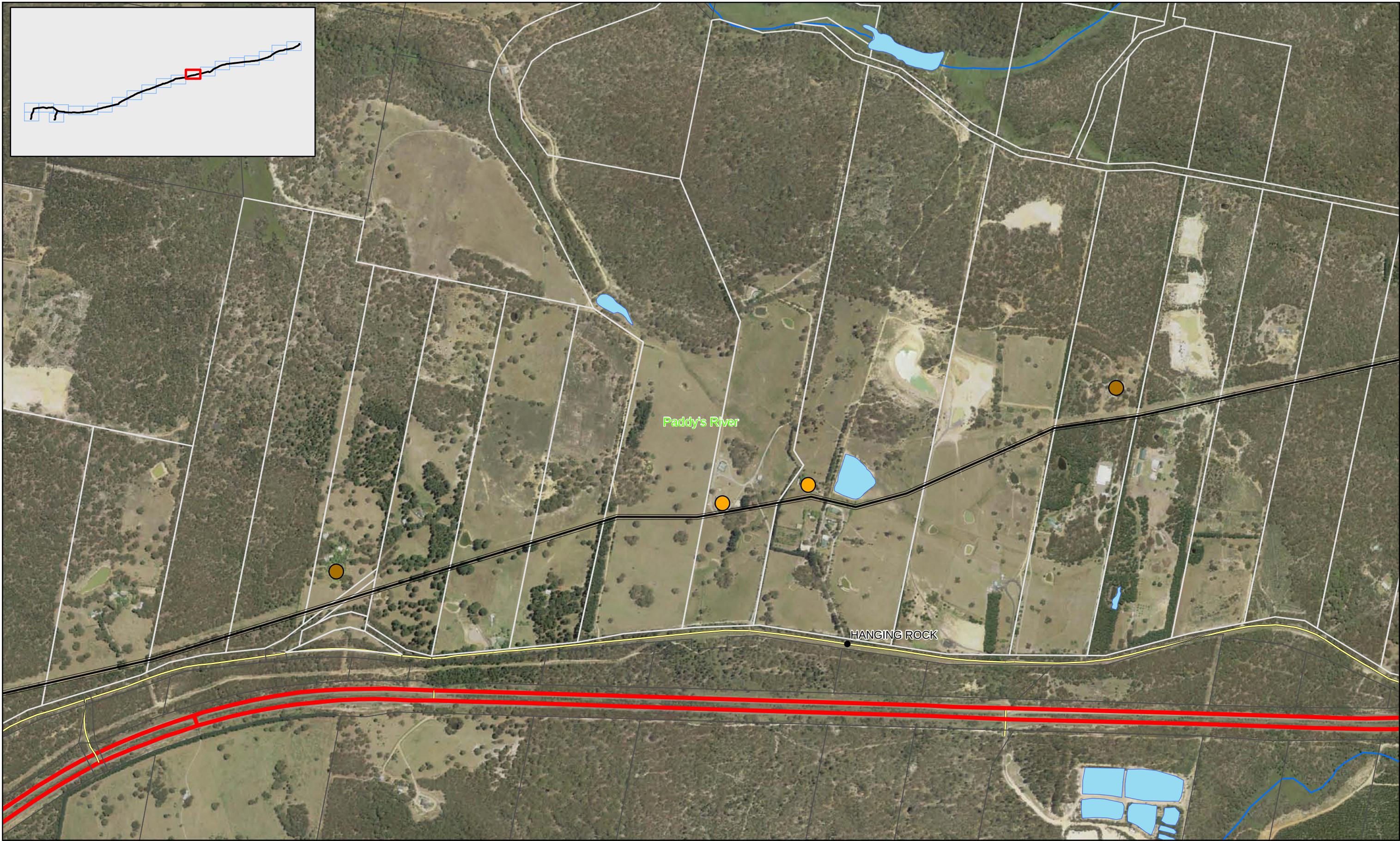
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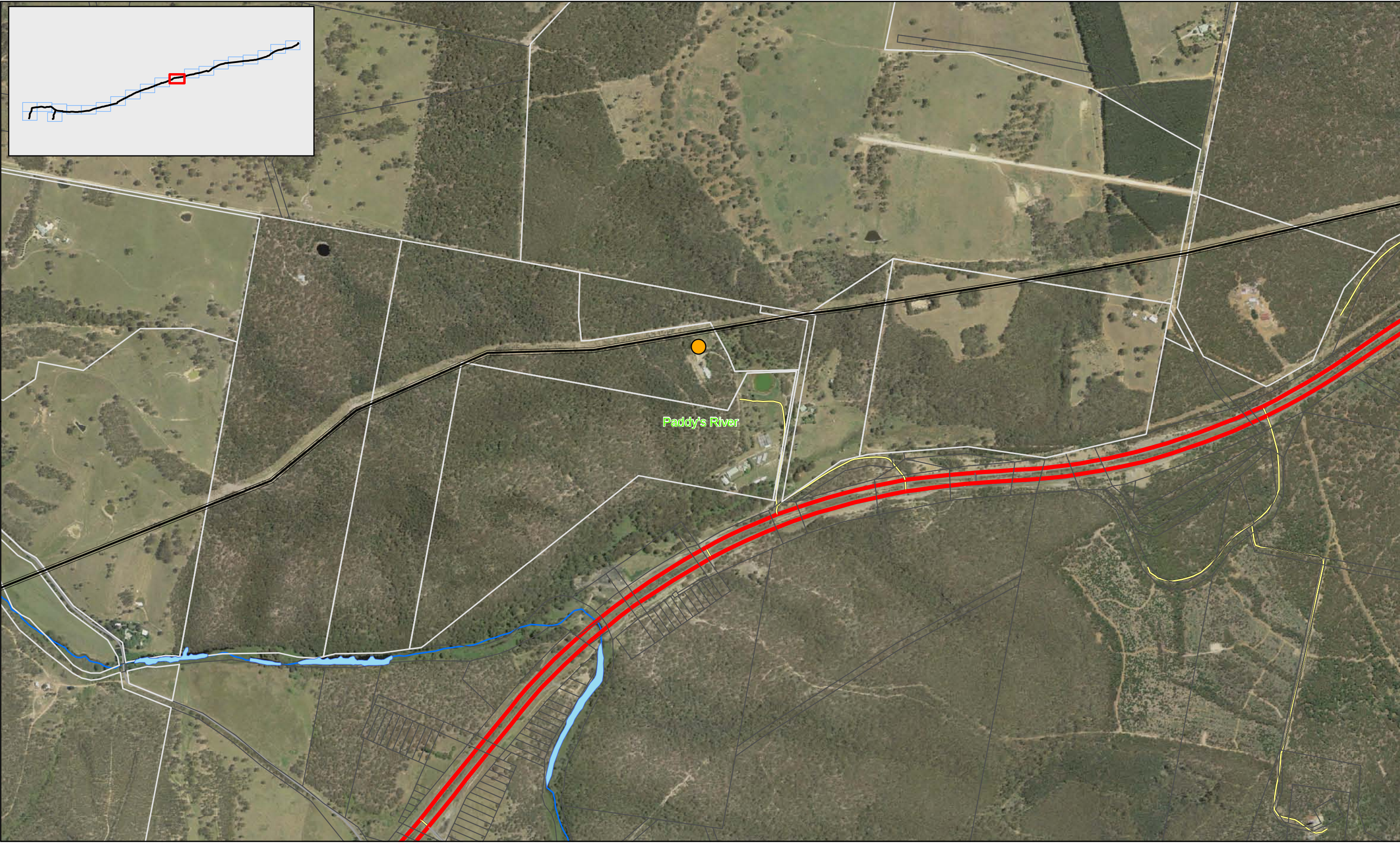
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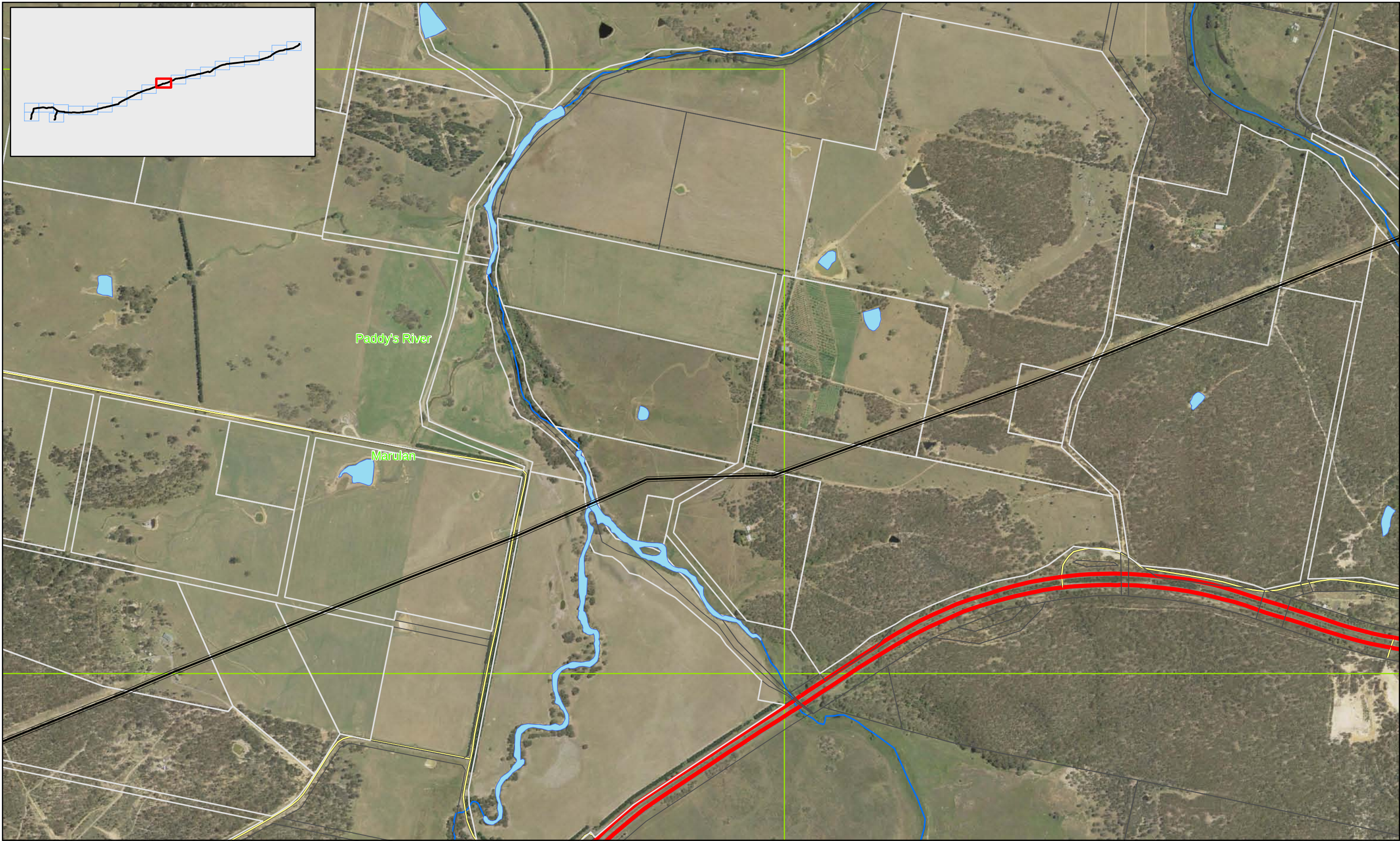
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Metres

N

LEGEND

●

Residential dwelling

●

Less than 10m

●

10m - 20m

●

20m - 50m

●

Greater than 50m

●

Locality

—

Proposed Route (29/11/2009)

—

Properties Intersected By Corridor

—

Cadastre

—

River/Creek

—

Railways

—

Primary Road

—

Arterial Road

—

Sub Arterial Road

—

Local Road

—

Hydro Area

—

Sector boundary

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Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Marulan

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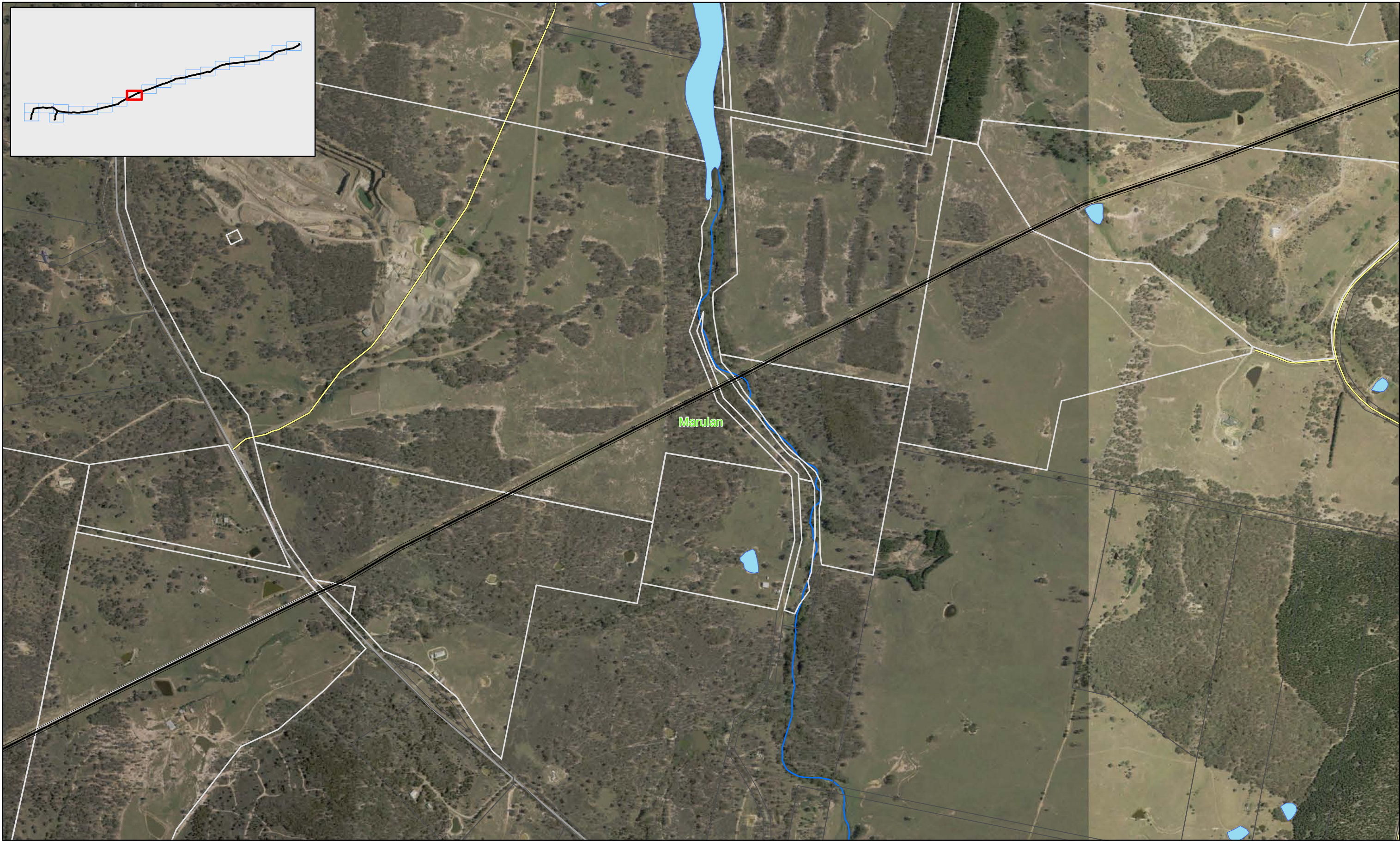
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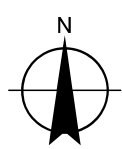
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Metres



LEGEND

- | | | | |
|----------------------|------------------------------------|-----------------|-----------------|
| Residential dwelling | Locality | River/Creek | HydroArea |
| Less than 10m | Proposed Route (29/11/2009) | Railways | Sector boundary |
| 10m - 20m | Properties Intersected By Corridor | PrimaryRoad | |
| 20m - 50m | Cadastre | ArterialRoad | |
| Greater than 50m | | SubArterialRoad | |
| | | LocalRoad | |



CLIENTS | PEOPLE | PERFORMANCE



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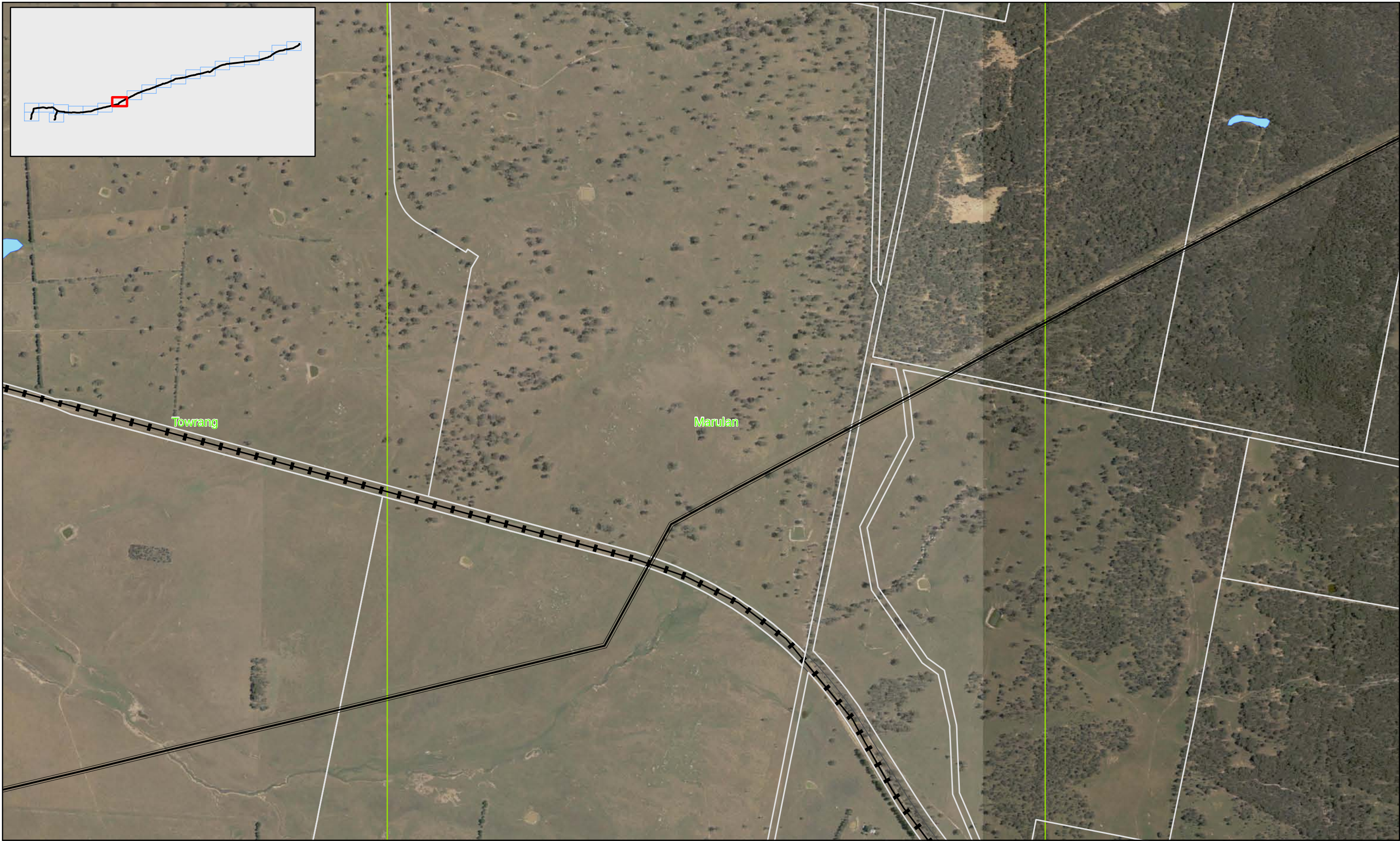
Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Marulan

Figure 16.1-L

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55

LEGEND

Residential dwelling

- Less than 10m
- 10m - 20m
- 20m - 50m
- Greater than 50m

Localities

- Locality
- Proposed Route (29/11/2009)
- Properties intersected by Corridor
- Cadastre

Infrastructure

- River/Creek
- Railways
- Primary Road
- Arterial Road
- Sub Arterial Road
- Local Road

Hydro Area

- Hydro Area
- Sector boundary

CLIENTS | PEOPLE | PERFORMANCE

Goulburn Mulwaree Council
Highlands Source Project

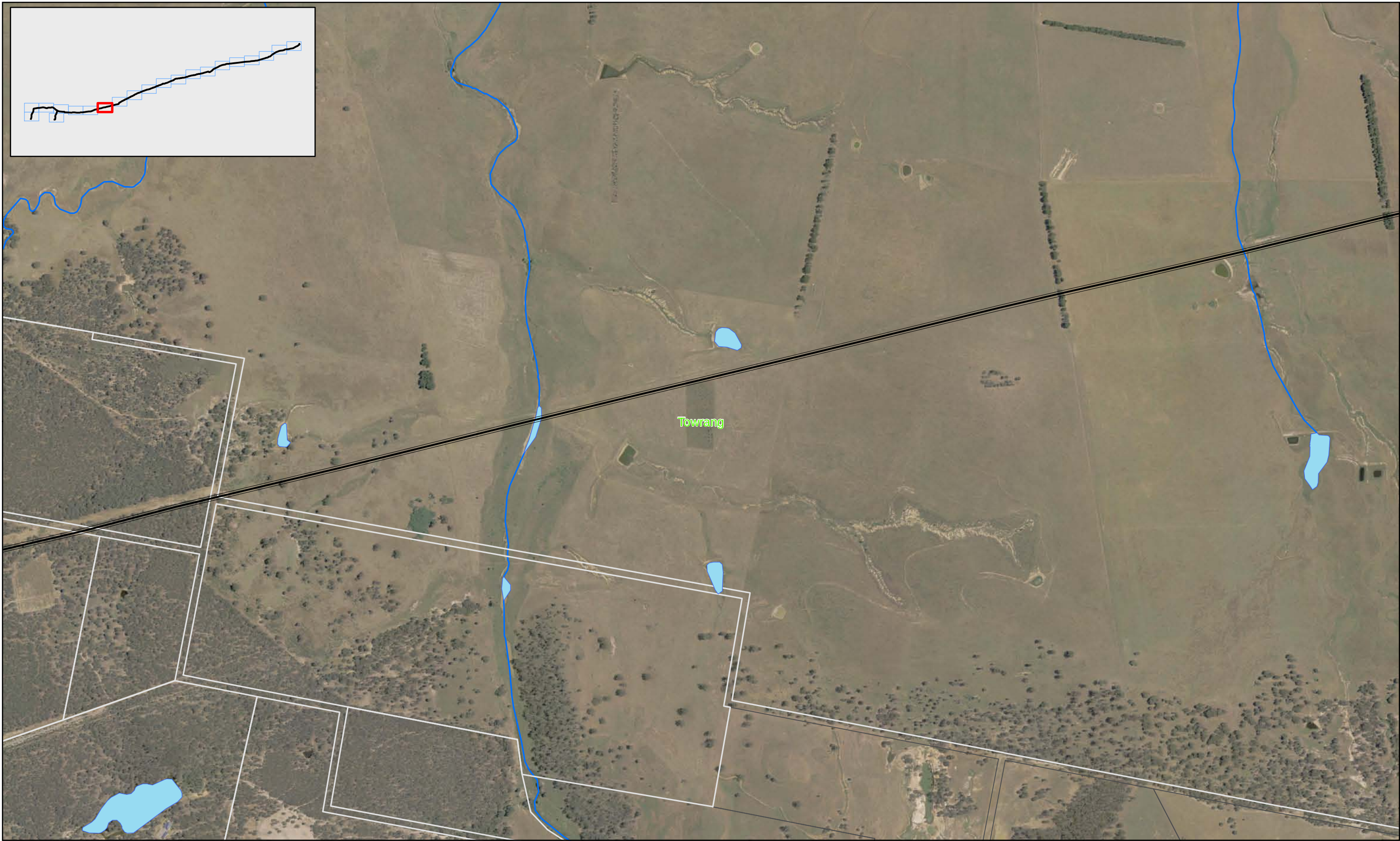
Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Marulan

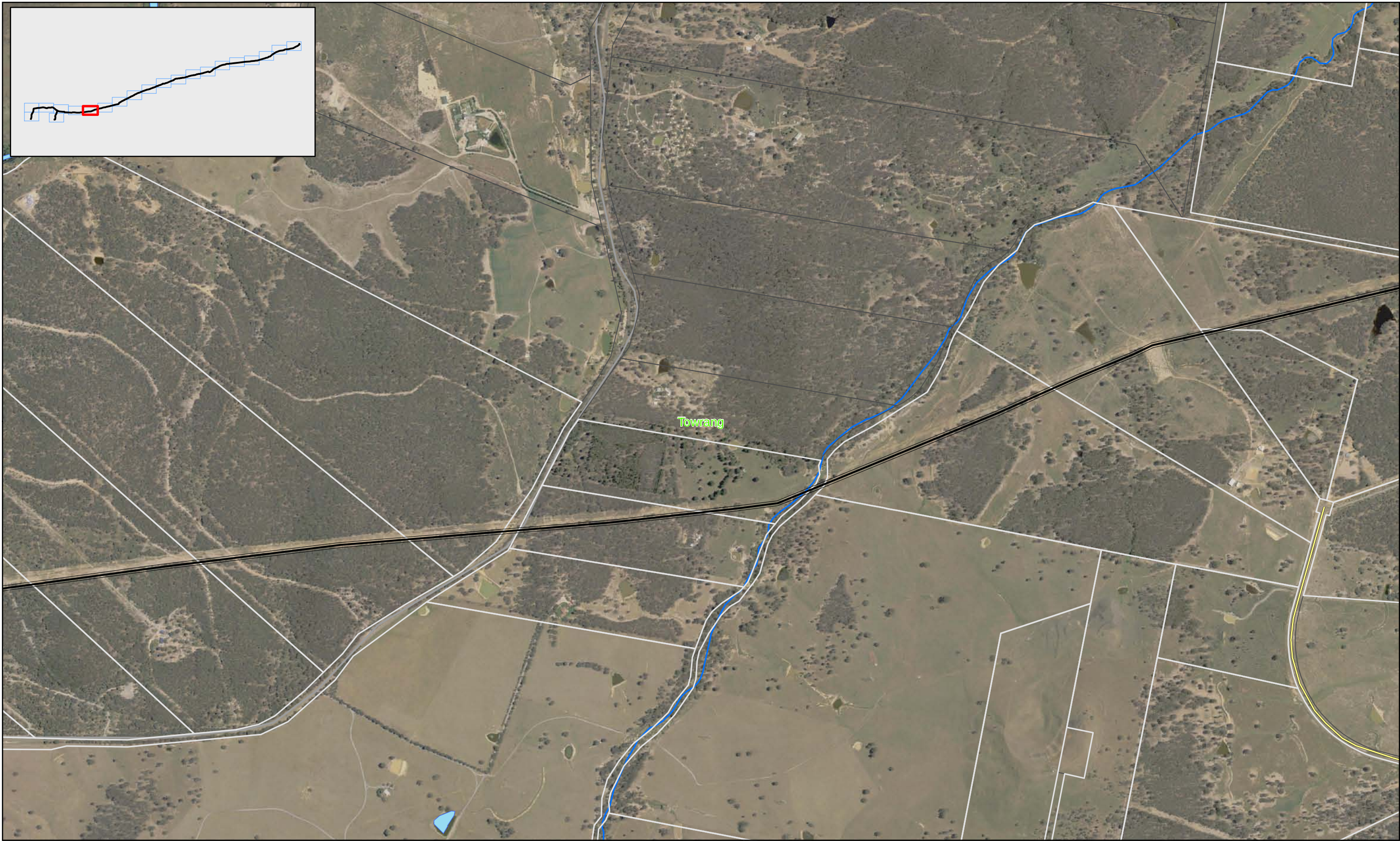
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Figure 16.1-M

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55

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LEGEND

Residential dwelling

- Less than 10m
- 10m - 20m
- 20m - 50m
- Greater than 50m

- Locality
- Proposed Route (29/11/2009)
- Properties Intersected By Corridor
- Cadastre

- River/Creek
- Railways
- Primary Road
- Arterial Road
- Sub Arterial Road
- Local Road

- Hydro Area
- Sector boundary

CLIENTS | PEOPLE | PERFORMANCE

Goulburn Mulwaree Council
Highlands Source Project

Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Towrang

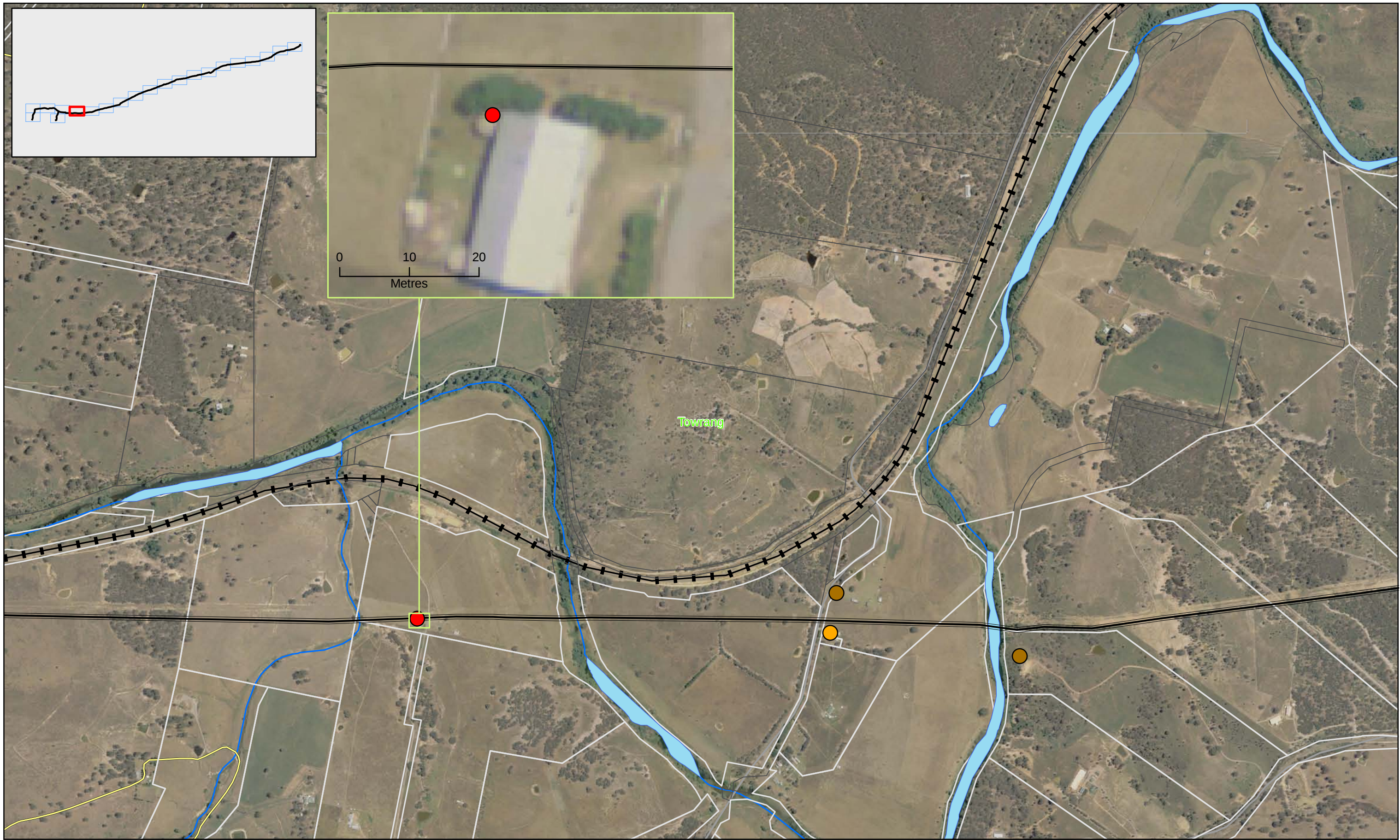
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Figure 16.1-O

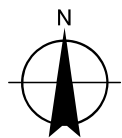
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1:10,000 (at A3)
0 100 200 300 400
Metres



LEGEND

- | | | | |
|-----------------------------|--------------------------------------|---------------------|-------------------|
| Residential dwelling | ● Locality | — River/Creek | — HydroArea |
| ● Less than 10m | — Proposed Route (29/11/2009) | — Railways | — Sector boundary |
| ● 10m - 20m | — Properties Intersected By Corridor | — Primary Road | |
| ● 20m - 50m | — Cadastre | — Arterial Road | |
| ● Greater than 50m | | — Sub Arterial Road | |
| | | — Local Road | |



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Revision	0
Date	30 MAR 2010

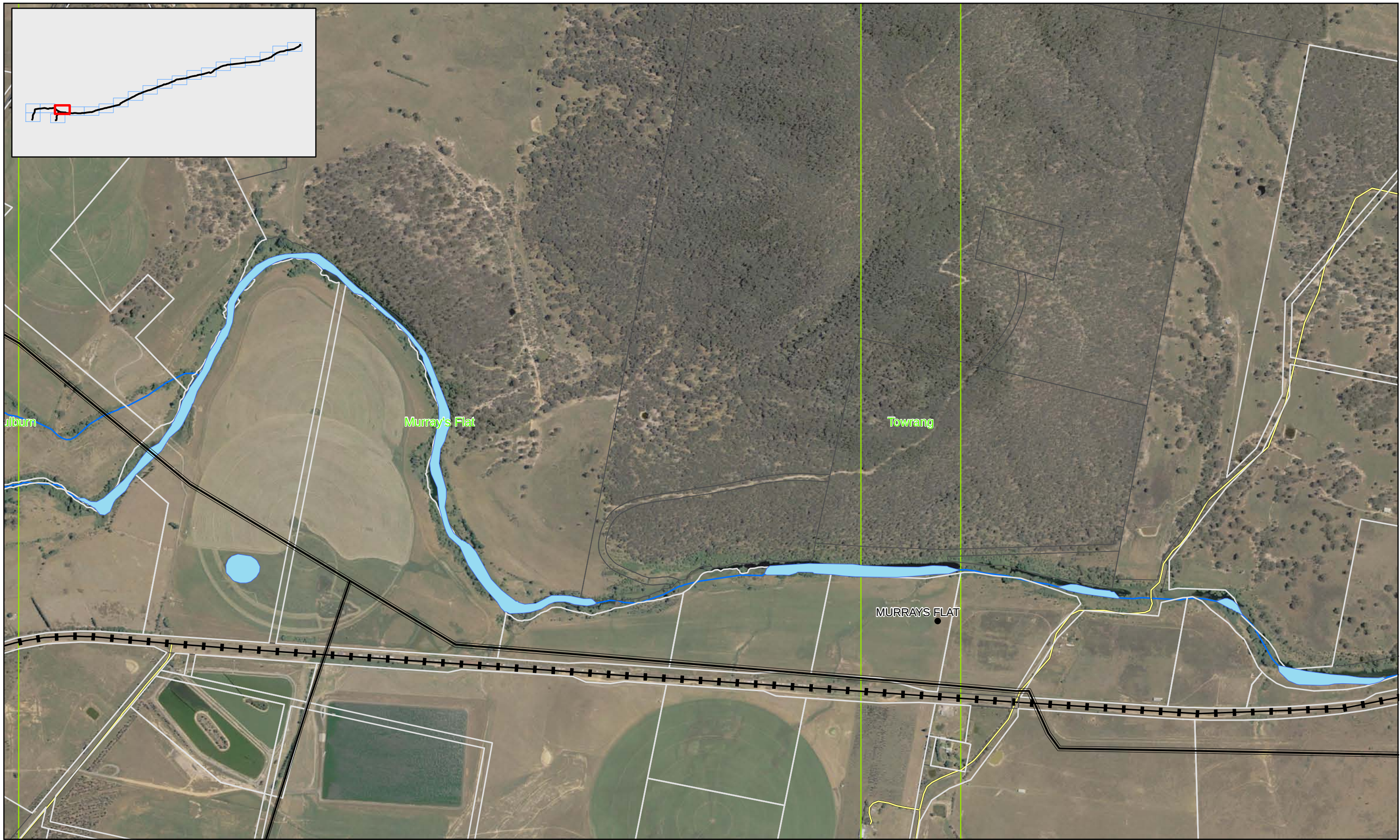
Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Towrang

Figure 16.1-P

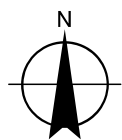
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1:10,000 (at A3)
0 100 200 300 400
Metres



LEGEND

- | | | | |
|----------------------|------------------------------------|-----------------|-----------------|
| Residential dwelling | Locality | River/Creek | HydroArea |
| Less than 10m | Proposed Route (29/11/2009) | Railways | Sector boundary |
| 10m - 20m | Properties Intersected By Corridor | PrimaryRoad | |
| 20m - 50m | Cadastre | ArterialRoad | |
| Greater than 50m | | SubArterialRoad | |
| | | LocalRoad | |



CLIENTS | PEOPLE | PERFORMANCE



Goulburn Mulwaree Council
Highlands Source Project

Job Number	23-13312
Revision	0
Date	30 MAR 2010

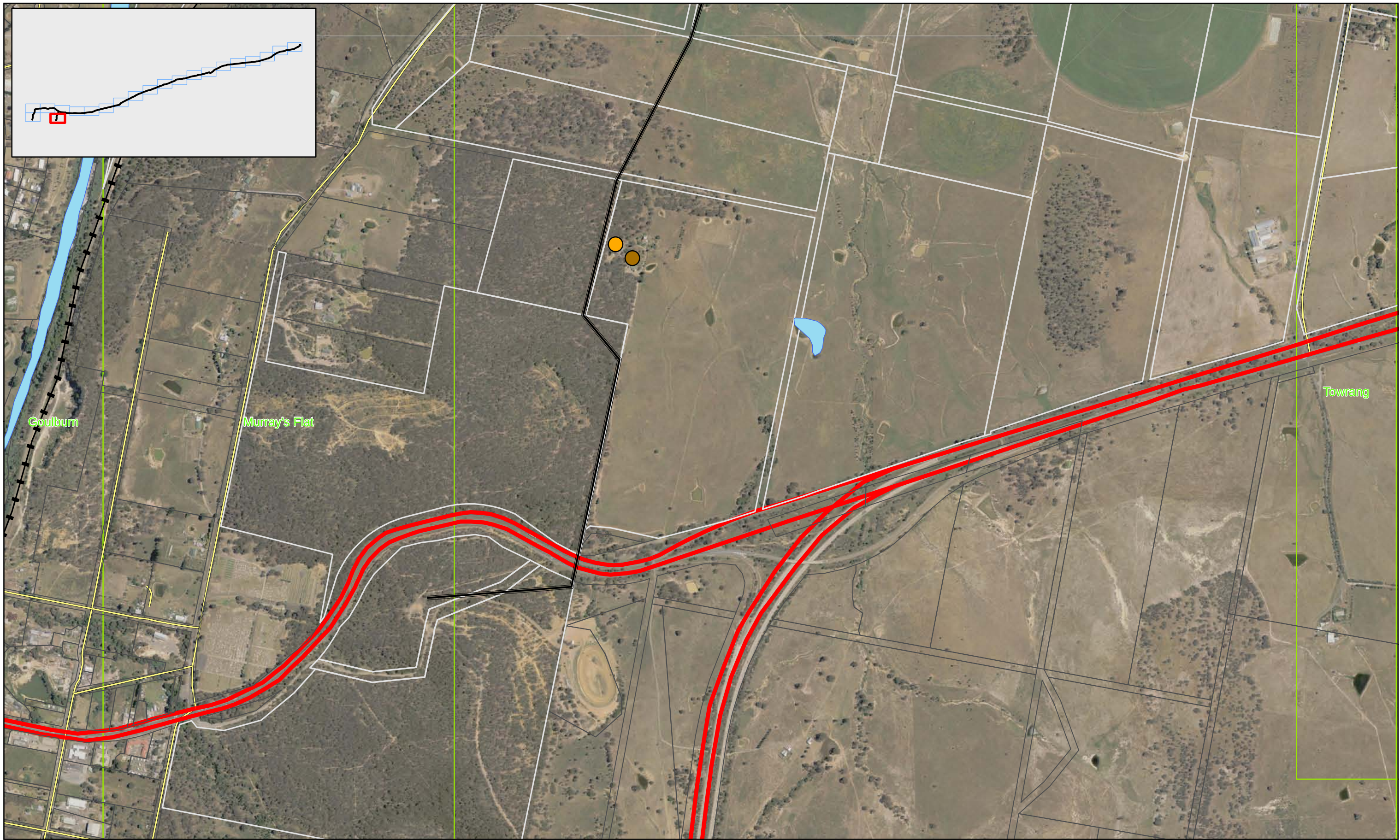
Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Murrays Flat

Figure 16.1-Q

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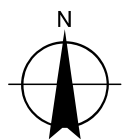
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1:10,000 (at A3)
0 100 200 300 400
Metres

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



LEGEND

- | | | | |
|----------------------|------------------------------------|-----------------|-----------------|
| Residential dwelling | Locality | River/Creek | HydroArea |
| Less than 10m | Proposed Route (29/11/2009) | Railways | Sector boundary |
| 10m - 20m | Properties Intersected By Corridor | PrimaryRoad | |
| 20m - 50m | Cadastre | ArterialRoad | |
| Greater than 50m | | SubArterialRoad | |
| | | LocalRoad | |



CLIENTS | PEOPLE | PERFORMANCE



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Highlands Source Project

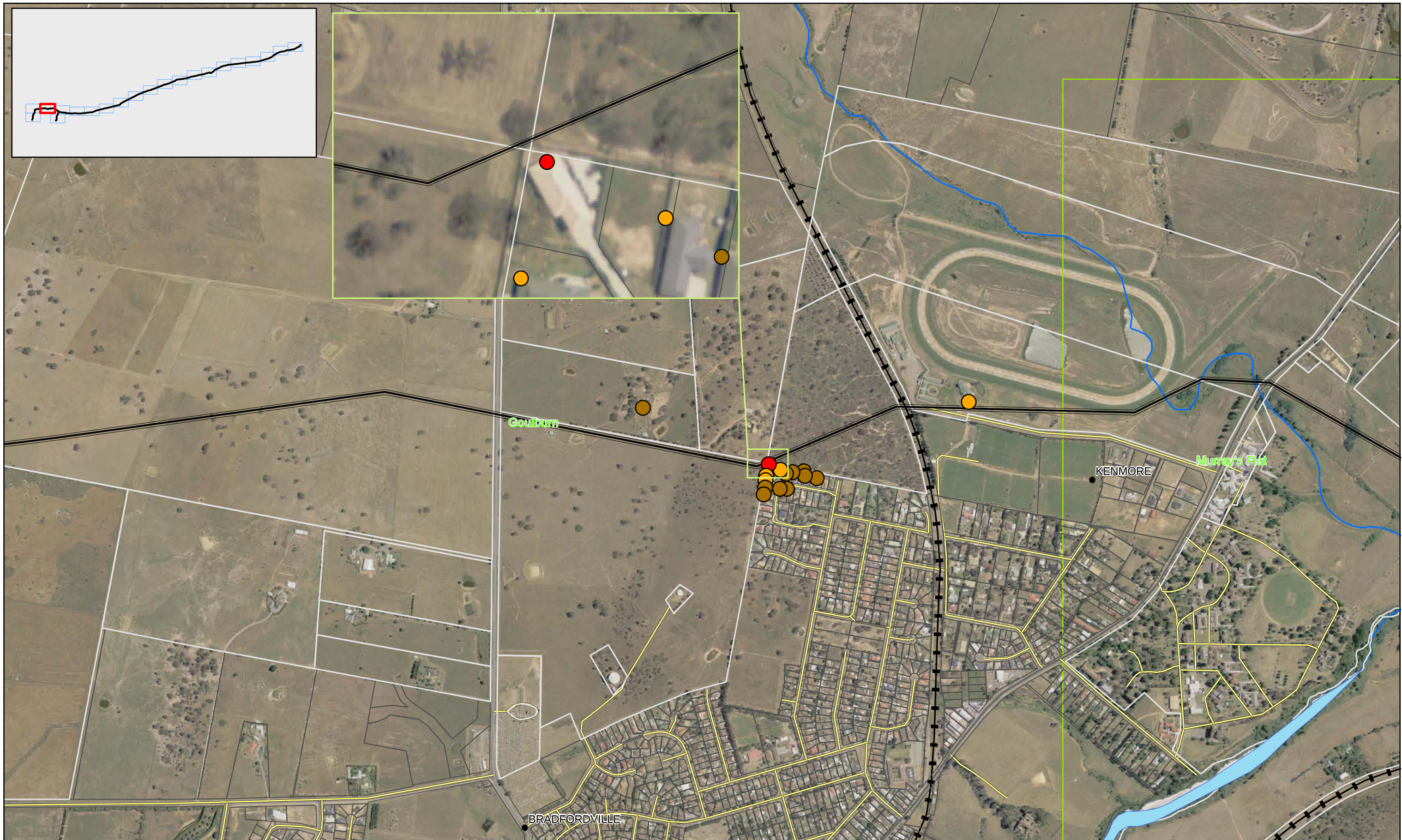
Job Number	23-13312
Revision	0
Date	30 MAR 2010

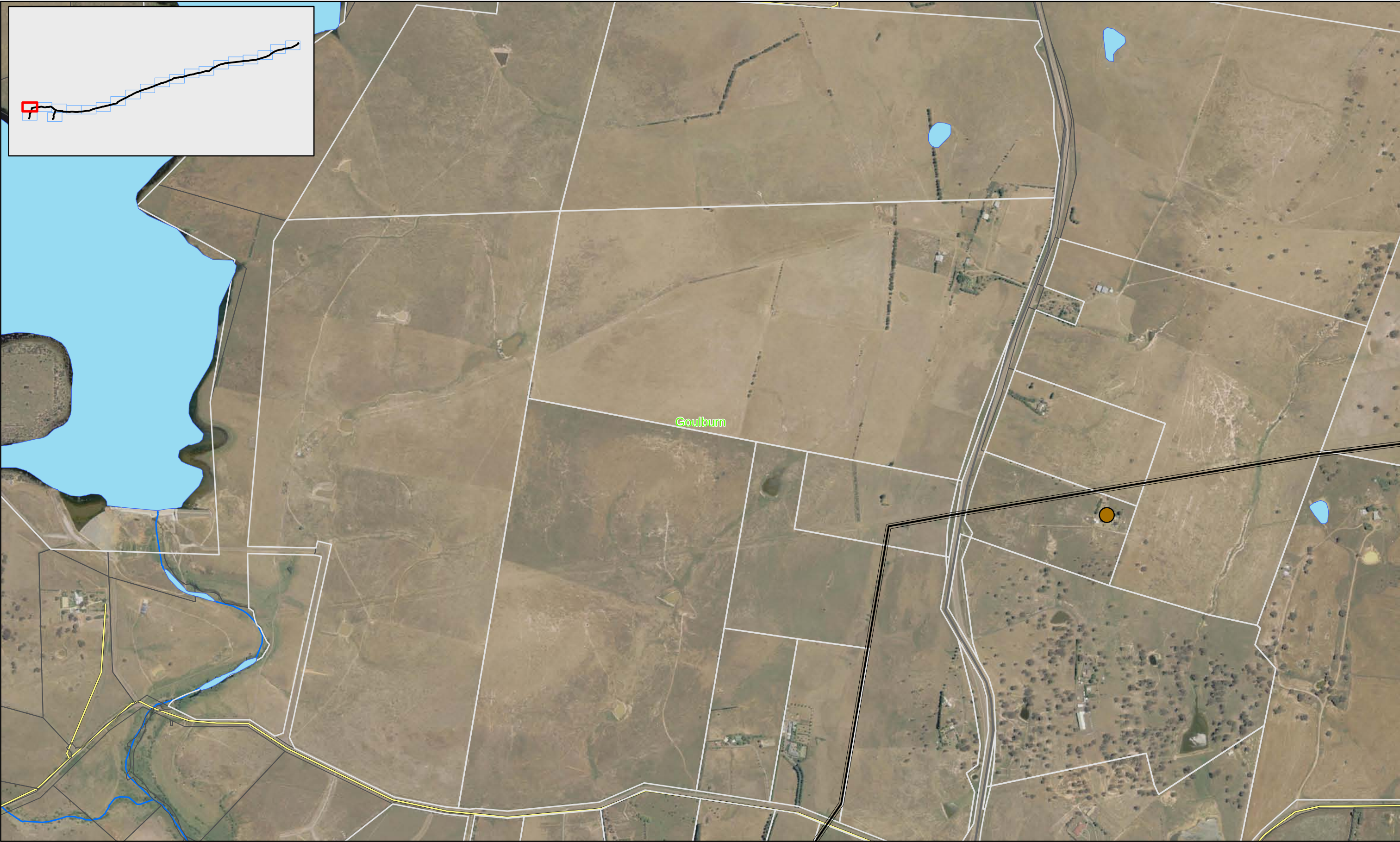
Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Murrays Flat

Figure 16.1-R

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55

LEGEND

Residential dwelling

- Less than 10m
- 10m - 20m
- 20m - 50m
- Greater than 50m

- Locality
- Proposed Route (29/11/2009)
- Properties Intersected By Corridor
- Cadastre

- River/Creek
- Railways
- Primary Road
- Arterial Road
- Sub Arterial Road
- Local Road

- Hydro Area
- Sector boundary

CLIENTS | PEOPLE | PERFORMANCE

Goulburn Mulwaree Council
Highlands Source Project

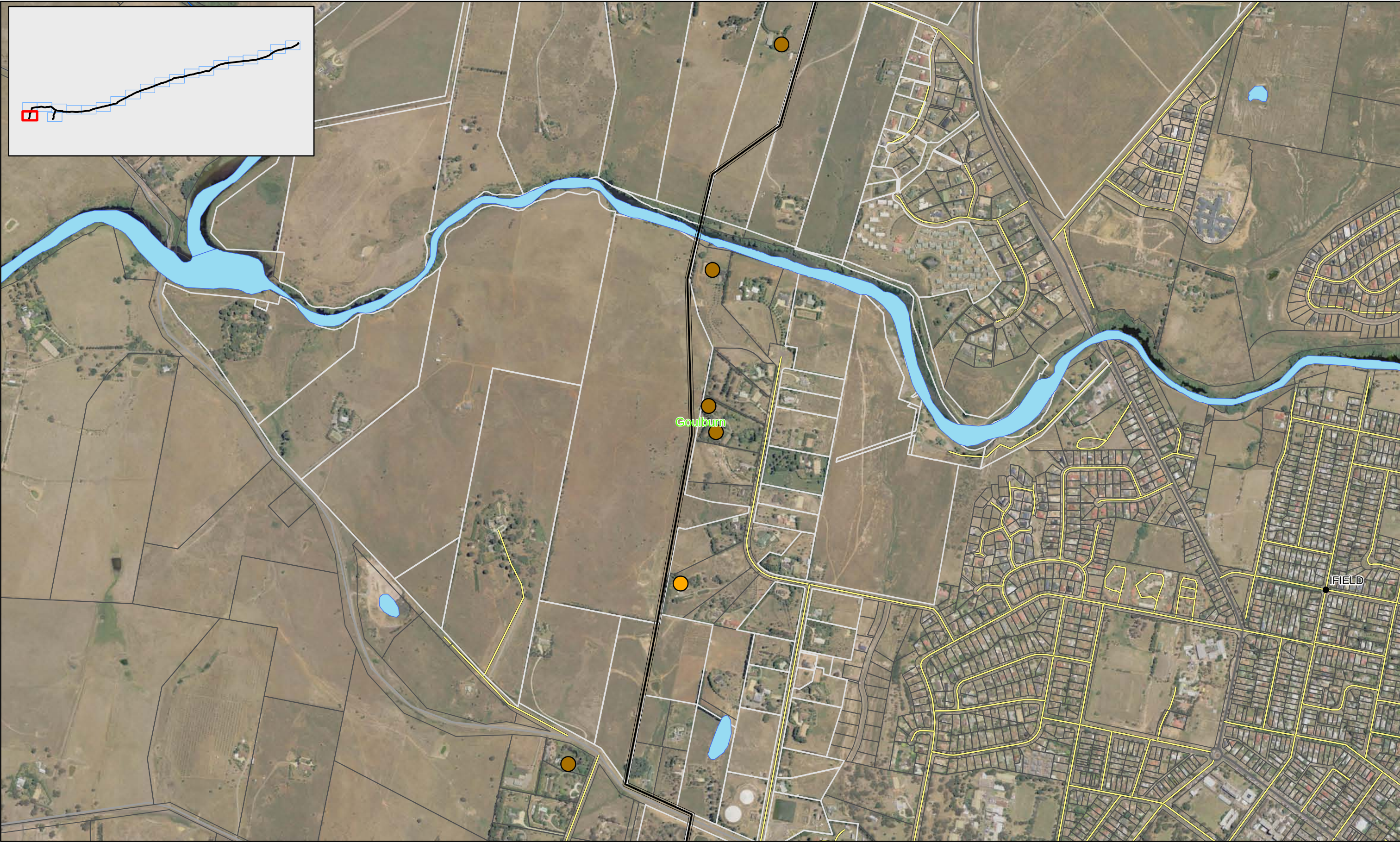
**Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Goulburn**

Job Number 23-13312
Revision 0
Date 30 MAR 2010

Figure 16.1-T

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55

N

LEGEND

Residential dwelling

- Less than 10m
- 10m - 20m
- 20m - 50m
- Greater than 50m

Localities

- Locality
- Proposed Route (29/11/2009)
- Properties Intersected By Corridor
- Cadastral

Infrastructure

- River/Creek
- Railways
- Primary Road
- Arterial Road
- Sub Arterial Road
- Local Road

HydroArea

- HydroArea
- Sector boundary

CLIENTS | PEOPLE | PERFORMANCE

Goulburn Mulwaree Council
Highlands Source Project

**Location of Sensitive Receptors
Within 100m of Pipeline Alignment
Sector: Goulburn**

Job Number 23-13312
Revision 0
Date 30 MAR 2010

Figure 16.1-U

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Data Source: NSW Lands Dept: roadsegments, railways,hydroarea, hydroline - 2007; GMC: aerial imagery - 2008; GMC/WSC: Cadastral data - 2009. Created by: ccharalambou

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16.2.9 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 16.1 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 J.

Table 16.1 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 - SP2 Tourist
Sutton Forest – Exeter	<i>Wingecarribee LEP 1989</i>	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

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

16.2.10 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 per cent of the construction corridor (20 m 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 per cent of construction corridor);
- 107.3 ha of land classified as suitable for grazing with occasional cultivation (64.1 per cent of construction corridor); and

- ▶ 26.2 ha of land classified as suitable for grazing with no cultivation (15.6 per cent 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 Murrays Flat Sector.

16.2.11 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.

16.3 Potential impacts

16.3.1 Construction phase

Temporary land uses 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 include 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.

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.

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.

16.3.2 Operation

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 m 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.

16.3.3 Consistency of the Project with existing plans and strategies

Local environment 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 LEPs and includes provisions which make the Project permissible without consent within all zones described in the three LEPs relevant to the Project.

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* (DoP, 2008) 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 outskirts;
- ▶ Additional lots at Kenmore located on the Goulburn's northern outskirts.

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.

16.4 Summary of results

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 Section 16.5 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 m of approximately 40 dwellings, with the closest being approximately 10 m 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.

16.5 Mitigation measures

16.5.1 Construction

The following mitigation measures would be implemented and included in the construction environmental management plan 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 CEMP;
- 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.

16.5.2 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 would 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.