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NSW GOVERNMENT

M1 Pacific Motorway extension to Raymond Terrace

Environmental impact statement – Chapter 14: Land use and property

Transport for NSW | July 2021

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14. Land use and property

This chapter describes the potential land use and property impacts that may be generated by the construction and operation of the project and presents the approach to the management of these impacts.

The desired performance outcomes for the project relating to land use and property, as outlined in the SEARs, are to:

- Minimise impacts to property and businesses and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure
- Effectively engage with stakeholders during project design and delivery.

Table 14-1 outlines the SEARs that relate to land use and property and identifies where they are addressed in this EIS. The full assessment of land use and property impacts is provided in the Land Use and Property Working Paper (**Appendix N**).

Table 14-1 SEARs (land use and property)

Secretary's requirement	Where addressed
12. Socio-economic, Land use and Property	
2. The proponent must assess impacts from construction and operation on potentially affected properties, businesses, Crown land, Council assets and services, recreational users, and land and water users (including recreational and commercial fishers, and oyster and aquaculture farmers), including property acquisitions/adjustments, access, amenity and relevant statutory rights.	**Section 13.4**. Impacts to businesses, commercial fishers (including oyster and aquaculture farmers), Council assets and services, recreational fishers, land and water users and amenity from construction and operation are discussed in **Chapter 13** (socio-economic).
3. The proponent must assess impacts on: (a) any operating mines, extractive industries or known mineral or petroleum resources (b) exploration activities in the vicinity of the project (c) access for future exploration areas.	Impacts of the project on operating mines, extractive industries, known resources, exploration activities and future exploration in the area is assessed in **Section 14.4**.
4. The design, construction and operation of the project should address and minimise (existing and future) land use conflicts and operations (including existing and ongoing agricultural activities). Siting of project elements should be located in a way that functional, contiguous areas of residual land and land uses are maximised.	Impacts of the project on existing and future land uses is assessed in **Section 14.4**.
5. The Proponent must undertake an assessment of biosecurity risks and management measures relating to the potential for spread of pests, disease or weeds, in accordance with the 'general biosecurity duty' under the *Biosecurity Act 2015*.	The potential for weeds and pests to impact on rural land uses is described in **Section 14.4.2**. A detailed discussion and assessment of impacts associated with the potential spread of pests, disease or weeds, and the 'general biosecurity duty' is provided in **Section 9.4**.
6. The Proponent must assess potential impacts on utilities (including communications, electricity, gas, and water and sewerage) and the relocation of these utilities.	Utility relocations, adjustments and protection are described and assessed in **Section 14.4.5**. **Section 5.3.1** also describes utilities.

Secretary's requirement	Where addressed
7. A draft Community Consultation Framework must be prepared identifying relevant stakeholders, procedures for distributing information and receiving/responding to feedback and procedures for resolving stakeholder and community complaints during the design, construction and operation of the project. Key issues that must be addressed in the Framework include, but are not limited to: (a) traffic management (including property, cyclists and pedestrian access) (b) landscaping/urban design matters (c) hydrology and flooding (d) staging and timing of construction activities including out of hours work and utility relocations (e) noise and vibration mitigation and management (f) soil erosion and water quality management (g) interaction with existing land uses.	A draft Community Consultation Framework is provided in **Appendix E**. Additional details on community consultation are provided in **Chapter 6**.
17. Safety and risk	
2. The proponent must assess the biosecurity risk of the project to minimise the inadvertent spread of disease and pathogens affecting agricultural activities, native vegetation and threatened fauna.	The biosecurity risk of the project is discussed in **Section 14.4.2**. Further information on potential for spread of pests, disease or weeds, and the 'general biosecurity duty' is provided in **Chapter 9** (biodiversity) and **Chapter 22** (safety and risk)

14.1 Policy and planning setting

The land use and property assessment was prepared to assess the potential impacts of the project in accordance with the following relevant legislation, policy and guidelines:

- Hunter Regional Plan 2036 (DPE 2016)
- Greater Newcastle Metropolitan Plan 2036 (DPE 2018)
- State Environmental Planning Policy (Infrastructure) 2007
- Local Environmental Plans:
  - Port Stephens Local Environmental Plan 2013
  - Newcastle Local Environmental Plan 2012.
- Port Stephens Council Strategies:
  - Port Stephens Local Strategic Planning Statement (Port Stephens Council undated)
  - Raymond Terrace and Heatherbrae Strategy 2015-2031 (Port Stephens Council 2015).
- City of Newcastle Strategies:
  - City of Newcastle Local Strategic Planning Statement (City of Newcastle 2020).
- Land use conflict risk assessment (LUCRA) guide (DPI 2011)
- Infrastructure proposals on rural land (DPI 2013b).

Further detail on the above legislation, policies and guidelines, and how they apply to the project, is provided in the Land Use and Property Working Paper (**Appendix N**).

14.2 Assessment methodology

The methodology for the land use and property assessment involved:

- Reviewing existing information relevant to land use and property within the study area, including:
  - Existing NSW Government and local government strategic planning policies, strategies and guidelines relevant to the study area
  - Spatial information and aerial photography to identify existing land uses and tenure
  - Outcomes of community and stakeholder consultation carried out for the project, including with property owners, local community and key stakeholders.
- Describing existing land use and property characteristics in the study area, including property and tenure and future land uses and development areas
- Assessing potential land use and property impacts during construction and operation, including impacts associated with property acquisition and temporary lease of land during construction, impacts on property access and amenity, and impacts on existing and future land uses
- Evaluating the potential risk for land use conflicts between the project and adjoining rural land uses based on the risk matrix presented in the Land Use Conflict Risk Assessment Guide (DPI 2011)
- Describing potential cumulative land use and property impacts that may arise from the interaction of construction and operation of the project, and other approved or proposed projects in the area
- Identifying measures to avoid, minimise or mitigate land use and property impacts arising from the project's construction and operation.

Further detail on the assessment methodology is provided below and in the Land Use and Property Working Paper (**Appendix N**).

14.2.1 Study area

The study area for the land use and property assessment is shown on **Figure 14-1** and includes the construction footprint and a buffer of at least one kilometre around the construction footprint. This area was selected to capture key land uses in the suburbs of Beresfield, Tomago and Heatherbrae. In addition, the assessment also considers potential impacts on regional land use and development within the City of Newcastle and Port Stephens Council LGAs.

14.2.2 Data sources

The existing environment described in **Section 14.3** draws on information and data from:

- NSW Government and local government strategic planning documents and websites including regional planning strategies and LEPs for City of Newcastle and Port Stephens Council LGAs
- Spatial information and data from the NSW government relating to existing land uses, based on the state-wide NSW Landuse 2017 dataset (v1.2) (DPIE 2020e), land use zoning, utilities and property including land tenure
- Data from the Bureau of Meteorology, Australian Groundwater Explorer, WaterNSW groundwater database and WaterNSW water register were used to identify groundwater works and water licences
- Data from the NSW Department of Planning, Industry and Environment MinView database for mining, extractive industries and exploration activities.

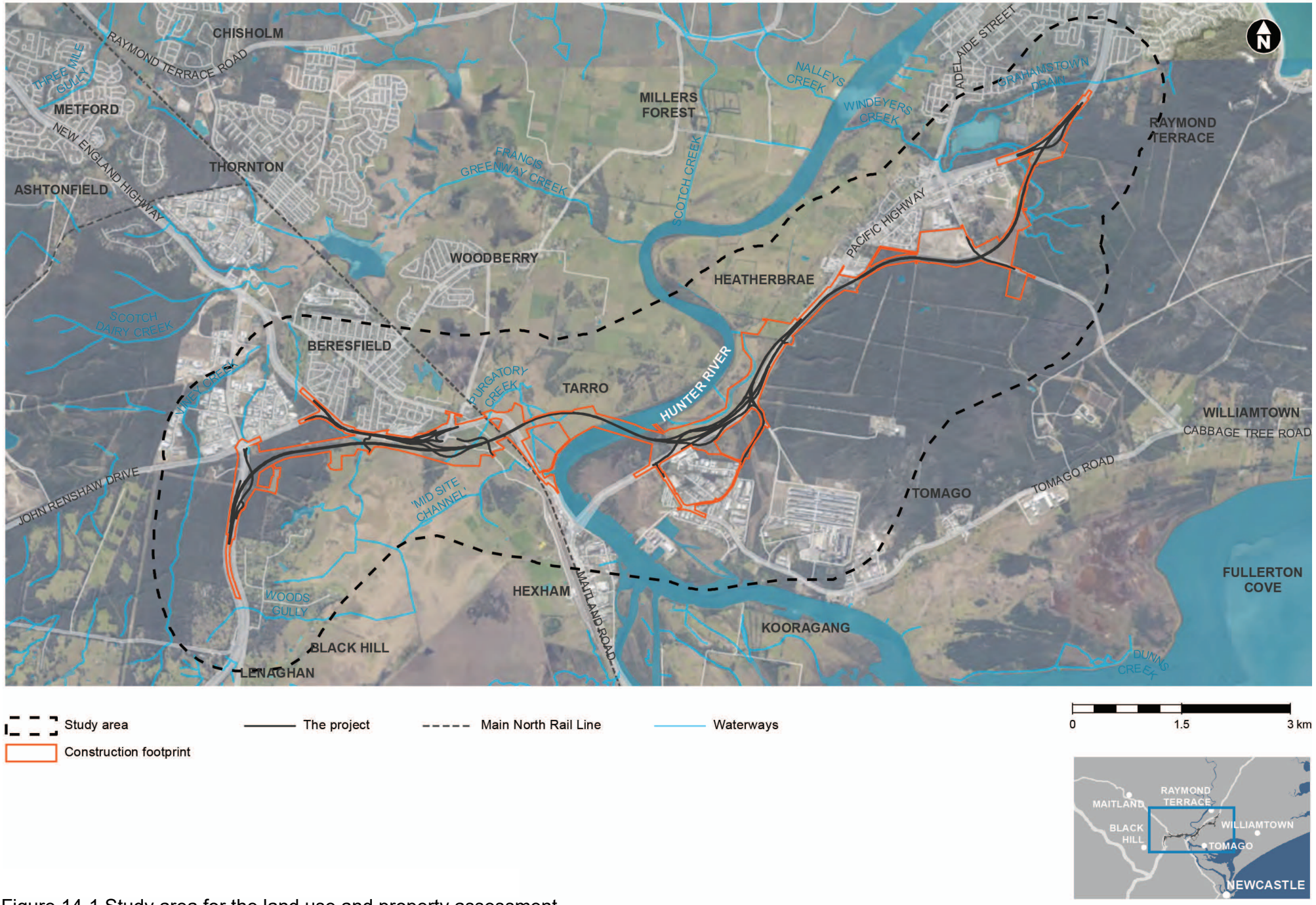

Figure 14-1 Study area for the land use and property assessment

14.3 Existing environment

14.3.1 Regional land use

The project is located within the City of Newcastle and Port Stephens Council LGAs in the Hunter region. The Hunter is the largest regional economy in Australia in terms of economic output and drives around 28 per cent of regional NSW's total economic output. The Hunter is also the largest regional contributor to the State's gross domestic product (DPE 2016).

Key regional land uses within the Hunter include:

- Manufacturing and industrial uses, including at Beresfield, Black Hill, Tomago and Heatherbrae, Cardiff, Port of Newcastle and surrounding port lands, and at Kooragang Island located downstream of the project
- Agricultural and rural uses, including wine making, thoroughbred horse breeding and major beef cattle production
- Environmental uses, including the Hunter Wetlands National Park, Hunter River, and Hunter Region Botanic Gardens at Heatherbrae
- Tourism, associated with agricultural activities and wine growing
- Defence services, with defence establishments at the Royal Australian Air Force Base in Williamtown, Lone Pine Barracks in the Singleton Military Area and Myambat Logistics Company near Denman
- Newcastle Airport at Williamtown, which is a key global gateway to the Hunter and focus for technology, defence and aerospace industries
- Major health care and education services, including within Newcastle and Maitland
- Mining and power generation within the Upper Hunter.

The M1 Pacific Motorway is a key north-south corridor linking Sydney to the Central Coast, Newcastle and Hunter region. The New England Highway and the Pacific Highway also facilitate significant freight movements between NSW, Victoria and Queensland, as well as between Sydney, the Hunter region and northern NSW.

14.3.2 Property

Property within the study area comprises:

- Privately owned property
- Land owned by the City of Newcastle and Port Stephens Council
- State-owned land.

Transport has been progressively acquiring land for the project with about 43 per cent of property affected by the construction footprint (about 152.6 hectares) owned by Transport.

Land tenure in the study area comprises (**Figure 14-2**):

- Freehold land, which makes up the majority of the land in the study area
- Crown land (land owned and managed by the NSW Government) which is within the construction and operational footprints on either side of the Hunter River, and at Tomago and Heatherbrae
- Local government land at Beresfield next to the construction and operational footprints
- Commonwealth owned land within the study area comprises residential uses at Raymond Terrace owned by Defence Housing Australia, and the Australia Post delivery centre at Heatherbrae. These Commonwealth owned properties would not be affected by the project.

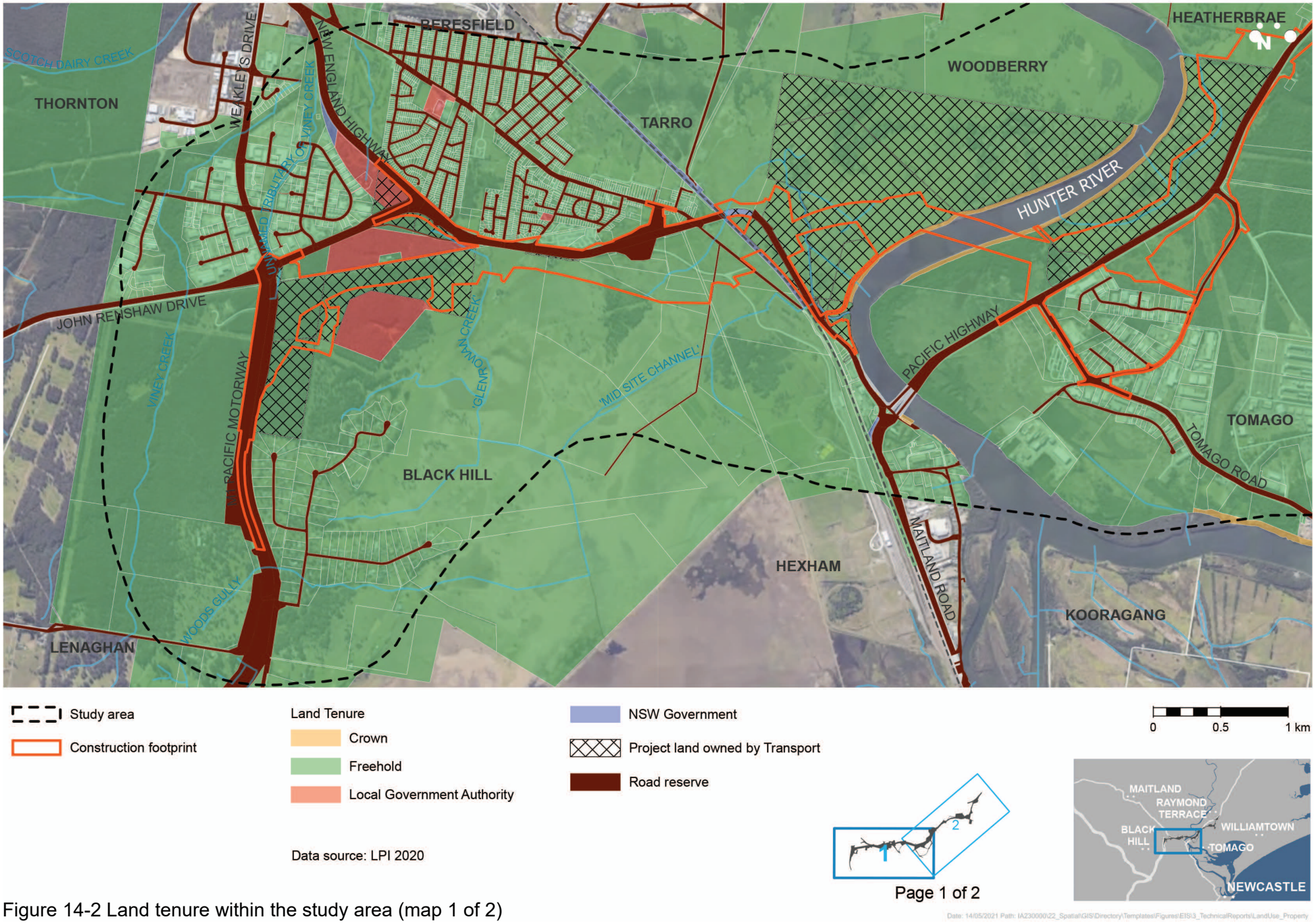

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Figure 14-2 Land tenure within the study area (map 1 of 2)

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Figure 14-2 Land tenure within the study area (map 2 of 2)

14.3.3 Existing land use

Land within the study area is used for a range of urban, rural and environmental uses. Key land uses in the study area, based on the land use categories from the NSW Landuse 2017 dataset (v1.2) (DPIE 2020e), are shown on **Figure 14-3** and described in **Table 14-2**. Land used for grazing comprises the largest area of land within the study area, with managed resource protection and services uses the next largest land use types. A full list of land uses in the construction and operation footprints is presented in the Land Use and Property Working Paper (**Appendix N**).

Table 14-2 Key land uses within the study area

Key land uses	Description
Primary production	Most of the primary production land in the study area is land used for grazing at Black Hill, Tarro, Woodberry, Tomago, Heatherbrae, and Raymond Terrace. Other primary production uses in the study area include horticultural uses, plantation forests, cropping and 'land in transition' (for example, degraded land, abandoned land, and land under rehabilitation). Other primary production uses such as horticultural uses and irrigated cropping are located away from the project and would not be affected by the project. Land within the study area used for plantation forests uses mainly comprises privately owned land at Heatherbrae, however some of this land has been developed for commercial and industrial uses or is identified for future industrial uses.
Intensive uses	Land mapped for intensive uses mainly comprise urban uses at Beresfield, Tarro, Tomago, Heatherbrae and Raymond Terrace. Intensive uses comprise the second largest area of land in the study area, with this mainly comprising residential uses, manufacturing and industrial uses, and services uses such as commercial, recreation and cultural services. The study area also includes a range of infrastructure uses, including transport infrastructure. About 240 hectares of land in the study area is used for existing transport infrastructure, including roads and highways, local roads and rail corridors. 'Other intensive uses' in the study area comprise mining and resources uses at Black Hill, and intensive animal production at Heatherbrae for horse stud farms and the agistment of horses.
Conservation and natural environments	Land in the study area mapped for conservation and natural environment uses includes land used for nature conservation, managed resource protection (for example, surface water and groundwater supplies) and other minimal uses such as residual native cover and rehabilitated land. More than half of the land area covered by conservation and natural environment uses comprises land used for 'managed resource protection' associated with Hunter Water Corporation's assets such as the Tomago Sandbeds and Grahamstown Dam in Heatherbrae. Land identified as 'other minimal use' comprises the next largest area of conservation and natural environment uses and includes residual native vegetation at Black Hill and rehabilitated land and residual native vegetation at Tomago. Areas identified as nature conservation in the study area include the Hunter Wetlands National Park at Hexham. An existing BioBanking Agreement is located around the Hunter Region Botanic Gardens east of the existing highway which comprises two areas, one north of the Hunter Region Botanic Gardens (about 44 hectares) and one to the south (about 62 hectares).
Water	Land mapped for water uses in the study area includes water bodies such as the Hunter River, Windeyers Creek, Viney Creek, Purgatory Creek and lakes, dams, drainage channels and water pipelines at Black Hill, Tarro, Tomago, Woodberry, and Heatherbrae, and marsh and wetland uses associated with the Hunter River floodplain. About half of the land mapped for water uses is land covered by the Hunter River.

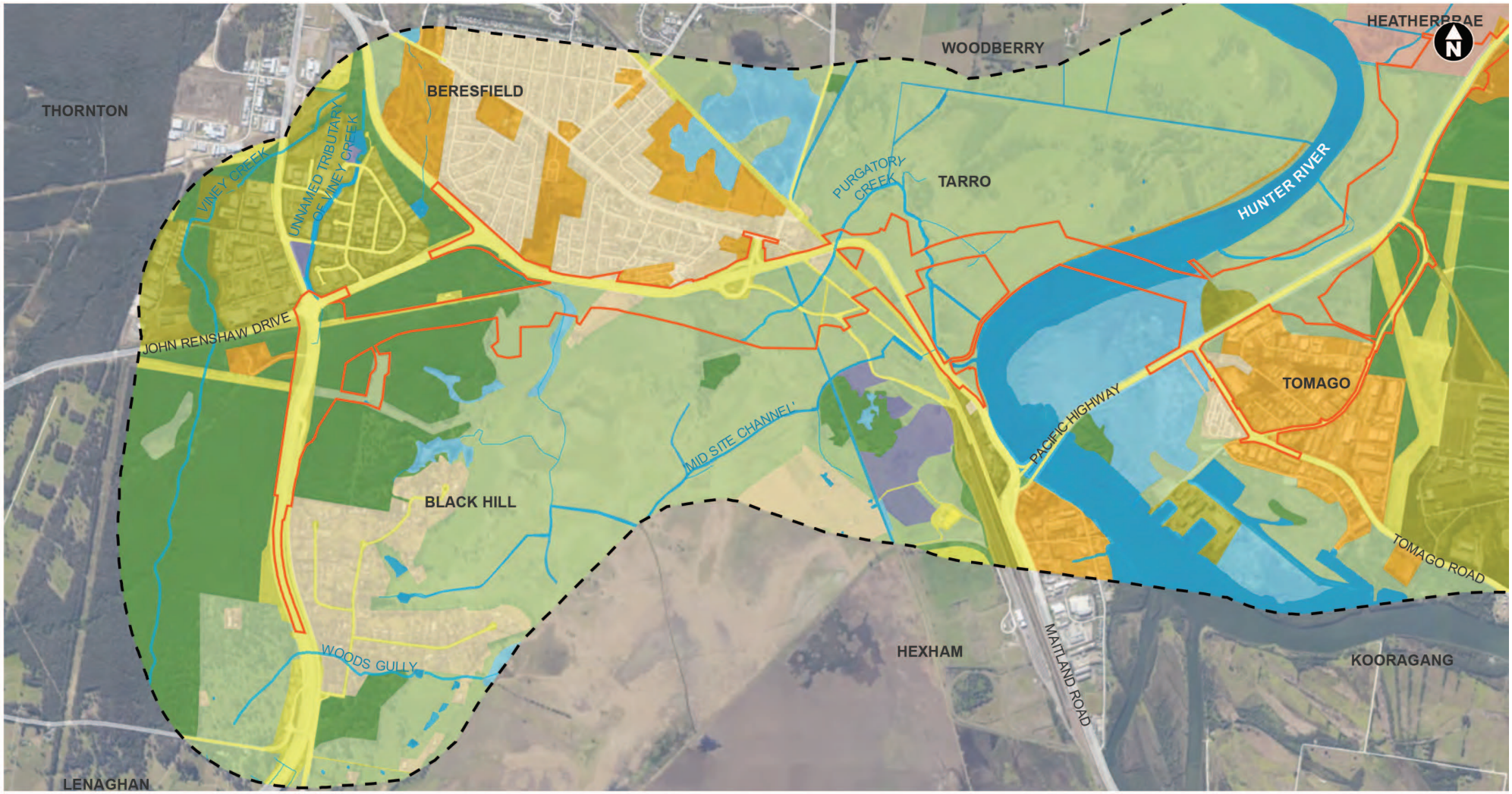

Figure 14-3 Existing land use within the study area (map 1 of 2)

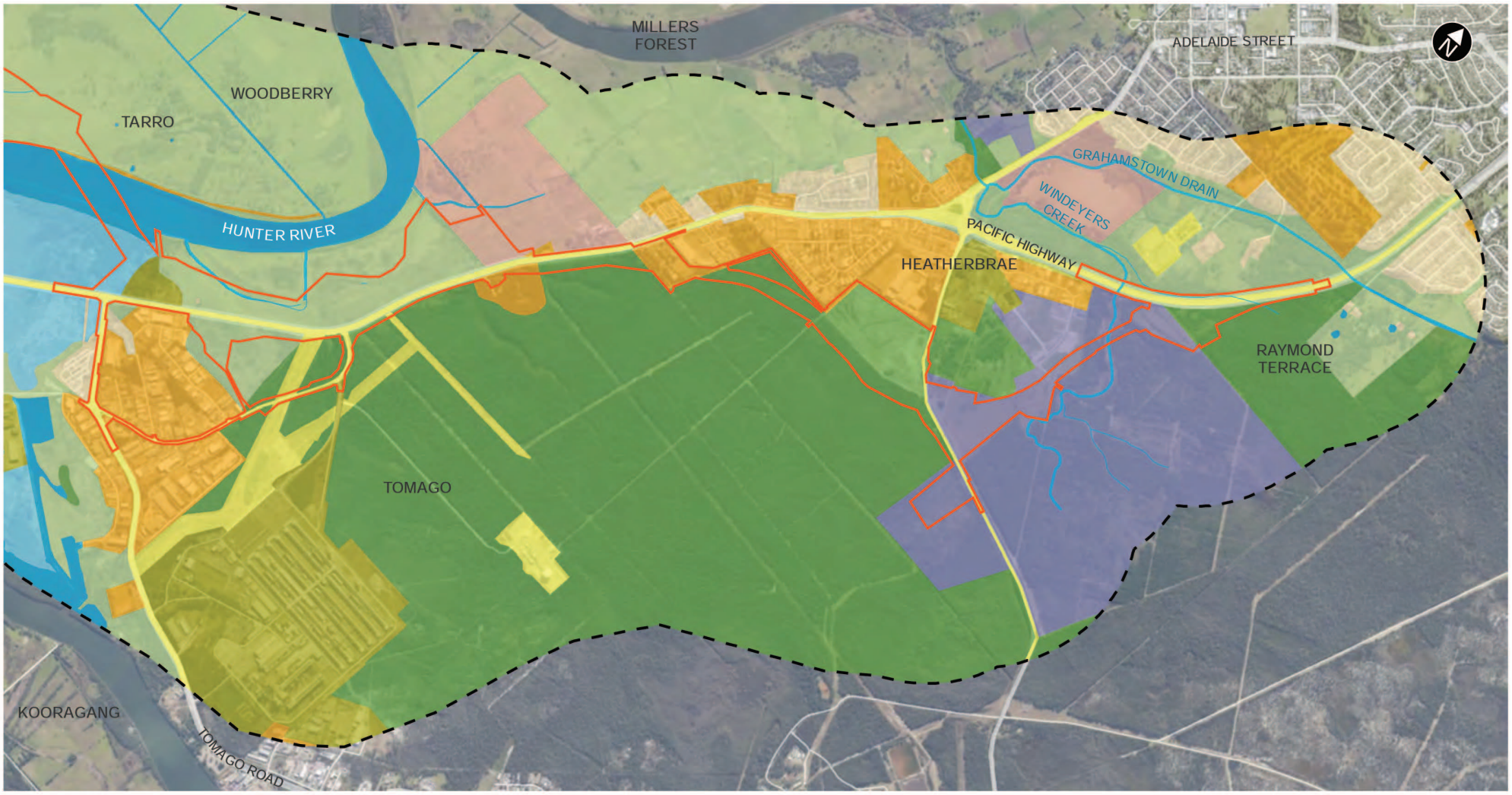

Figure 14-3 Existing land use within the study area (map 2 of 2)

14.3.4 Land use zoning

As identified in the City of Newcastle and Port Stephens Council LEPs, the study area is covered by a range of land uses, including environmental, industrial, business, residential, recreation, primary production, rural, special activities, infrastructure and waterways. The main land use zones in the study area are as follows:

- Environmental protection zones cover the largest area of land in the study area, with this mainly comprising land zoned environmental conservation (E2) at Black Hill, Tarro, Tomago and Heatherbrae. Land zoned for environmental living (E4) is also located at Black Hill and Tarro
- Industrial zones cover the second largest land area, with this mainly comprising general industry zoning (IN1) at Tomago and Heatherbrae. Other land zoned for industrial uses is located at Beresfield and Black Hill (zoned light industrial) and Hexham (zoned heavy industrial)
- Land zoned for special purposes includes:
  - Special activities (SP1) such as the Hunter Water Corporation land, including the Hunter Region Botanic Gardens in Heatherbrae and Raymond Terrace Wastewater Treatment plant at Raymond Terrace
  - Infrastructure (SP2) which includes roads within the study area, the Main North Rail Line at Tarro and Newcastle Memorial Park at Beresfield.
- Rural zones mainly comprise rural landscape zoning (RU2) at Heatherbrae and Raymond Terrace.

As described in **Section 4.2.2**, a road corridor for the project was reserved in the City of Newcastle and Port Stephens Council LEPs in 2010. Within the City of Newcastle LGA, the gazetted road corridor extends from the M1 Pacific Motorway at Beresfield, south of John Renshaw Drive to the New England Highway, crossing the Hunter River next to Hexham Bridge. Within the Port Stephens Council LGA, the gazetted road corridor generally follows the Pacific Highway and main alignment east of Heatherbrae. Land use zoning in the study area is shown on **Figure 14-4**.

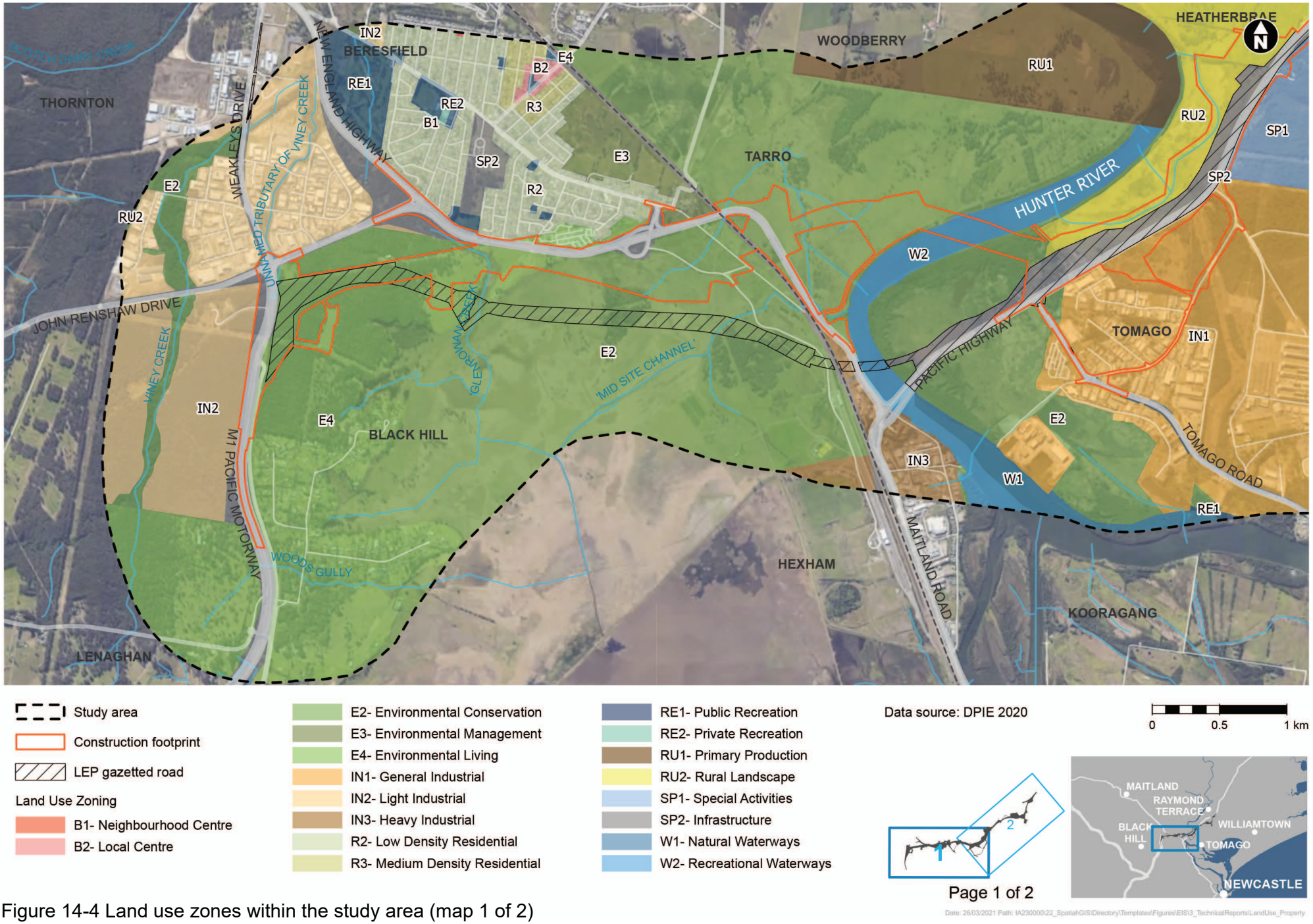

Figure 14-4 Land use zones within the study area (map 1 of 2)

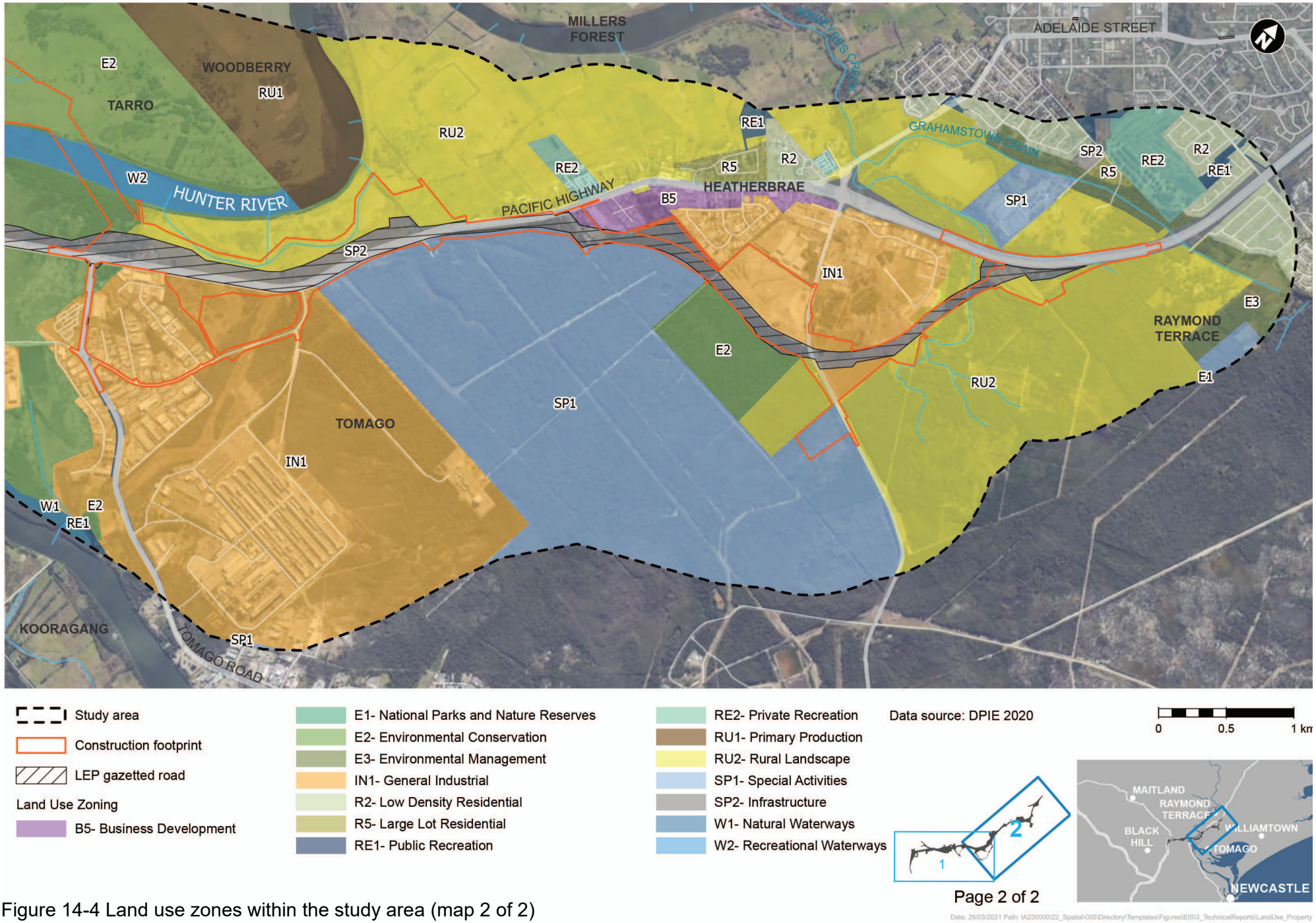

Figure 14-4 Land use zones within the study area (map 2 of 2)

14.3.5 Mining

One Mining Lease (ML) and one Exploration Licence (EL) were identified within or near the study area (refer to **Figure 14-5**):

- ML1618, held by Donaldson Coal Pty Ltd, covers the Abel underground coal mining operation at Black Hill, which is located west of the M1 Pacific Motorway and southwest of Beresfield. The Abel underground coal mine was placed in care and maintenance in 2016
- EL5497, which is also held by Donaldson Coal Pty Ltd, expired on 21 July 2019 but renewal of this licence has been sought.

The study area is also covered by an assessment lease (ALA71, refer to **Figure 14-5**) held by Donaldson Coal Pty Ltd which allows the lease holder to maintain an authority over a potential area and continue exploration to assess the viability of commercial mining.

In addition, the Black Hill Mine Subsidence District is located within the study area, as described in **Chapter 22** (safety and risk) and shown in **Figure 14-5**.

14.3.6 Utilities

As described in **Section 5.3.15**, several utilities and associated infrastructure are located within or near the construction footprint, including:

- Electricity supply and street lighting: TransGrid (high voltage transmission lines) and Ausgrid
- Telecommunications: Telstra, Optus, NBN and Nextgen optic fibre and telephone cables
- Gas: Jemena and AGL
- Water and sewer services and infrastructure: Operated by Hunter Water Corporation and includes the Chichester Trunk Gravity Water Main.

AGL also proposes to construct a 250 megawatt gas fired power station within the study area at Tomago with gas pipelines and electricity transmissions lines (the proposed power station). The proposed power station is due to be operational prior to the commencement of construction of the project. The site for the proposed power station is located between the Pacific Highway and Old Punt Road, north of the Tomago industrial area.

14.3.7 Water users

No water access licenses are located within the construction footprint. Five water access licenses are registered within the study area. These provide water for irrigation, industrial uses, drainage, dewatering and at the Hunter Region Botanic Gardens.

The Tomago Sandbeds are located in the vicinity of the project and extend from Tomago to Port Stephens within land owned by Hunter Water Corporation. The Tomago Sandbeds are also located within the Tilligerry State Conservation Area and a designated ‘Special Area’ in the *Hunter Water Act 1991* protected as a public drinking water supply by Hunter Water Corporation (Hunter Water 2020). The Tomago Sandbeds provide about 20 per cent of the Lower Hunter’s drinking water (Hunter Water 2019).

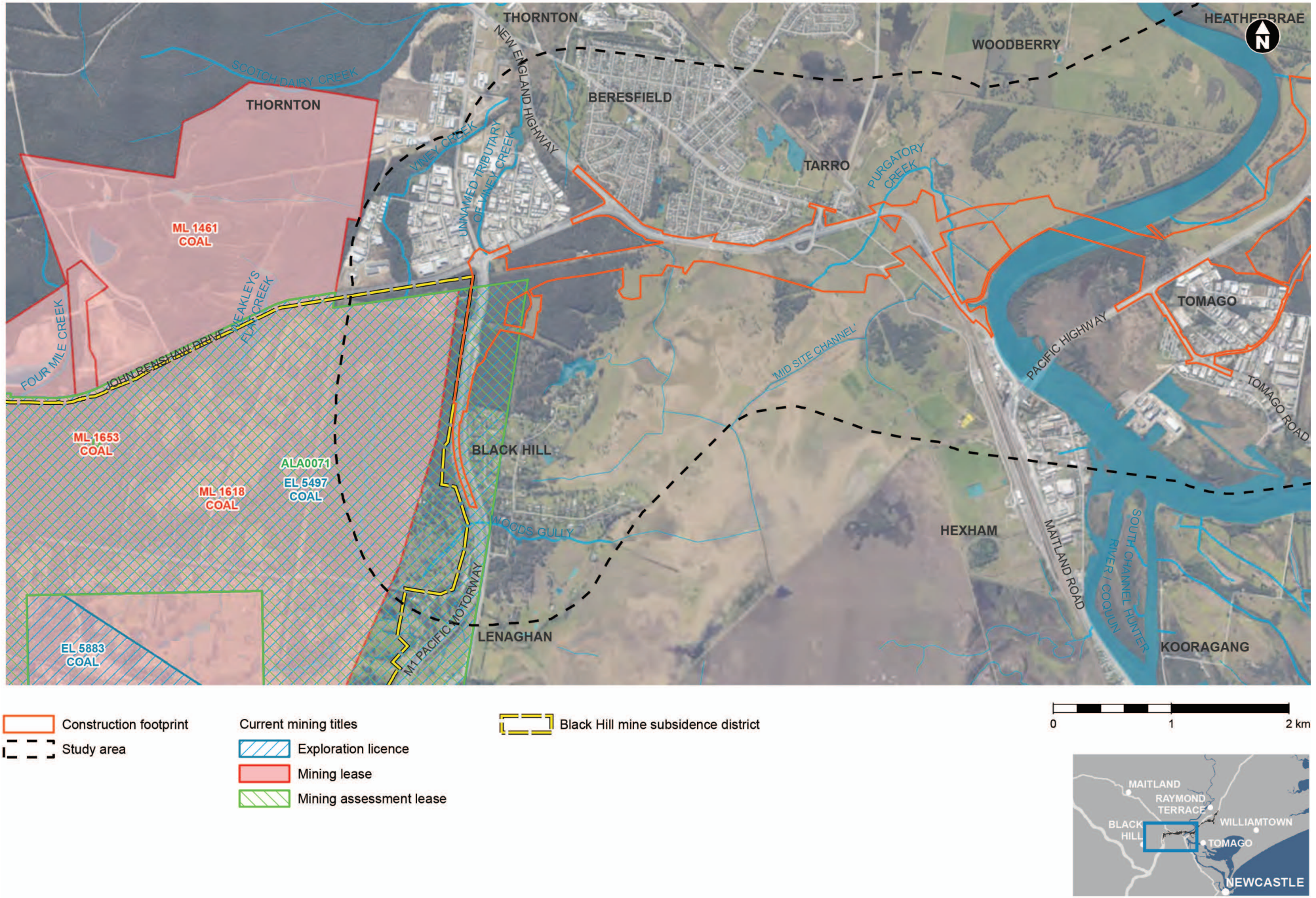

Figure 14-5 Mining activities within the study area

14.3.8 Future land use

The study area is covered by the Hunter Regional Plan 2036 (DPE 2016) and Greater Newcastle Metropolitan Plan 2036 (DPE 2018), which outline the future land use vision for the Hunter and Greater Newcastle areas and provide frameworks for land use planning priorities and decisions.

Raymond Terrace will be the focus of population and employment growth over the next 20 years. Tomago, Heatherbrae and the convergence of the national road network around Thornton, Beresfield and Black Hill are identified as significant employment precincts. The Greater Newcastle Metropolitan Plan (DPE 2018) also identifies Beresfield, Black Hill and Tomago as major employment precincts and trading hubs.

Beresfield and Black Hill are proposed to be a freight and logistics hub, with complementary manufacturing and light industrial activity. Three precincts are identified within this location, including:

- Beresfield Precinct, which will support freight and logistics, manufacturing, and other light industrial uses
- Emerging Black Hill Precinct, located west of the M1 Pacific Motorway, which is proposed to be the subject of a master plan that considers freight and logistic uses, the adjoining mine site and road access to John Renshaw Drive
- Thornton Precinct, which is proposed to support expanded business and light industrial uses.

Tomago is proposed to be an advanced manufacturing and industrial area, and local planning for the Tomago Industrial Precinct will look to enable the efficient movement of goods. Further, the Tomago Shipbuilding Precinct is identified as a location to promote the development of shipbuilding industries.

14.4 Assessment of potential impacts

14.4.1 Property

As described in **Chapter 4**, the project development has been an iterative process. The following key refinements were made to the project design to address property and land use issues:

- Property severance impacts:
  - Reducing the area of property acquisition and severance of agricultural land in Black Hill and Tarro by moving the main alignment next to existing road infrastructure
  - Locating the main alignment next to existing road infrastructure north of Tomago to minimise impacts to property and vegetated areas
  - The viaduct across the Hunter River floodplain allows access and use of land either side of the project.
- Access impacts:
  - Maintaining access to property through the provision of new accesses (where required) including at the Hunter Region Botanic Gardens
  - Development of an oversize overmass (OSOM) strategy to allow for large freight movements for adjoining employment and heavy industry land uses.
- Impacts on future development:
  - Widening of the bridge at the Black Hill Interchange to allow for future development
  - Consolidation of the Tomago and Heatherbrae interchanges into a single interchange to minimise impacts on the proposed power station
  - Maintaining the main alignment on the approach to the Raymond Terrace Interchange behind the industrial estate to minimise impacts to the industrial development.

- Other property impacts:
  - Moving the main alignment at Tarro to the south to avoid directly impacting a dwelling
  - Raising the height of the motorway through the Hunter Water Corporation land in the Tomago Sandbeds Catchment Area to aid in avoiding future water quality impacts on the catchment area.

The following residual property impacts are detailed in the sections below.

Directly affected properties

Transport have progressively purchased 43 lots for the project, comprising several properties, held by private landowners and local councils.

A total of 36 lots held by 18 property owners would need to be acquired for the project, in addition to those previously purchased by Transport. The project would also require temporary agreements with landowners to accommodate ancillary construction facilities such as worksites, bridge construction support, compounds, laydown areas and parking area. Details on the properties subject to property acquisition or temporary lease are provided in **Table 14-3** and shown in **Figure 14-6**.

Ownership of land directly affected, needing property acquisition or temporary agreements by the project comprises:

- Fifteen properties that are privately owned, including nine properties that are owned by a company
- Three properties owned by the City of Newcastle
- One property owned by the rail operator Aurizon
- Two properties owned by the energy provider AGL
- Five properties owned or managed by government agencies such as Hunter Water Corporation and Crown Land.

A strip of Crown land temporarily and permanently impacted by the project is located along the banks of the Hunter River.

Land within the Main North Rail line corridor owned by Transport and maintained by the Australian Rail Track Corporation (ARTC) would also be directly affected by the project, although this would not impact on the ongoing operation of the rail line.

Land use

Most land directly affected by the project comprises rural uses, utilities infrastructure and areas of native vegetation, however some properties subject to acquisition or temporary lease are comprised of dwellings, vacant land associated with a residential village, commercial uses and social infrastructure.

Partial acquisition of land may also result in severance or fragmentation of some rural properties, particularly larger land holdings comprising multiple lots. Access to residual property parcels would be maintained via existing local roads or new service roads constructed as part of the project. The viaduct across the Hunter River floodplain would also allow access to be maintained within and between properties located either side of the project.

Properties identified for temporary lease during construction generally comprise areas of rural land, and industrial and commercial uses. The property owner's use of, and access to, land subject to temporary lease arrangements would be disrupted during the construction period. Following construction, these areas would be reinstated to pre-construction use, including the reinstatement of any affected infrastructure such as fencing, as agreed with the property owner. Rehabilitation of rural land subject to temporary lease would be carried out in accordance with relevant guidelines to minimise the potential for ongoing risks to rural land uses, for example increased erosion.

Table 14-3 Summary of properties to be acquired or leased

Property ID	Lot/ DP (Bold to be acquired)^	Ownership	Land use*	Total property area (ha)	Property within operational footprint (ha) (per cent of total area)†	Additional property required for construction (ha) (per cent of total area)†	Infrastructure affected
1	10/DP1186448	City of Newcastle	Vacant / vegetated land	1.55	–	1.47 (94.3%)	–
2	**102/DP846451**, **1617/DP1153099**	Hunter Water Corporation	Access track / electricity transmission line easement	1.91	0.04 (1.9%)	1.88 (98.1%)	–
3	13/DP553141, 12/DP553141	City of Newcastle	Landscaped buffer for Pasadena Crescent Reserve Soccer Fields	2.64	–	0.25 (9.5%)	–
4	52/DP551256	City of Newcastle	Utilities infrastructure	0.41	–	0.41 (100%)	Council facility, including fencing and sheds
5	**1/DP1181217**	Private – company	Unused land (Palm Valley Village covering remainder of property)	2.34	0.27 (11.6%)	–	–
6	**2/DP873320, 4/DP735235**	Private	Rural land with dwelling	203.26	14.61 (7.2%)	2.15 (1.1%)	Dwelling, business signage, fencing, stock yards, access tracks
7	**103/DP1084709, 1/DP735456, 101/DP1084709, 32/DP234979, 9/DP842856**	Private	Rural land (grazing), electricity transmission line easement	21.01	18.30 (87.1%)	–	Fencing, dam
8	**1/DP128309**	Hunter Water Corporation	Underground water pipeline easement	2.44	0.68 27.9%)	0.32 (13.2%)	Fencing

Property ID	Lot/ DP (Bold to be acquired)^	Ownership	Land use*	Total property area (ha)	Property within operational footprint (ha) (per cent of total area)†	Additional property required for construction (ha) (per cent of total area)†	Infrastructure affected
9	**102/DP1084709, 10/DP735235, 2/DP735456**, 104/DP1084709, 5/DP227556, 6/DP227556, 13/DP842856	Aurizon Operations Limited	Access road for Hexham Train Support Facility, rural land	47.50	12.20 (25.7%)	5.24 (11.0%)	Fencing, access tracks
10	12/DP842856	Hunter Water Corporation	Water utilities infrastructure	0.01	–	0.01 (100%)	Pipeline infrastructure
11	**100/DP1044020**	Private	Rural land with dwelling	8.30	0.95 (11.4%)	3.89 (46.9%)	–
12	11/DP1149091, 1/DP520550	Private	Rural land with dwelling	53.68	–	2.23 (4.1%)	Fencing, signage, water channel
13	1/DP1165954	Private	Rural land, access track	0.21	–	0.01 (6.5%)	–
14	**7300/DP1163794, 7310/DP1165716**	Crown land	Riverbank of Hunter River	15.15	1.36 (9.0%)	0.55 (3.7%)	–
15	**102/DP1038663**	Private – company	Vegetated land / wetland	32.60	9.97 (30.6%)	–	–
16	**43/DP558481**	Private	Vacant land (part of larger property accommodating Tomago Village Van Park)	1.81	0.32 (17.9%)	–	–
17	1/DP32464	Private – company	Commercial use	0.28	–	0.28 (100%)	Shed
18	**2/DP1043561, 3/DP1043561**	AGL Macquarie Pty Ltd	Rural land with dwelling (site of proposed power station)	27.91	6.89 (24.7%)	3.01 (10.8%)	Dwelling

Property ID	Lot/ DP (Bold to be acquired)^	Ownership	Land use*	Total property area (ha)	Property within operational footprint (ha) (per cent of total area)†	Additional property required for construction (ha) (per cent of total area)†	Infrastructure affected
19	**1203/DP1229590**	AGL Energy Limited	Gas pipeline easement (Newcastle Gas Storage Facility)	7.47	0.42 (5.6%)	–	Access track
20	**4/DP1043561, 202/DP1173564**	Private – company	Vegetated land, electricity transmission line easement, access road for Tomago Aluminium smelter	231.85	3.06 (1.3%)	0.83 (0.4%)	–
21	1/DP450444, **1/DP748716, 18/DP1082495**, **2/DP748716, 2/DP830246, 2/DP450444, 211/DP1103169**, **1/DP830246**	Hunter Water Corporation	Vegetated land, electricity transmission line easements, Hunter Region Botanic Gardens	655.84	16.98 (2.6%)	11.07 (1.7%)	–
22	**905/DP1256183**	Private – company	Vegetated land	459.01	18.65 (4.1%)	31.33 (6.8%)	–
23	**1/DP1169886**	Private – company	Evergreen Horse Stud (training track and paddocks)	171.32	1.43 (0.8%)	8.34 (4.9%)	Training track, fencing, horse paddocks, access tracks
24	**B DP163470**	Private – company	Commercial use	1.46	1.46 (100%)	–	Shed
25	**1/DP1187992**	Private – company	Landscaped buffer for commercial use	4.65	0.39 (8.5%)	–	–
26	**906/DP1256183**	Private – company	Commercial use, forestry plantation	63.29	9.92 (15.7%)	9.90 (15.6%)	–

Notes: *land use based on the review of aerial photography, † '–' no area of property within the operational footprint / requiring additional land for construction.
'–' ^Lot/DP in bold are those currently identified for acquisition.

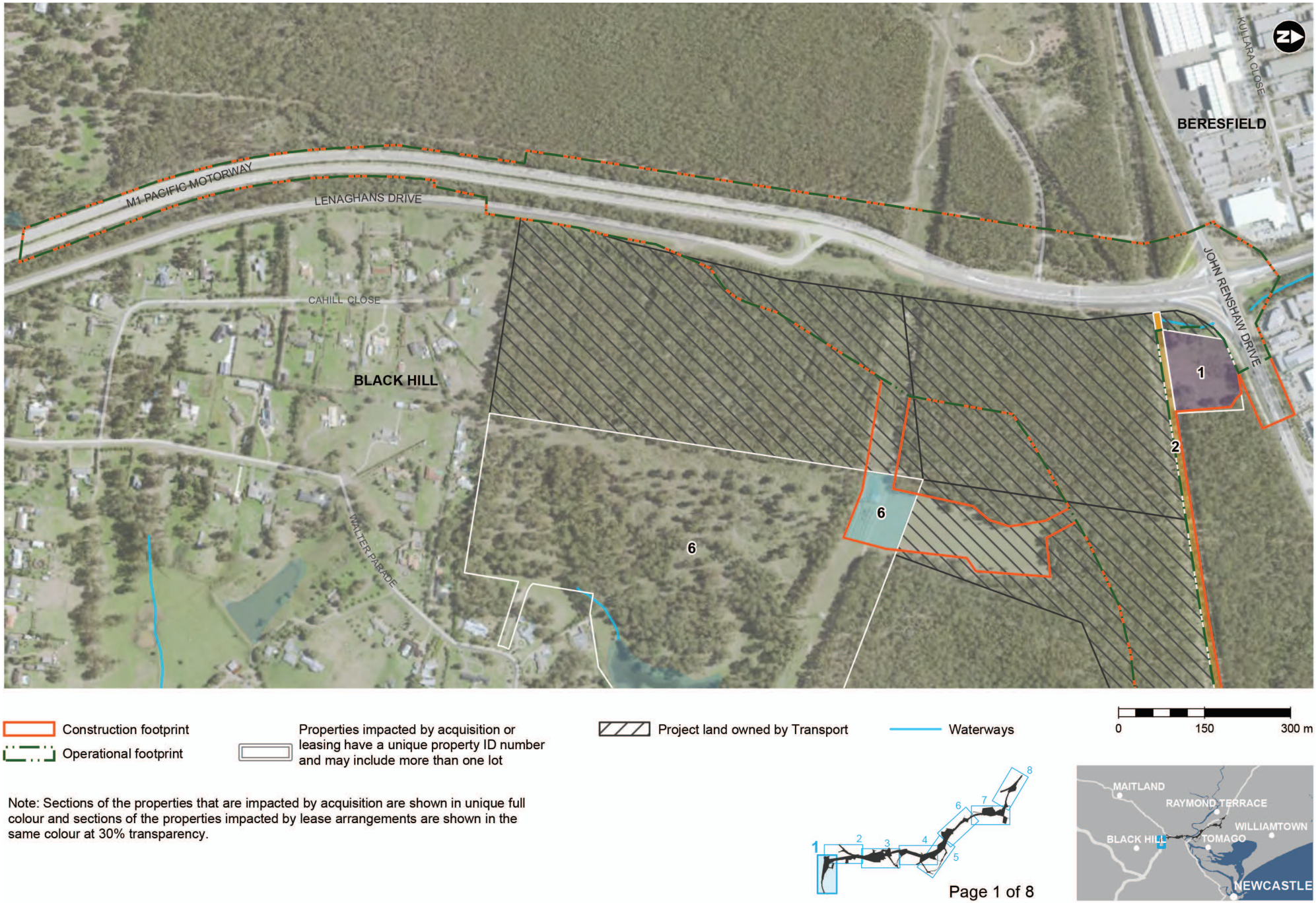

Figure 14-6 Properties impacted by acquisition or temporary lease (map 1 of 8)

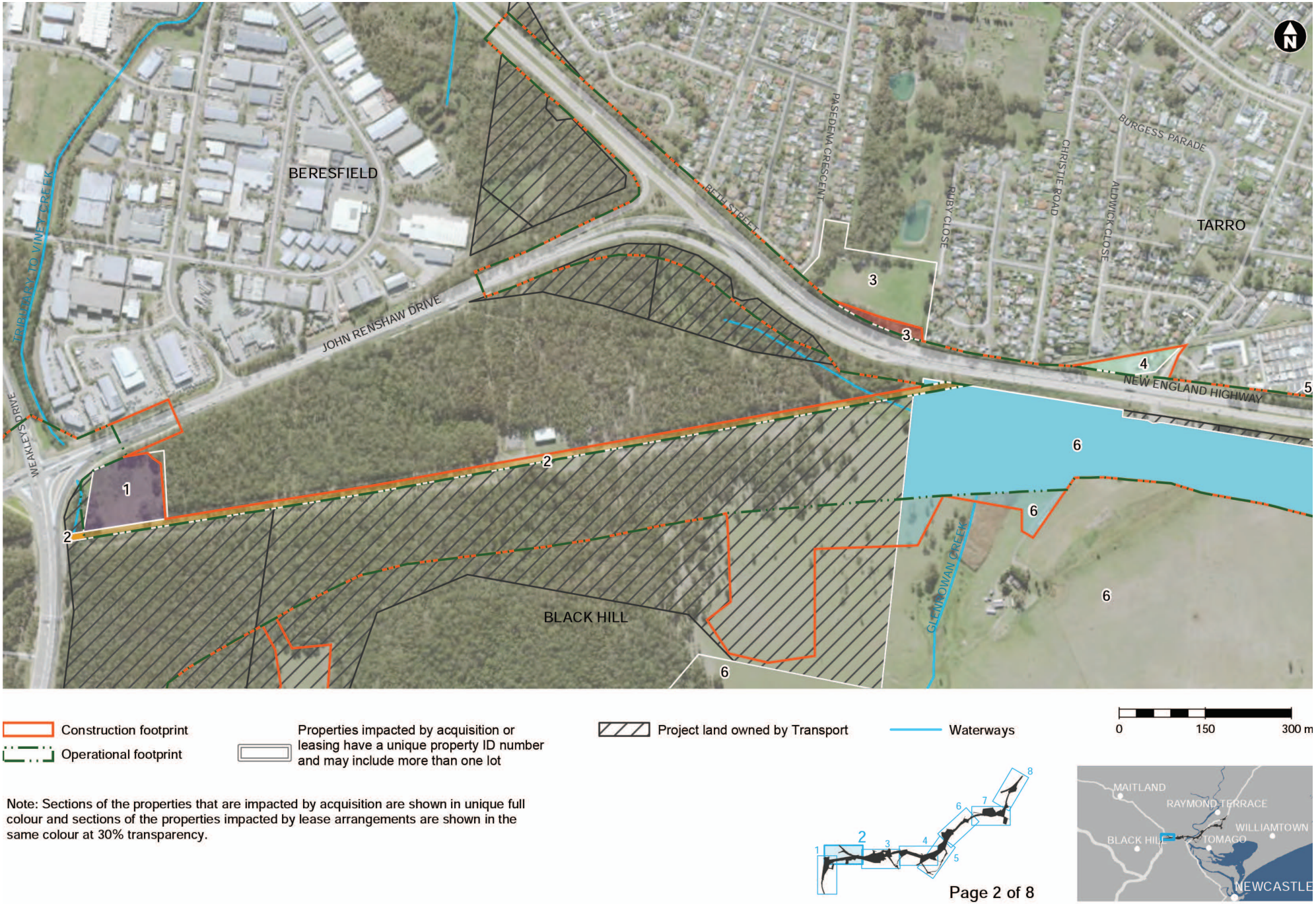

Figure 14-6 Properties impacted by acquisition or temporary lease (map 2 of 8)

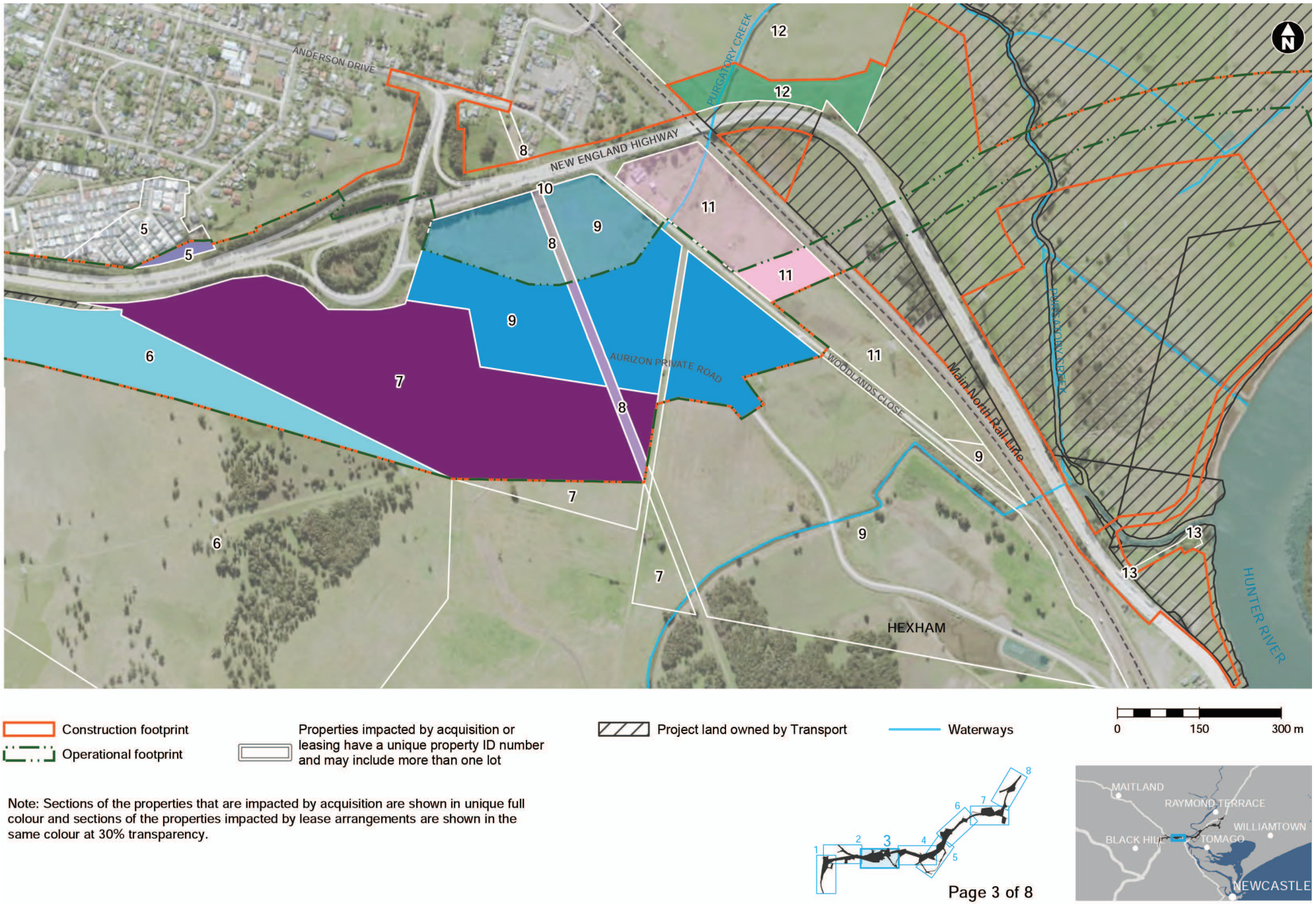

Figure 14-6 Properties impacted by acquisition or temporary lease (map 3 of 8)

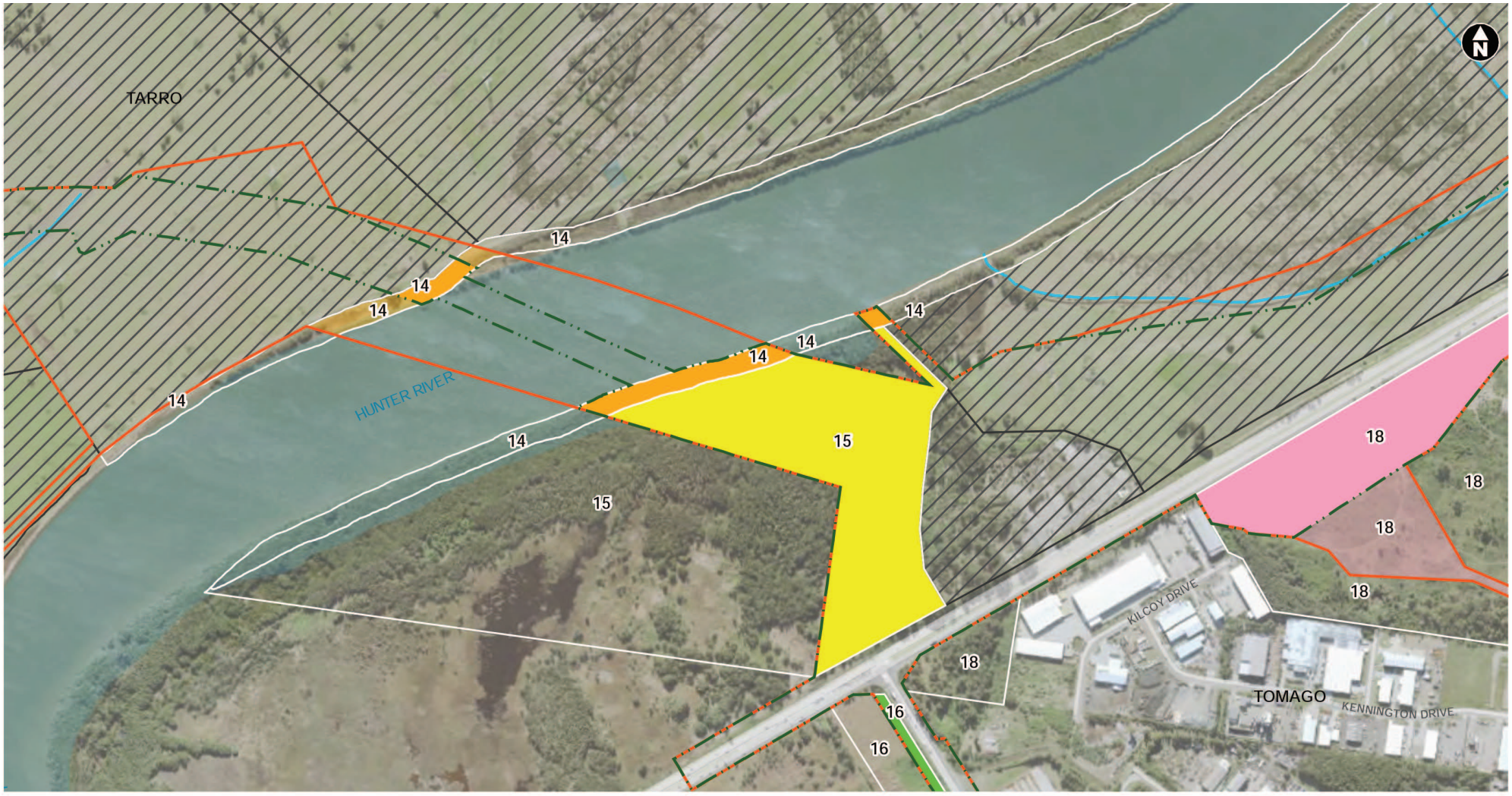

Figure 14-6 Properties impacted by acquisition or temporary lease (map 4 of 8)

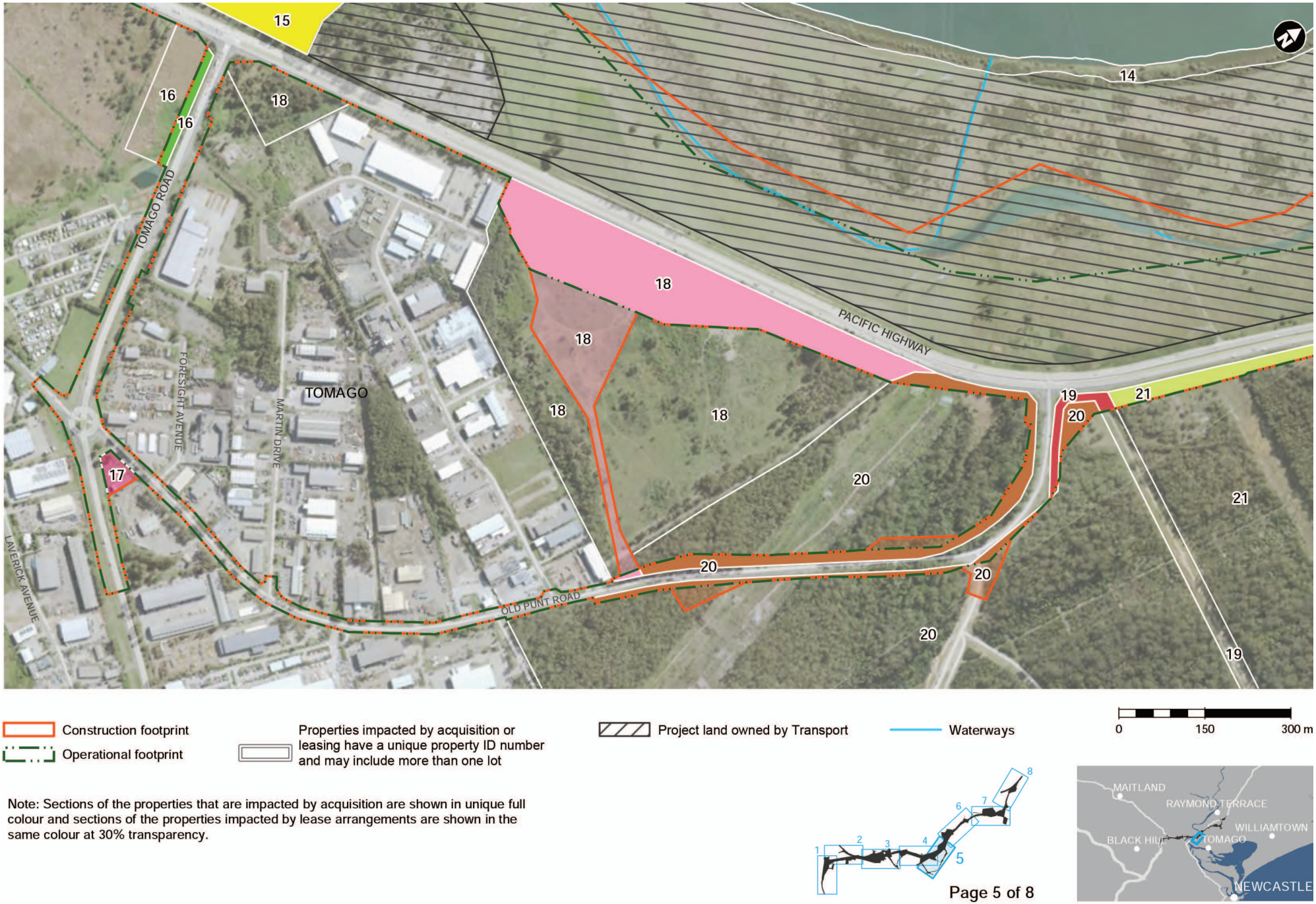

Figure 14-6 Properties impacted by acquisition or temporary lease (map 5 of 8)

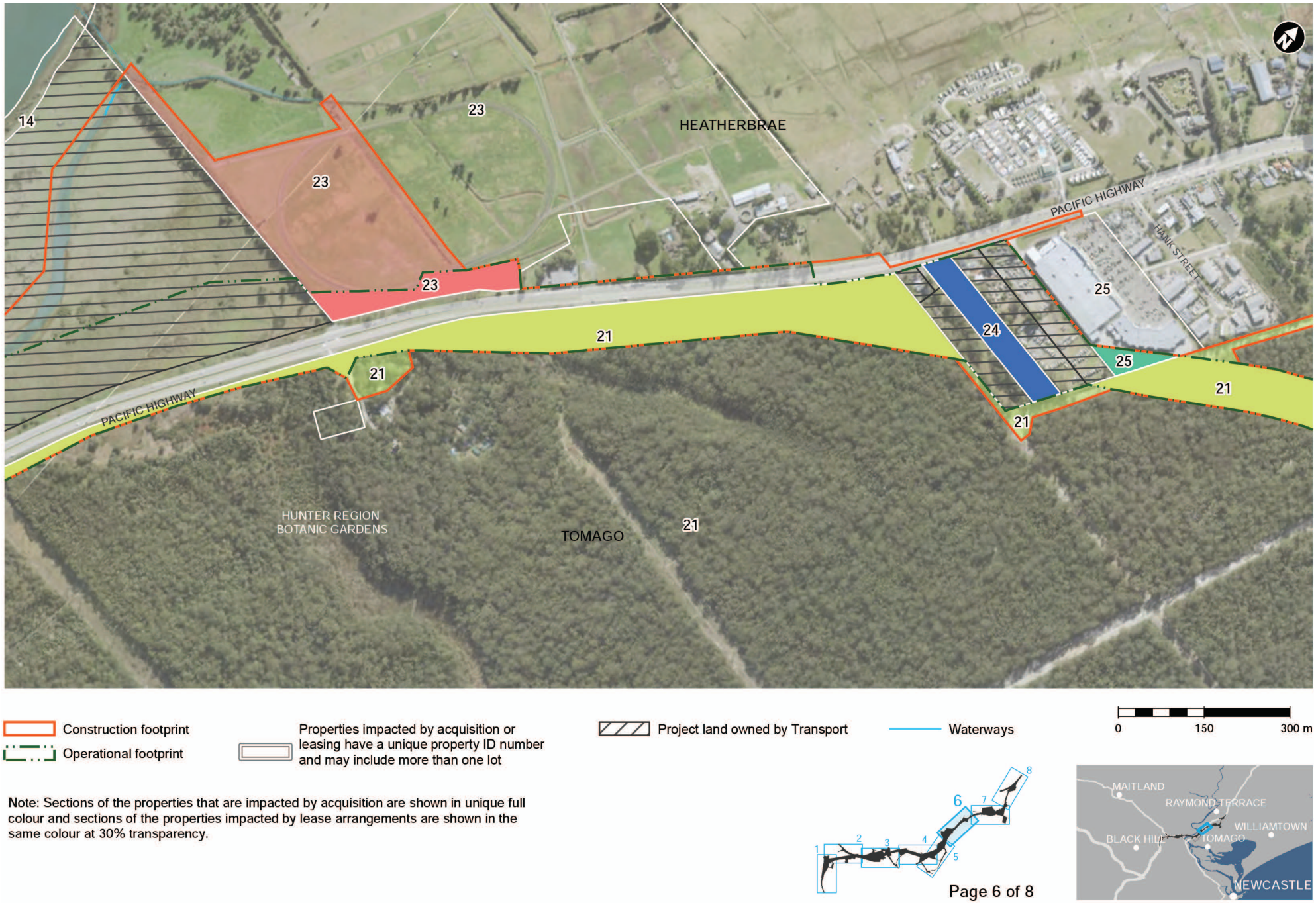

Figure 14-6 Properties impacted by acquisition or temporary lease (map 6 of 8)

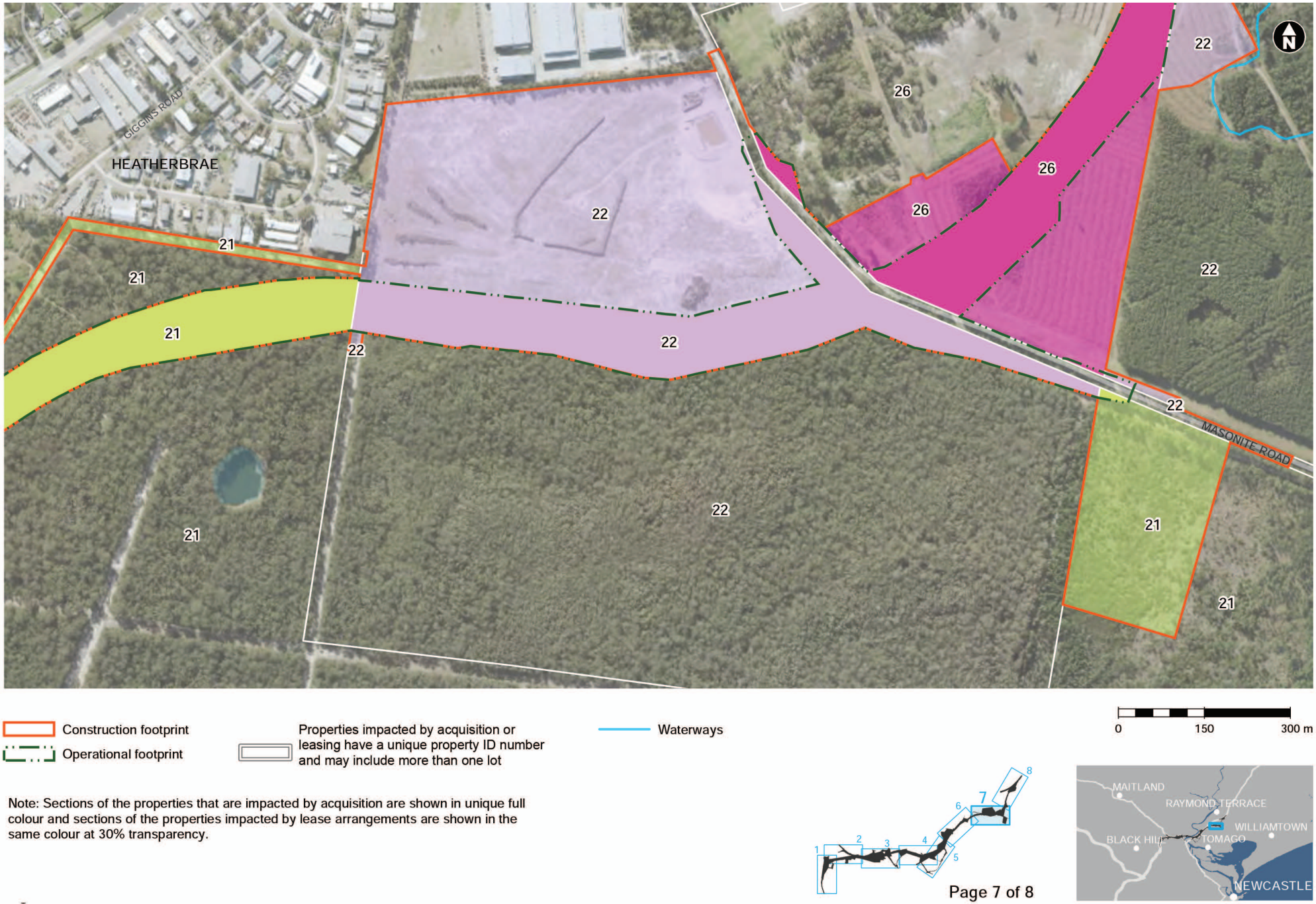

Figure 14-6 Properties impacted by acquisition or temporary lease (map 7 of 8)

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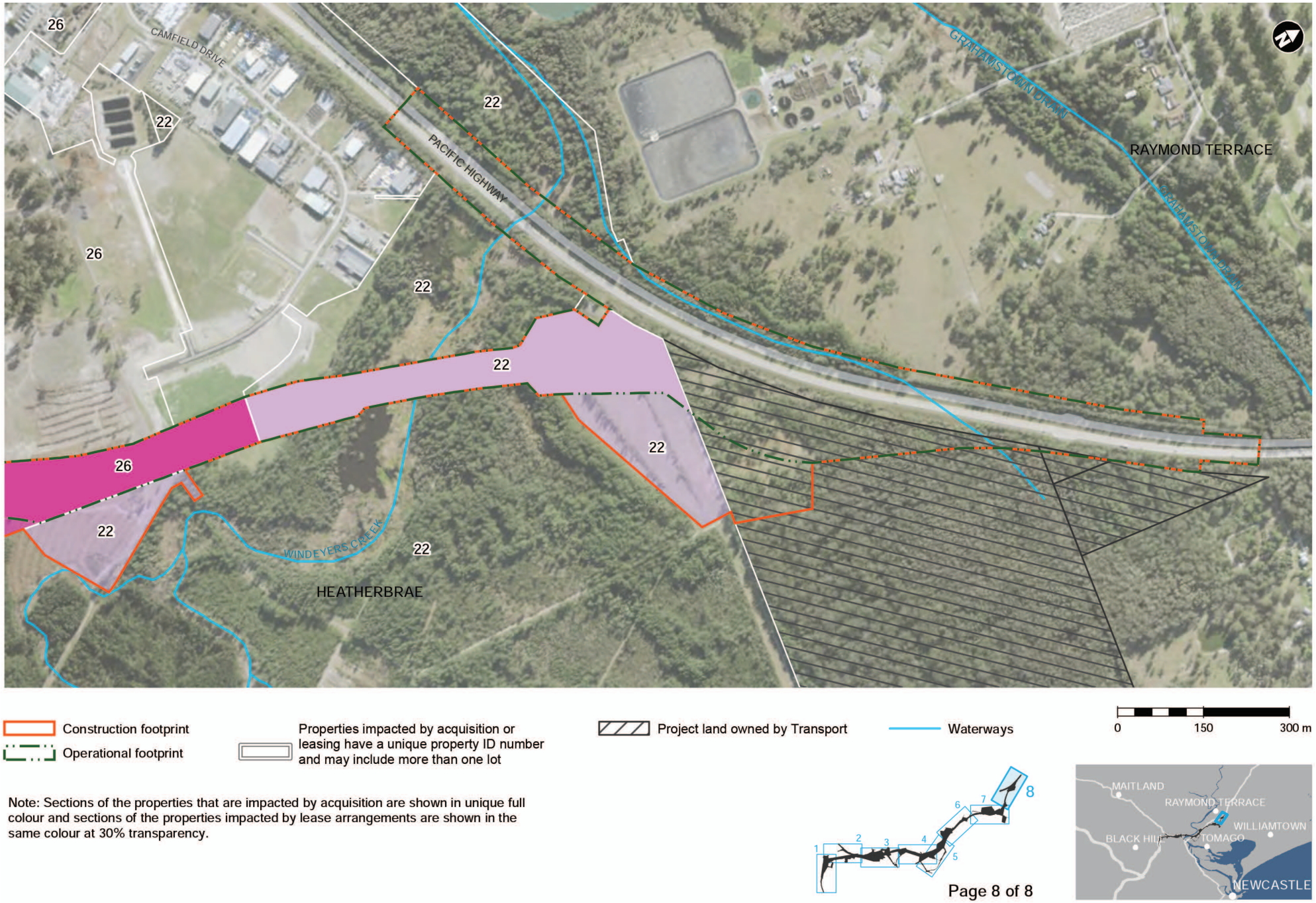

Figure 14-6 Properties impacted by acquisition or temporary lease (map 8 of 8)

Changes to property access

During construction, access to properties near to construction works would be maintained although temporary changes may be required for some properties at Black Hill, Tarro, Tomago, Heatherbrae and Raymond Terrace. Once complete, the project would be classified as a motorway owned by Transport with no direct access from surrounding properties in accordance with the provisions of the *Roads Act 1993*.

Properties that are likely to experience access changes during construction and operation are outlined in **Table 14-4**. During construction, suitable access arrangements for affected properties would be implemented in consultation with affected property owners and tenants. Where existing property access would be permanently affected by the project, access would be provided either from existing roads or new access roads provided as part of the project.

Table 14-4 Properties with access changes during construction and operation

Location	Lot/DP	Ownership	Project phase
Black Hill	122/DP1235373	City of Newcastle	Construction and operation
	10/DP1186448	City of Newcastle	Construction
	1617/DP1153099, 102/DP846451	Hunter Water Corporation	Construction and operation
	50/DP879741, 14/DP1186448	Transport for NSW (TransGrid infrastructure)	Construction and operation
Tarro	2/DP873320	Private owner	Construction and operation
	4/DP735235	Private owner	Construction
	103/DP1084709	Private owner	Construction
	52/DP551256	City of Newcastle	Construction
	10/DP735235, 2/DP735456, 104/DP1084709	Aurizon Operations Limited	Construction and operation
	100/DP1044020	Private owner	Construction
	1/DP128309	Hunter Water Corporation	Construction and operation
Hexham	1/DP1165954	Private owner	Construction
Tomago	2/DP1043561, 3/DP1043561, 4/DP1043561	AGL Macquarie	Construction and operation
	51/DP739336, 202/DP1173564	Transport for NSW (TransGrid infrastructure)	Construction and operation
	1/DP748716	Hunter Water Corporation (HRBG)	Construction and operation
	102/DP1038663	Private owner	Construction
	43/DP558481	Private owner	Construction
	2/DP1173564	Tomago Aluminium	Construction
	1203/DP1229590	AGL Energy	Construction
Heatherbrae	Lot 430/DP833938	Private owner	Construction
	B/DP163470	Private owner	Construction

Location	Lot/DP	Ownership	Project phase
Tomago / Heatherbrae / Raymond Terrace	1/DP748716, 2/DP748716, 18/DP1082495, 2/DP450444	Hunter Water Corporation	Construction and operation
	211/DP1103169	Hunter Water Corporation	
Raymond Terrace	905/DP1256183, 906/DP1256183	Weathertex	Construction and operation
	34/DP1041438	Hunter Water Corporation	Construction and operation

Property infrastructure and dwellings

Permanent adjustments would be required to some private properties for the project, including demolition or relocation of infrastructure such as fencing, dams, sheds and other directly affected structures prior to construction, due to partial property acquisition. Any adjustments to properties required for the project would be carried out in consultation with the property owner.

The project would directly impact three dwellings, including two dwellings on rural land and one dwelling associated with a commercial property at Heatherbrae. Residents of these dwellings would be required to relocate prior to the commencement of construction.

One dwelling is located within the site of the proposed power station, which is due to be operational prior to construction of the project. If the proposed power station proceeds within the timeframe expected, it is assumed that this dwelling would be removed as part of the proposed power station development and would require the residents of this dwelling to relocate. Should this occur, only two dwellings would be directly impacted by the project.

An additional dwelling is located within the construction footprint at Tarro, next to ancillary facility AS5. While this dwelling would not be directly impacted by the project, the residents of this property may be required to temporarily relocate during construction.

Flooding impacts

The project has potential to change flooding impacts for surrounding properties. During construction, raised construction access tracks around the viaduct, viaduct piers, wharf structures and permanent road embankments have potential to cause increased flood levels and potential flood hazard and duration of inundation. This would affect 19 lots and five habitable buildings. Construction of the project is not expected to result in substantial changes to flow velocities across the floodplain, with any changes mainly localised around the construction footprint. The change in flood hazard during the construction phase is also expected to be localised.

During operation, a total of 10 lots and one habitable building would experience afflux exceeding the adopted criteria during operation. The majority of existing flood-affected residential, commercial and industrial properties would experience at most, a negligible change in flood depth, flood hazards or duration of inundation. The project would also result in localised increases in flow velocities, flood hazards and duration of inundation, although potential impacts of these changes are generally expected to be negligible.

During operation, the project is expected to have negligible to minor flooding impacts on agricultural and grazing activities, emergency services (including evacuation routes) and future development potential of affected land, existing roads and rail infrastructure.

Construction and operational impacts on flooding from the project are described in **Chapter 10** (hydrology and flooding).

Local amenity impacts

Potential impacts may occur for properties near the project due to temporary and permanent changes in local amenity related to construction traffic noise, visual impacts and changes to air quality. These impacts are described in **Chapter 8** (noise and vibration), **Chapter 15** (urban design, landscape and visual amenity) and **Chapter 18** (air quality), respectively.

Residual land

As discussed above, partial acquisition of land has the potential to result in severance or fragmentation of some rural properties, particularly larger land holdings. Transport would continue to consult with property owners through the detailed design about these land parcels and possible options.

Acquisitions for the project would be carried out by Transport in accordance with the provisions of the NSW *Land Acquisition (Just Terms Compensation) Act 1991* and the Land Acquisition Reform 2016 process (**https://www.propertyacquisition.nsw.gov.au/**). The Act provides the basis for an appropriate valuation process and the fair assessment of compensation.

Where properties are only partly affected by the project, Transport would generally carry out a partial acquisition of the directly affected portion. Transport would consider the acquisition of any residual parcels created by the location and design of the project. Total acquisition offers may be triggered in instances where:

- Residual land is not developable
- Transport is unable to provide access to the residual land
- The project directly impacts and requires removal of the main residence on the property
- Transport receives a request from the property owner.

14.4.2 Existing land use

Potential impacts on existing land use from construction and operation of the project would mainly relate to:

- Direct impacts on land use, including:
  - Temporary impacts from the placement of ancillary construction facilities
  - Permanent impacts from the siting of the project.
- Changes in amenity for some land uses along the existing Pacific Highway or near to the project, associated with:
  - Noise and dust from construction activities and traffic
  - Changes in operational road traffic noise.
- Changes to property access, including:
  - Temporary changes near to construction works
  - Permanent changes due to the siting of the project.

The main land uses impacted by the construction footprint (which would directly impact about 466 hectares) and the operational footprint (which would directly impact about 300 hectares) are described in **Table 14-5**.

Table 14-5 Impacts to key land uses during construction and operation

Key land use	Area impacted	Impacts to land use
Primary production	About 219 hectares, of which about 121 hectares would be permanently impacted and changed to transport infrastructure	• Predominately impacts to grazing land, including at Beresfield, Black Hill and Tarro • The project would impact on land identified for plantation forest at Heatherbrae, although most of the affected land is identified for future industrial uses • Potential for the spread of weeds to occur between properties, potentially impacting on rural land uses • New construction access tracks may also encourage pest animals such as foxes and cats • Changes to flooding from the construction and operation of the project have the potential to impact on agricultural and grazing activities, due to increased flood extents and durations of inundation affecting productivity of land and impacts to stock flood refuge access on the floodplain. Overall, any additional impacts are considered minor compared to the existing case flood effects • The project would not impact on any land use for horticulture or cropping.
Intensive uses	Residential: About 6 hectares, of which about 3 hectares would be permanently impacted	• The affected land mainly comprises residential uses on farming land and vacant land next to residential uses at Beresfield • The project would not impact on the availability of land for residential uses in the study area or wider LGAs. • Once operational, the project would provide improved access and connectivity for existing and future residential uses in Black Hill, Beresfield and Raymond Terrace, including through improved safety outcomes and reduced travel times for motorists.
	Manufacturing / industrial: About 7 hectares is permanently impacted but it is currently not used for manufacturing/ industrial uses	• During construction, impacts would be mainly confined to vacant manufacturing and industrial land between the Hunter River and the Pacific Highway at Tomago. Opportunities to use suitable existing sites as construction ancillary facilities in the surrounding industrial areas in Black Hill, Beresfield, Hexham, Tomago and Raymond Terrace would be investigated to reduce the construction footprint • Not expected to impact on the availability of land for manufacturing and industrial uses within the study area or wider LGAs • Once operational, the project would support improved access to the M1 Pacific Motorway and Pacific Highway for manufacturing and industrial uses at Beresfield and Tomago, including through improved safety outcomes and reduced travel times for motorists and freight vehicles.
	Services: About 14 hectares, of which about 9 hectares would be permanently impacted	• This includes commercial land uses at Heatherbrae, land within the Hunter Region Botanic Gardens, and land within one property at the Tomago industrial estate • This represents a very small proportion (about 0.3 per cent) of this land use type in the City of Newcastle and Port Stephens Council LGAs.
	Infrastructure: About 98 hectares, of which about 79 hectares would be permanently impacted	• Comprising land within utility corridors for power, water and gas pipelines • Utilities would need to be relocated, adjusted or protected where they may be affected during construction particularly in areas where ground disturbance is required. This work would be carried out in consultation with the relevant service provider to minimise any service disruptions. • Once operational, it is anticipated that there would be no impacts to land used for infrastructure.

Key land use	Area impacted	Impacts to land use
	Other: About 9 hectares, of which about 1 hectare would be permanently impacted	• During construction, intensive animal production (consisting of a horse stud at Heatherbrae) would be impacted. Impact would require modifications to the training track and adjustments to the fencing and railings • The project would not impact on any land used for mining related uses.
Conservation and natural environments	About 91 hectares, of which about 62 hectares would be permanently impacted	• Most of the land affected by the construction footprint comprises managed resource protection (about 58.5 hectares), with this mainly being Hunter Water Corporation land at Tomago and Heatherbrae • The project would require clearing within these areas for the road corridor and establishment of ancillary construction sites • Areas not required for the ongoing operation of the project, would be rehabilitated and reinstated as agreed with the property owner • Impact to 0.6 hectares of a BioBank site.
Water	About 22 hectares, of which about 10 hectares would be permanently impacted	• About half the water land use area comprises land within the Hunter River, with other areas of affected land comprising marsh / wetland areas next to the Hunter River at Tomago, water pipeline easements at Black Hill and creeks at Tarro • Access would be maintained to the Hunter River for recreational and commercial uses, although temporary disruptions would occur during construction due to access restrictions near to construction works • No impacts to recreational and commercial users of the Hunter River are anticipated once the project is operational • The project would impact on the Hunter Valley Flood Mitigation Scheme due to access roads that would be constructed immediately next to the existing flood levees on the western Hunter River floodplain. While these roads may modify the structure and maintenance of the levees, they are not expected to impact on operation, function or structural integrity of the Scheme, including floodgates • The Hunter Valley Flood Mitigation Scheme would not be impacted during operation of the project.

Use of, and access to, land within the construction footprint would be disrupted during the construction period. Areas subject to temporary lease would be reinstated after construction to pre-construction use or as agreed with the property owner.

About 216 hectares of existing land uses would permanently change to transport infrastructure. This would increase the footprint of transport infrastructure within the study area from about 237 hectares to about 453 hectares. Most of the affected land uses, however, represent a very small proportion of these land uses within the wider City of Newcastle and Port Stephens Council LGAs (about one per cent or less) and are not expected to impact on the overall availability of these uses. The exceptions to this are primary production uses (about 6.4 per cent for construction and 2.6 per cent for operation) and infrastructure (about two percent for construction and operation). Further detail about the proportions of land use affected is in the Land Use and Property Working Paper (**Appendix N**).

14.4.3 Land use zoning

About 173 hectares of the project's construction footprint (37 per cent) would directly impact land zoned SP2 (Infrastructure), including land within the gazetted road corridor and existing road corridors. The remaining area of land affected by the construction of the project is zoned for a range of commercial, environmental, industry, residential, rural and recreation uses.

About 157 hectares of the operational footprint (52 per cent) would directly impact land zoned SP2 (Infrastructure). This includes land within the gazetted road corridor and existing road corridors. The remaining area of land affected by the operation of the project is zoned for a range of commercial, environmental, industry, residential, rural and recreation uses

The impacts on land zoning in the study area are further discussed in Land Use and Property Working Paper (**Appendix N**).

14.4.4 Mining

Neither the construction footprint nor the operational footprint would directly impact the area covered by the mining lease (ML1618) with the boundary for the mining lease located west of the M1 Pacific Motorway and southwest of Beresfield. This mining operation is currently in care and maintenance mode and impacts from the project are not expected.

Parts of an exploration licence (EL5497) and an assessment lease (ALA71) located on the western side of the M1 Pacific Motorway at Black Hill extend into the construction and operational footprints (refer to **Figure 14-5**). Consultation with Donaldson Coal was carried out in 2016 to advise of potential mining impacts. Works in this area are generally located within or near to the existing M1 Pacific Motorway and potential impacts on any future mining uses are expected to be minimal. Access to the exploration licence and assessment lease areas would not be permitted from the M1 Pacific Motorway. However access to these areas would be available via Lenaghans Drive and John Renshaw Drive should future exploration activities be investigated.

Potential risks associated with the Black Hill Mine Subsidence District are described in **Chapter 22** (safety and risk).

14.4.5 Utilities

The project would affect some utilities and services, including electricity transmission lines, telecommunications infrastructure, water and sewer mains, and gas pipelines.

As described in **Section 5.3.15**, utilities would need to be relocated, adjusted or protected where they may be affected by project construction, particularly in areas where ground disturbance is required. This work would be carried out in consultation with the relevant service provider to minimise any service disruptions.

Depending on the utility service being relocated, work may be required to occur outside the construction footprint to meet requirements of the utility service provider. Changes to utilities that are located outside the construction footprint would be subject to separate environmental assessment.

Potential utility relocation, adjustments or protections are summarised in **Table 14-6**. Further work would be carried out prior to construction to confirm the exact impact on utilities and any permanent relocations that would be required.

Once operational the project is not expected to impact further on infrastructure and utilities in the study area.

Table 14-6 Summary of utility impacts

Location	Asset owner	Asset type	Summary of impact and protection strategy
• Black Hill interchange • Across the floodplain west of the Hunter River • Tomago interchange	Transgrid	Major overhead high voltage transmission lines	A minimum overhead clearance of 12m is required. The project would achieve this at Black Hill and Tomago, although is unable to achieve the minimum vertical clearance across the floodplain, west of the Hunter River. The overhead lines would be lifted in this location via the installation of a mid-span suspension structure to achieve the minimum clearance over the main alignment. A minimum horizontal clearance of 20m is required for transmission tower structures. This is achieved at the Tomago interchange. Minor embankments would encroach on the clearance at Black Hill. Transport will continue to consult with TransGrid regarding this issue.
Pacific Highway between Tomago Road and Heatherbrae	Ausgrid	Overhead and underground high and low voltage lines	High voltage overhead and underground low voltage lines near the Tomago interchange would be impacted by the project. These lines would be relocated adjacent to the realigned Pacific Highway and main alignment.
Black Hill between Weakleys Drive and Lenaghans Drive	Ausgrid	Overhead high voltage line	The high voltage overhead lines located parallel to the M1 Pacific Motorway between Weakleys Drive and Lenaghans Drive would be impacted by the project. These lines would be relocated adjacent to the project.
Black Hill, south of Weakleys Drive	Ausgrid	Overhead transmission and high voltage lines	The concrete pole supporting the overhead transmission and high voltage lines from John Renshaw Drive, east and west of the M1 Pacific Motorway, may be impacted by widening required for the project. This pole may require relocation or protection in consultation with Ausgrid.
Beresfield / Tarro between John Renshaw Drive and Anderson Drive	Ausgrid	Overhead transmission lines	The overhead transmission lines located parallel to the New England Highway between John Renshaw Drive and Woodlands Close would be impacted by the widening and realignment of the New England Highway. These lines would be relocated adjacent to the project main alignment in consultation with Ausgrid. The overhead lines that cross the New England Highway east of John Renshaw Drive and connect to Christie Road may also require minor adjustments.
Woodlands Close, Tarro	Ausgrid	Overhead high voltage transmission lines	The overhead lines located parallel to Woodlands Close would be impacted by Bridge B05. These lines would be relocated adjacent to Woodlands Close.
Heatherbrae, near Jura Street	Ausgrid	Underground and overhead high voltage lines	High voltage overhead and underground lines that intersect the project near Jura Street, Tomago. Minor adjustments to the overhead and underground lines would be required in consultation with Ausgrid.
Masonite Road, Heatherbrae	Ausgrid	Overhead high voltage transmission lines	The overhead lines located adjacent to Masonite Road would be impacted by the realignment of Masonite Road. These lines would be relocated adjacent to the realigned Masonite Road in consultation with Ausgrid. Additional minor adjustments may be required where the lines cross the main alignment north-east of Masonite Road.

Location	Asset owner	Asset type	Summary of impact and protection strategy
Heatherbrae, near Camfield Drive	Ausgrid	Overhead transmission lines and potential All-Dielectric Self-Supporting (ADSS) Fibre Optic	The overhead transmission lines and potential ADSS Fibre Optic cross the project alignment near Camfield Drive and would require minor adjustments to ensure that adequate clearances are maintained.
Pacific Highway, north of Masonite Road, Raymond Terrace	Ausgrid	Overhead high voltage and low voltage lines	The overhead electrical lines located at the Pacific Highway would be impacted by the project. A section of these lines would be relocated adjacent to the project in consultation with Ausgrid.
Tarro interchange	Hunter Water Corporation	Proposed Chichester Trunk Gravity Main (CTGM)	A substantial length of the gravity main would be beneath the project at Tarro. The CTGM would need to be either protected or relocated by the project in consultation with Hunter Water Corporation.
• Black Hill • Tomago • Heatherbrae • Raymond Terrace	Hunter Water Corporation	Water mains and sewer mains	A number of water and sewer mains would be impacted by the project. These assets will be further considered during detailed design and protected or relocated depending on their accurate location and depth.
Multiple locations within project footprint	Telstra, Nextgen, and Optus	Optical fibre and copper network	Numerous major and minor aerial and underground cables are located along and through the project and would be impacted by the project at various locations. These cables are typically located within existing road corridors. Locations where telecommunications utilities would be impacted and require either protection and/or relocation include: • The main alignment, Lenaghans Drive, Weakleys Drive and John Renshaw Drive at Black Hill • The New England Highway at Beresfield and Tarro • Woodlands Close at Tarro • Tomago Road and Old Punt Road at Tomago • The Pacific Highway at Tomago, Heatherbrae and Raymond Terrace • Masonite Road at Heatherbrae. Further survey to accurately locate these cables will be carried out during detailed design to determine the need for protection and/or relocation.
Tomago	AGL	High pressure gas main and proposed plant site	The Tomago to Hexham gas pipeline would be in the vicinity of the project and may require protection and relocation. In addition, a gas-fired power station is proposed at Tomago between the Pacific Highway and Old Punt Road, near ancillary facility AS12. The proposed power station would be in the vicinity of the main alignment, and an easement for the gas pipeline would be impacted by the project.
Pacific Highway between Tomago and Heatherbrae	Jemena	Gas main	Gas mains are in the vicinity of the project and would be relocated to avoid potential impacts.

Location	Asset owner	Asset type	Summary of impact and protection strategy
Old Punt Road, Tomago	AGL	Gas main	A gas main is located in the vicinity of the project at Old Punt Road and may require protection or relocation to avoid impacts.

14.4.6 Water users

No water access licences are located within the construction footprint or would be impacted by the project.

Construction and operation of the project has potential to impact on surface water and groundwater features within the study area, including waterways, wetlands and aquifers that have a high conservation or community value and that support ecosystems/human uses of water. During construction, potential impacts on groundwater would be associated with temporary groundwater dewatering and introduction or mobilisation of contaminants.

The project has potential to change stormwater discharges (i.e. increased runoff due to vegetation clearance and paving of the new motorway, and changes to drainage paths), which may lead to changes to the flow regimes of the existing receiving environment. This may result in impacts to local receiving waterway processes and health immediately downstream of project discharge locations from storm events, including increased erosion and water turbidity, reduced bank stability and minor increases to the duration and depth of inundation for overbank events. Impacts to surface water quality and hydrology are further described in **Chapter 10** (hydrology and flooding) and **Chapter 11** (surface water and groundwater quality).

The project would be located on land within the Tomago Sandbeds Catchment Area. Potential impacts on the water quality of the Tomago Sandbeds Catchment Area during construction and operation of the project are expected to be appropriately managed with the implementation of management measures including the lining of temporary sediment basins, permanent water quality basins and the swales leading to these basins located within the Catchment Area (refer to **Chapter 11** (surface water and groundwater quality)).

14.4.7 Future land use

Land within and surrounding the study area comprises several areas identified for future growth and development as part of the Hunter Regional Plan (DPE 2016) and as important trading hubs by the Greater Newcastle Metropolitan Plan (DPE 2018).

The M1 Pacific Motorway is a key north-south corridor linking Sydney to the Central Coast, Newcastle and Hunter region while the New England Highway and the Pacific Highway between the M1 Pacific Motorway at Black Hill and Raymond Terrace also form part of the National Land Transport Network.

The project would support future land use and development within the study area. In particular, improved access and connectivity provided by the project, such as improved safety outcomes and reduced travel times for motorists and freight vehicles, would support:

- Future employment and population growth at Raymond Terrace
- Growth and development of employment precincts at Tomago and Thornton, Beresfield and Black Hill
- Urban development within urban release areas such as West Wallsend, Cameron Park and Edgeworth south of the study area.

Improved connectivity between strategic centres and growth areas is a key objective for future planning, supporting efficiencies in freight movements and future growth, and making it easier for people to get to work, recreation facilities and services. The project would be an important part of the transport network allowing more efficient and safer access for residents, workers, businesses and freight in these locations, as well as the wider region.

Several industrial developments are proposed or planned within the study area at Black Hill, Beresfield and Heatherbrae, consistent with these strategies. In general, the project's operation would support these developments by improving access and connectivity to the motorway network.

14.4.8 Evaluation of potential land use risk conflicts

Most land use conflict risks between the project and adjoining land uses during construction and operation would be effectively managed (ratings of negligible or minor) following the implementation of management measures and environmental safeguards.

The potential impacts that are likely to have the highest risk ranking would be the impacts to land uses for other intensive uses, such as intensive animal production (for example, the horse stud at Heatherbrae), although this risk was considered to only have a minor consequence following the implementation of the appropriate management measures and environmental safeguards.

The next highest risks were generally considered to have negligible consequences following the implementation of the appropriate management measures and environmental safeguards, including:

- The permanent loss of primary production land
- Direct impact on residential dwellings
- Impacts on land used for commercial and public services, infrastructure and conservation and natural environments
- Clearing of land used for conservation and natural environment uses.

The environmental focus of the route selection for the project was to align the construction footprint with existing development and infrastructure and thereby avoid biodiversity impacts where possible. This has resulted in a construction footprint that has minimal impact to vegetation connectivity at a landscape scale due to the fact that the route follows along the edge of existing vegetation, particularly north of Tomago Road (refer to **Section 9.4.1**).

Where impacts were unable to be avoided or minimised, a number of management measures have been identified to mitigate potential impacts, outlined in **Section 14.5.**).

Further details on the outcomes of the land use conflict risk assessment are presented in the Land Use and Property Working Paper (**Appendix N**).

14.5 Environmental management measures

The environmental management measures that will be implemented to minimise the land use and property impacts of the project, along with the responsibility and timing for those measures, are presented in **Table 14-7**.

Table 14-7 Environmental management measures (land use and property)

Impact	Reference	Environmental management measure	Responsibility	Timing
Property acquisition	LU01	All partial and full acquisitions and associated property adjustments will be carried out in accordance with the requirements of the *Land Acquisition (Just Terms Compensation) Act 1991* and the Land acquisition reform 2016 in consultation with landowners. This will include the provision of monetary compensation determined in accordance with the provisions of the Act.	Transport	Prior to construction
	LU02	Property adjustments will be completed in consultation with property owners/business managers.	Transport / Contractor	Prior to construction/ construction
Rehabilitation of affected land	LU03	Land subject to temporary use will be rehabilitated as soon as practicable to an appropriate condition, taking into consideration the location, land use characteristics, area and adjacent land uses. This will be carried out in consultation with the land owner.	Transport / Contractor	Construction
Other relevant management measures				
Community consultation	SE01	A Community Communication Strategy (CCS) will be prepared for the project to facilitate communication with the community and stakeholders including relevant Government agencies, Councils, adjoining affected landowners and businesses, residents, motorists and other relevant stakeholders that may be affected by the project. The strategy will: • Identify people or organisations to be consulted during the delivery of the project • Set out procedures and mechanisms for the regular distribution of information about the project • Outline mechanisms to keep relevant stakeholders updated on site construction activities, schedules and milestones • Outline avenues for the community to provide feedback (including a 24-hour, toll free project information and complaints line) or to register complaints and through which Transport will respond to community feedback • Outline a process to resolve complaints and issues raised.	Transport/ Contractor	Prior to construction

Impact	Reference	Environmental management measure	Responsibility	Timing
Property access	TT02	Existing accesses to properties and businesses will be maintained during construction. Where this is not feasible or reasonable, temporary alternative access arrangements will be provided following consultation with the affected property and business owners.	Transport / Contractor	Detailed design/ prior to construction/ construction
Invasion and spread of weeds	B11	Weed species will be managed in accordance with 'Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects' (RTA 2011) (Guide 6: Weed management).	Contractor	Construction
Invasion and spread of pest animal, pathogens and disease	B12	Pest species and pathogens will be managed in accordance Guide 2: Exclusion zones of the 'Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects' (RTA 2011), the Commonwealth *Biosecurity Act 2015,* NSW *Biosecurity Act 2015* and where relevant, the Australian Ballast Water Management Requirements.	Contractor	Construction