

9.1 INTRODUCTION

The geographic area studied for the Draft EIS has been termed the EIS Study Area. The EIS Study Area extends beyond the area of mining and minerals processing operations at Olympic Dam and the Roxby Downs township to take in the land in the wider region of South Australia and in Adelaide and Darwin on which it is proposed to establish infrastructure. The EIS Study Area provides a context for understanding and assessing local and regional impacts.

This chapter provides a description of the current land tenure and land use within the EIS Study Area; identifies the areas where the construction and operation of the principal components of the proposed expansion would potentially affect existing tenure and uses in South Australia; and provides a summary of land uses and tenure arrangements relevant to the Port of Darwin.

Areas of land use change stated in this chapter are based on the total area of affected property allotments and linear infrastructure easement widths rather than the areas of direct disturbance as cited in Chapter 5, Description of the Proposed Expansion, and assessed in Chapter 15, Terrestrial Ecology.

Land use within the South Australian sections of the EIS Study Area, which comprise 1,339,340 hectares (ha), is predominantly pastoral, with 998,970 ha (74.6% of the EIS Study Area) dedicated to stock grazing. Other uses include conservation, defence, residential and mining (see Section 9.3).

Correspondingly, land tenure within the South Australian sections of the EIS Study Area is predominantly Crown pastoral leases (71.6%), with smaller areas held under freehold, Crown and Commonwealth tenure (see Section 9.4). BHP Billiton currently holds leasehold or freehold title over approximately 214,600 ha (16% of the EIS Study Area), including the Olympic Dam Special Mining Lease (SML), which comprises 17,800 ha (1.3%).

The relevant land in the Port of Darwin is located within an industrial region known as the East Arm Precinct, which is held under a combination of freehold and leasehold tenures.

Land is required for the proposed expansion and, in some cases, both land tenure and land use would change. The primary criteria used to determine the locations of the expansion components have been the potential for biodiversity, air quality or social impacts (see Chapters 4, Project Alternatives; 13, Greenhouse Gas and Air Quality; 14, Noise and Vibration; 15, Terrestrial Ecology; 16, Marine Environment; and 19, Social Environment). Generally, however, it has been possible to locate the components so that existing land uses are able to continue.

A review of the proposed expansion against local and regional statutory planning instruments is provided in Chapter 6, Legislative Framework. Native title claims and post-mining land use are discussed in Chapter 17, Aboriginal Cultural Heritage, and Chapter 23, Rehabilitation and Closure, respectively.

9.2 ASSESSMENT METHODS

Existing land use and tenure within South Australia were identified by a desktop review of:

- previous Olympic Dam EIS documents (Kinhill Stearns-Roger 1982; Kinhill 1997)
- relevant local government development plans
- aerial photographs
- land use data from the Department of Water, Land and Biodiversity Conservation
- information from Geosciences Australia and Atlas SA
- the Department of Planning and Local Government, the Lands Titles Office and the Department of Defence
- BHP Billiton databases of their existing landholdings (freehold, leases and easements).

South Australian tenure and zoning information was obtained from Atlas SA, the Lands Titles Office and the Department of Planning and Local Government.

Land use and land tenure information for the Northern Territory was obtained from the Northern Territory Government (Department of Planning and Infrastructure, the Land Title Office and NT Atlas).

The accuracy of the information obtained by the desktop review was tested during numerous field visits and two helicopter reconnaissances of the EIS Study Area undertaken as part of the assessment of other environmental, social and cultural disciplines. Field studies in July 2006 and September 2007 were also undertaken to define land use in parts of the EIS Study Area that had not been confirmed in previous surveys. The stakeholder consultation and engagement program was also used to assist in identifying current land use and potential impacts from the proposed expansion.

9.3 EXISTING LAND USE

The land required for the proposed storage and handling of the Olympic Dam concentrate would be located entirely within the Port of Darwin, East Arm (see Appendix E4). The area surrounding the proposed site is an industrial region known as the East Arm Precinct, which is approximately 4 km from the Stuart Highway.

Land use types in the South Australian sections of the EIS Study Area are shown in Figures 9.1 and 9.2 and are listed below in descending order of land area covered within the EIS Study Area (see also Table 9.1):

- pastoral activities
- conservation reserves
- defence activities
- mining
- typical land uses associated with regional townships (i.e. residential, commercial, industrial, utilities, agricultural, institutional, recreation and other services)
- transport and communication (i.e. roads, rail lines and utilities).

9.3.1 PASTORAL LAND

Approximately 70% of South Australia consists of pastoral land that supports stock grazing in relatively low numbers. About three quarters of the EIS Study Area (approximately 1,000,000 ha; see Table 9.1) is used for pastoral purposes (including Crown pastoral leases and freehold land), with sheep and cattle being the dominant stock.

Pastoral leases north of the Dog Fence graze cattle; leases south of the Dog Fence predominantly graze sheep and/or cattle. Figures 9.3 and 9.4 show the names and locations of pastoral stations and the position of the Dog Fence boundary in relation to the Olympic Dam operation and the EIS Study Area.

Table 9.1 Land use within the EIS Study Area

Land use type		Area (ha)	Percentage of EIS Study Area
Pastoral/grazing	Total ¹	998,970	74.6
	<i>Including</i> BHP Billiton pastoral leases	192,800	14.4
Conservation and managed resource protection areas	Total	229,530	17.1
	<i>Including</i> Arid Recovery	8,500	0.6
	Strzelecki Regional Reserve	125,600	9.4
	Lake Eyre National Park	5	0.0004
Defence	Total	23,315	1.7
	Cultana Training Area	18,685	1.4
	Woomera township	4,630	0.3
Township uses	Total	17,225	1.3
	Residential	4,875	0.4
	Services and utilities ²	12,350	0.9
Mining (Olympic Dam SML)		16,925 ³	1.3
Transport and communication		13,615	1
Other minimal use		1,445	0.1
Water bodies (marine waters, estuaries, lakes, rivers)		38,315	2.9
Total		1,339,340	100

¹ Woomera Prohibited Area within the EIS Study Area (excluding Woomera township) is used for pastoral purposes.

² Services and utilities include commercial, recreational, institutional and industrial land uses.

³ The SML covers 17,800 ha in total and includes 875 ha of Arid Recovery.

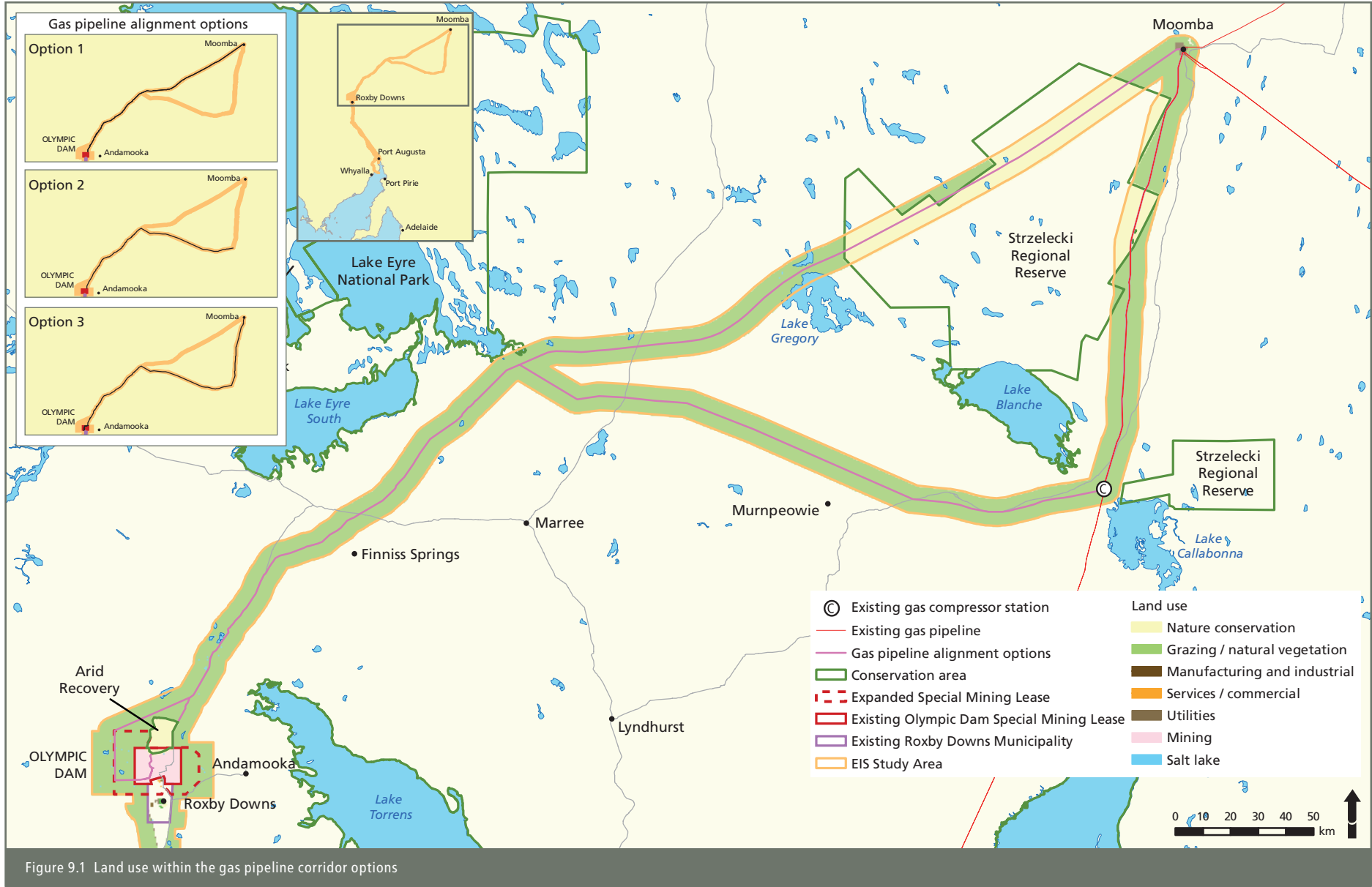


Figure 9.1 Land use within the gas pipeline corridor options

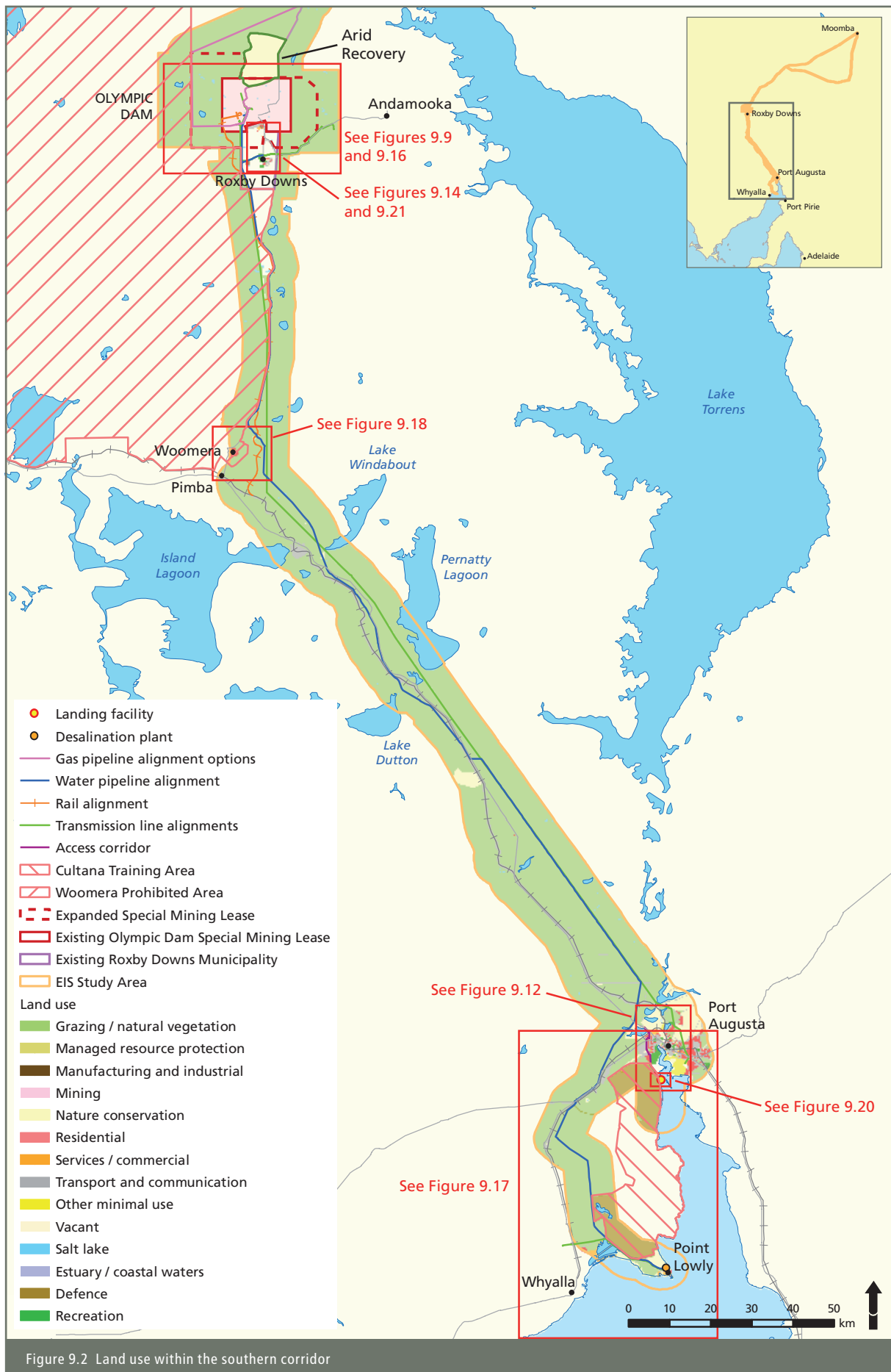


Figure 9.2 Land use within the southern corridor

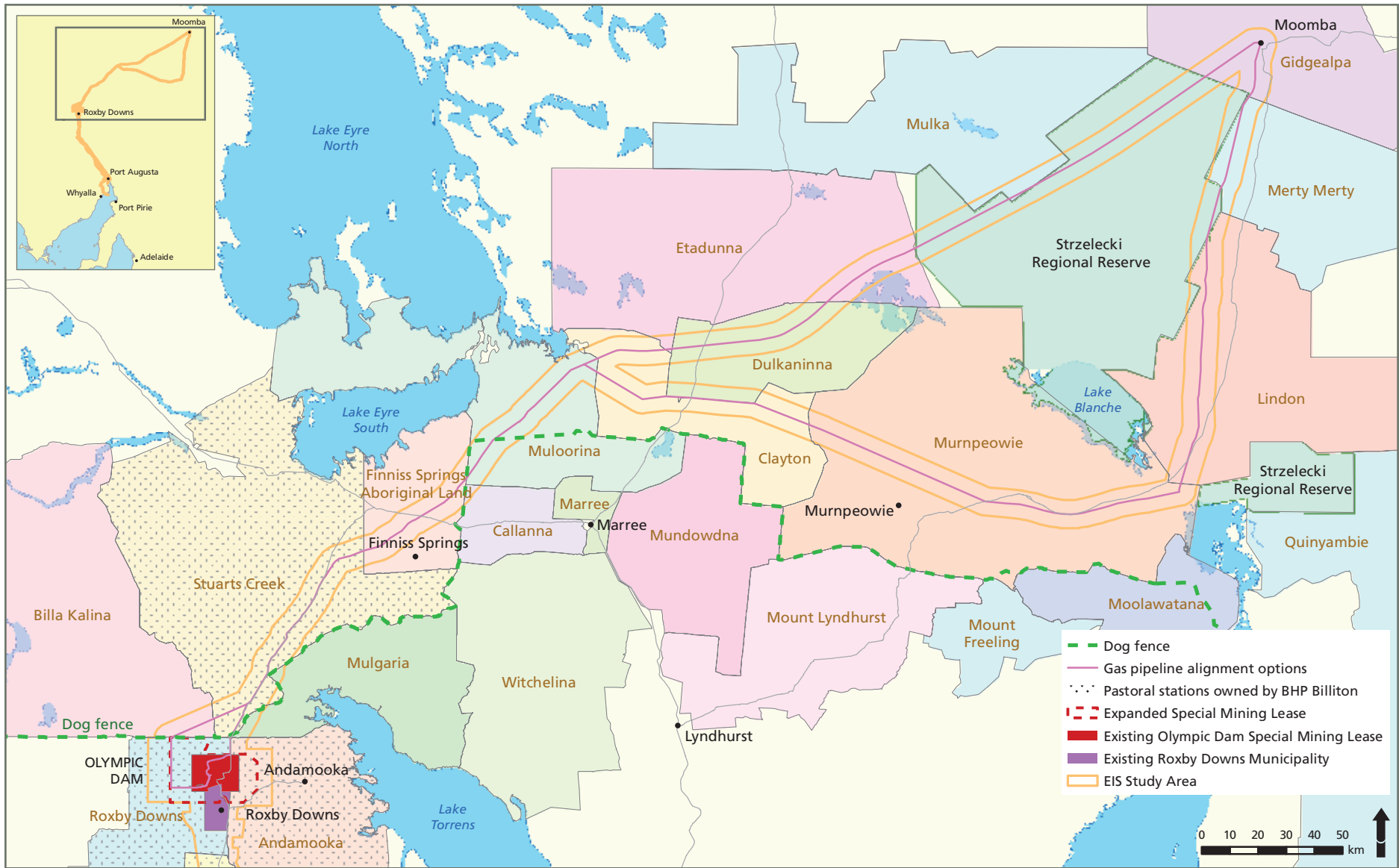


Figure 9.3 Pastoral stations within the gas pipeline corridor options

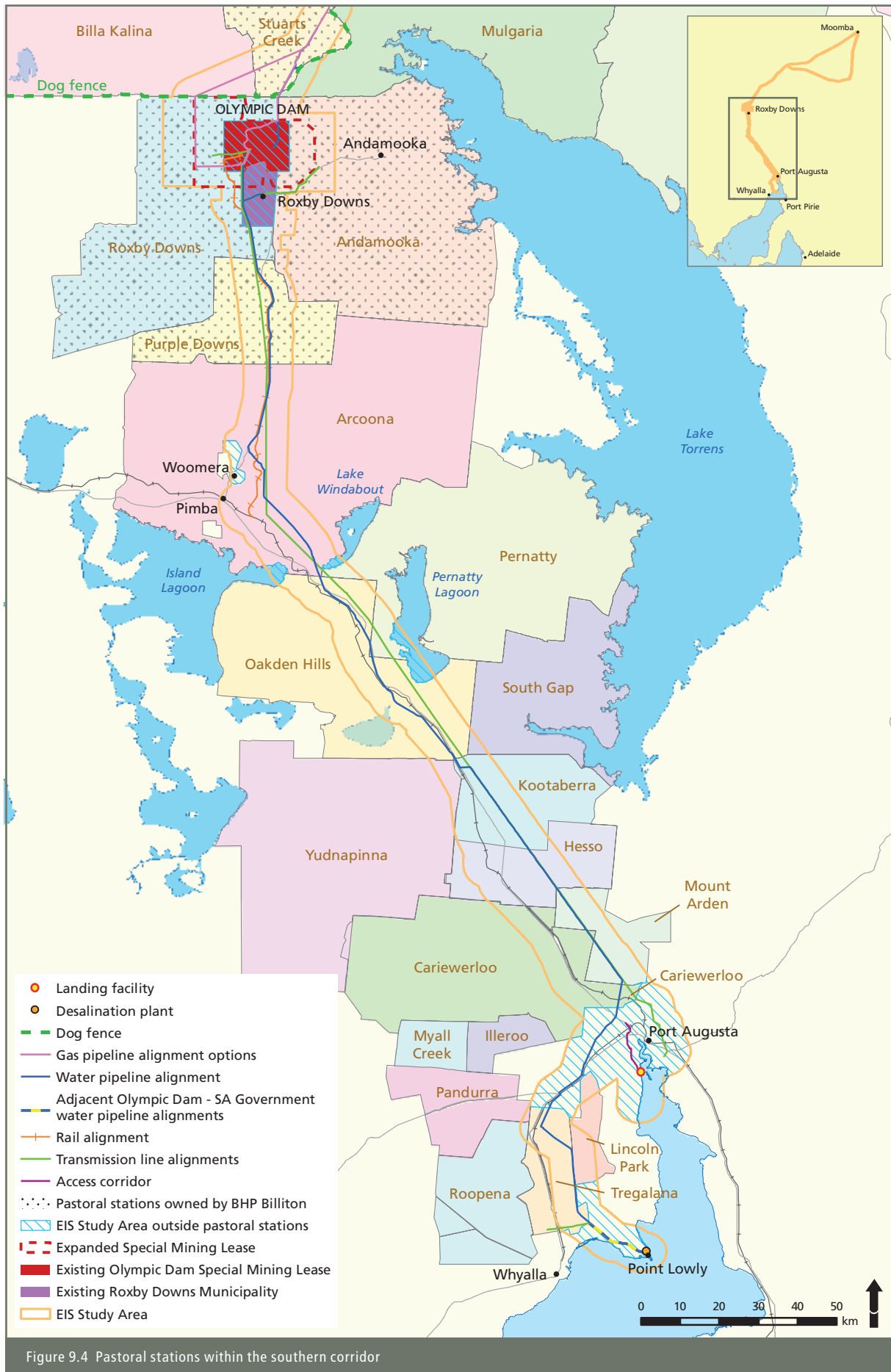




Plate 9.1 Stuarts Creek pastoral station

BHP Billiton holds four pastoral leases (in total approximately 1,153,000 ha) surrounding the Olympic Dam operation: Roxby Downs, Purple Downs, Andamooka and Stuarts Creek (see Figures 9.3 and 9.4). All four stations run cattle, while Purple Downs and Stuarts Creek (see Plate 9.1) also run sheep and camels, respectively. Kangaroos are harvested for human consumption at all four BHP Billiton stations under permits obtained from the South Australian Department for Environment and Heritage (DEH).

9.3.2 CONSERVATION AND OTHER RESERVES

Conservation and nature reserves in the Olympic Dam region and within the EIS Study Area are shown in Figures 9.5 and 9.6. Those of most relevance to the proposed Olympic Dam expansion are discussed below.

Arid Recovery

Arid Recovery is a joint conservation initiative between BHP Billiton, the South Australian Department for Environment and Heritage, the University of Adelaide and the Friends of Arid Recovery. It was established in 1997 to reintroduce threatened species into the semi-arid rangelands and to investigate the potential impacts of a mining operation on these species. It covers 8,600 ha (86 km²), including parts of the Olympic Dam SML and the Billa Kalina, Mulgaria, Stuarts Creek and Roxby Downs pastoral leases. The latter two leases are held by BHP Billiton.

Arid Recovery is an area enclosed by a rabbit, cat and fox-proof fence from which stock and feral animals have been removed (see Plates 9.2 and 9.3). The long-term goal of Arid Recovery is to control introduced predator and feral pest numbers across the Olympic Dam region so that the fence becomes redundant, allowing habitat to regenerate and creating an opportunity for threatened fauna species to thrive throughout the area.



Plate 9.2 Arid Recovery showing rabbit, cat and fox-proof fence



Plate 9.3 Arid Recovery landscape

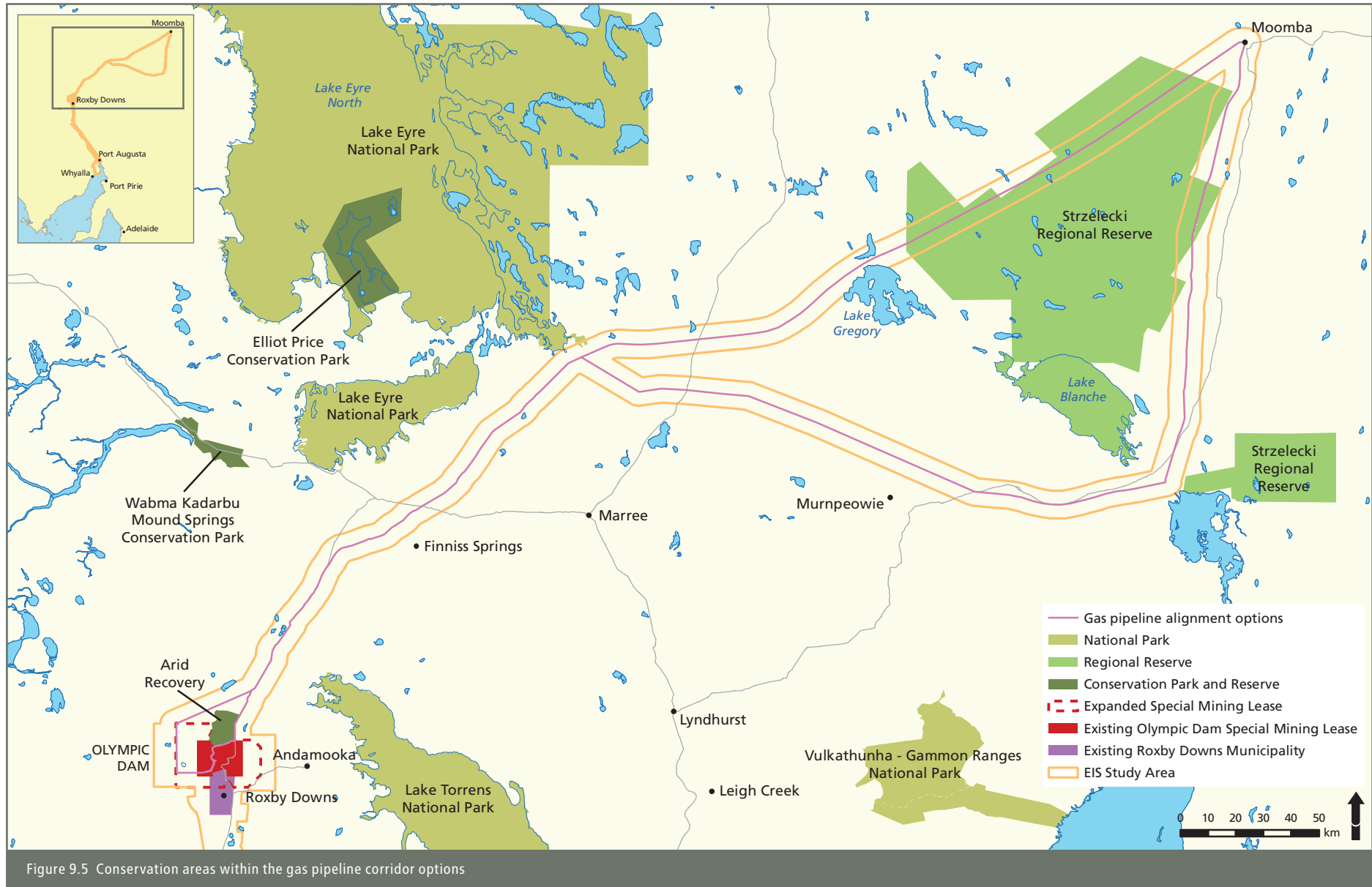
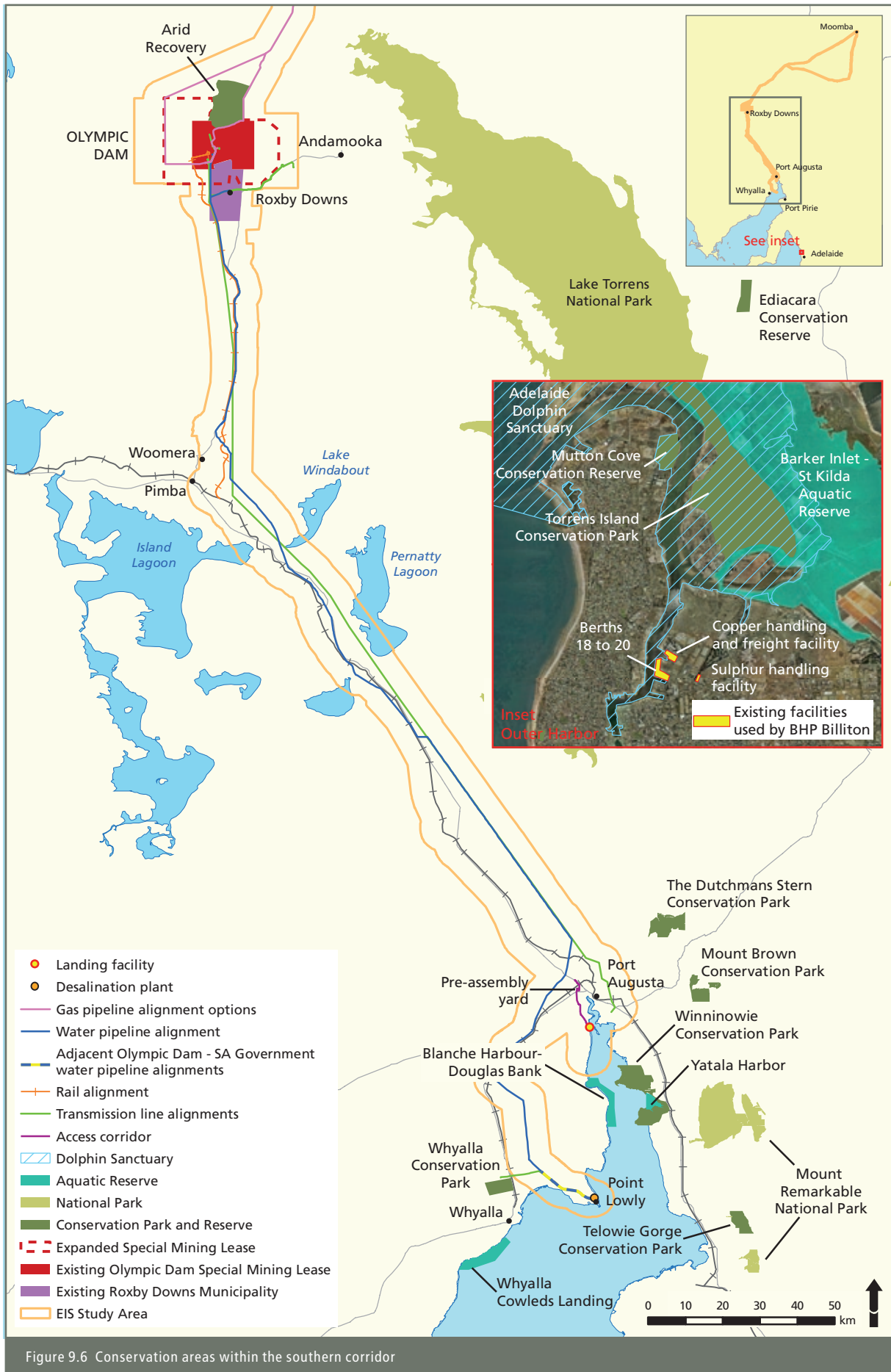


Figure 9.5 Conservation areas within the gas pipeline corridor options



Strzelecki Regional Reserve

The Strzelecki Regional Reserve is located approximately 275 km north-east of the Olympic Dam SML and comprises an area of approximately 814,200 ha.

Lake Eyre National Park

Lake Eyre National Park is approximately 180 km north-east of the SML and covers an area of 1,351,340 ha.

Adelaide Dolphin Sanctuary

The Adelaide Dolphin Sanctuary (ADS) covers 11,800 ha within the upper reaches of the Port Adelaide River, the Barker Inlet and Gulf St Vincent. The ADS also includes the Mutton Cove coastal reserve and the Torrens Island and Port Gawler Conservation Parks. BHP Billiton's existing port facilities are located adjacent to the ADS (see Figure 9.6).

9.3.3 DEFENCE ACTIVITIES

Defence establishments in the vicinity of the EIS Study Area include the Woomera Prohibited Area and the Cultana Training Area (see Figure 9.7).

Woomera Prohibited Area (WPA)

The WPA is declared under regulation 35 of the *Defence Force Regulations 1952 (Commonwealth)* as an area for 'the testing of war material'. It is an instrumented air weapons test and evaluation range used for a variety of purposes, including rocket testing. The WPA occupies an area of approximately 12.2 million ha and extends from the Woomera township to just south of Coober Pedy, with the south-eastern corner approximately 450 km north-north-west of Adelaide.

As shown in Figure 9.7, the boundary of the WPA abuts the southern extent of the Roxby Downs Municipality, and is approximately 6 km from the edge of the existing SML. The South Australian Government holds the tenure to the eastern two-thirds of the WPA. Most of this area is leased as pastoral stations, including Billa Kalina and Arcoona stations and the BHP Billiton-held Roxby Downs and Purple Downs stations.

The Woomera township (see Plate 9.4) and airbase are held by the Commonwealth and are in the south-east of the WPA, approximately 90 km south of Olympic Dam. From a peak population of about 6,000 during the 1960s, Woomera's population has declined to about 300. Between 1999 and 2003, the Department of Immigration's Woomera Reception and Processing Centre was located on the outskirts of the town.

Cultana Training Area (CTA)

The CTA is north-east of Whyalla, approximately 10 km west of Port Augusta (see Figure 9.7 and Plate 9.5). It occupies approximately 48,000 ha, although the Department of Defence plans to at least double its size by acquiring adjoining pastoral properties to the west (see Figure 9.7).



Plate 9.4 Aerial view of Woomera township



Plate 9.5 Cultana Training Area

The Australian Army uses the CTA for training, and wheeled and tracked vehicle manoeuvres. With the additional land, it could also be used for major armoured and mechanised exercises previously undertaken only in the north of Australia.

9.3.4 MINING AND ENERGY

The Gawler Craton-Stuart Shelf geological region, in which Olympic Dam is located, contains significant mineral resources. In recent years, mineral exploration of the region has intensified. Figure 9.8 shows the areas of South Australia under mining exploration leases and the State's major mine sites.

Along with Olympic Dam, other significant mining areas in northern South Australia include Coober Pedy and Andamooka (opals) (see Plate 9.6), Beverley and Honeymoon (uranium), the Cooper Basin (gas), Prominent Hill (copper) and Leigh Creek (coal and zinc oxide). Mining and exploration in the region is expected to continue well into the future.

The Olympic Dam mining facilities and metallurgical plant are located on freehold land held by BHP Billiton and held as an SML, which covers approximately 17,800 ha, which includes 875 ha of Arid Recovery (see Figure 9.9 and Section 9.5).



Figure 9.7 Defence lands associated with the study area

Most of the EIS Study Area outside the SML is covered by mining exploration leases. Exploration leases immediately surrounding the SML are held by BHP Billiton (see Figure 9.8). Most of the other mining leases within the EIS Study Area are in areas traversed by infrastructure corridors.

The existing SML is surrounded by a number of geothermal exploration leases, portions of which would be located within the boundaries of the expanded SML (see Figure 9.8).

A proposal has been approved for the establishment of a wind farm at Lincoln Gap, which is north of the Eyre Highway adjacent to the Cultana Training Area, approximately 15 km south-west of Port Augusta (see Figure 9.8).



Plate 9.6 Opal fields in Andamooka

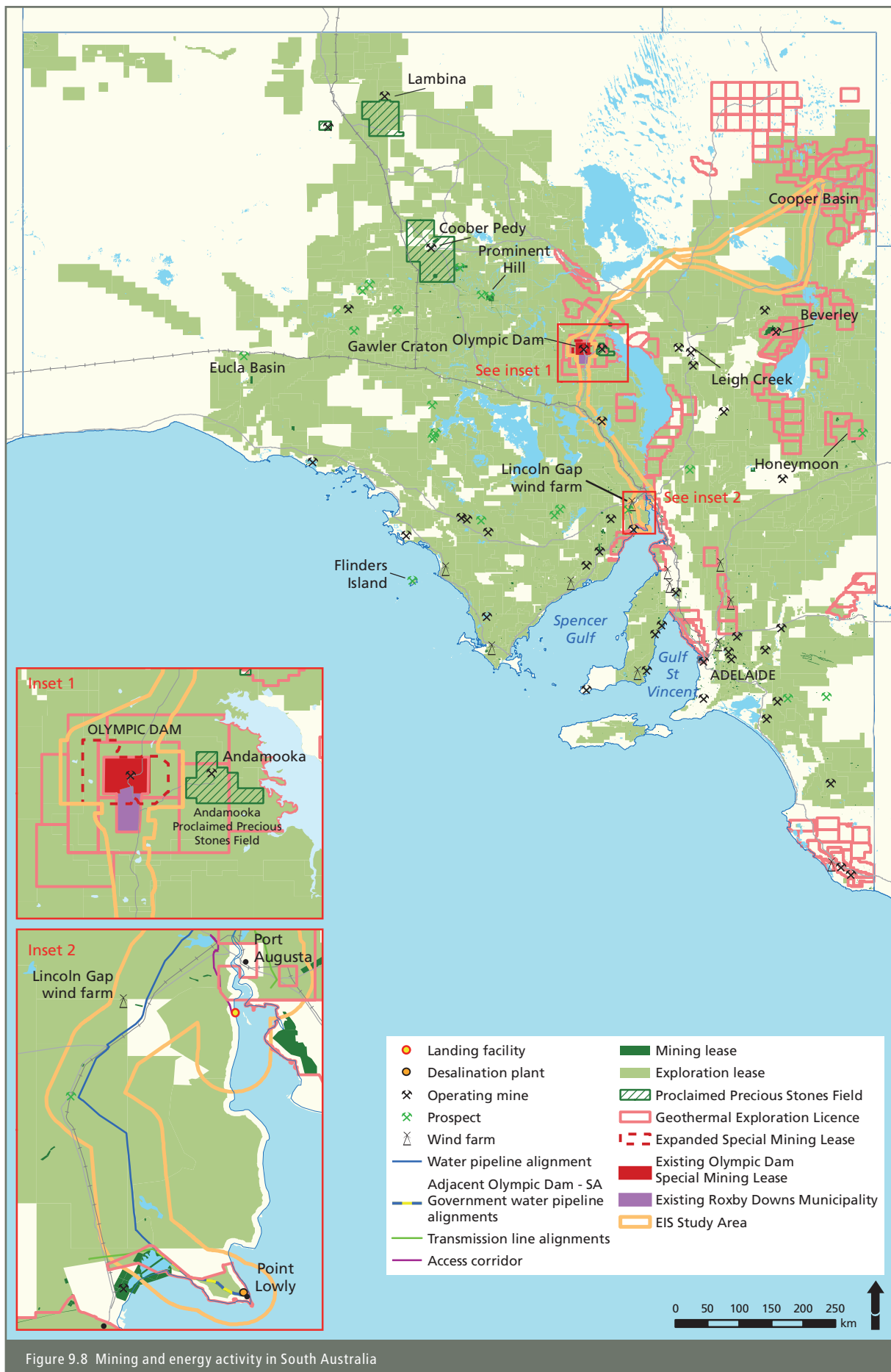


Figure 9.8 Mining and energy activity in South Australia

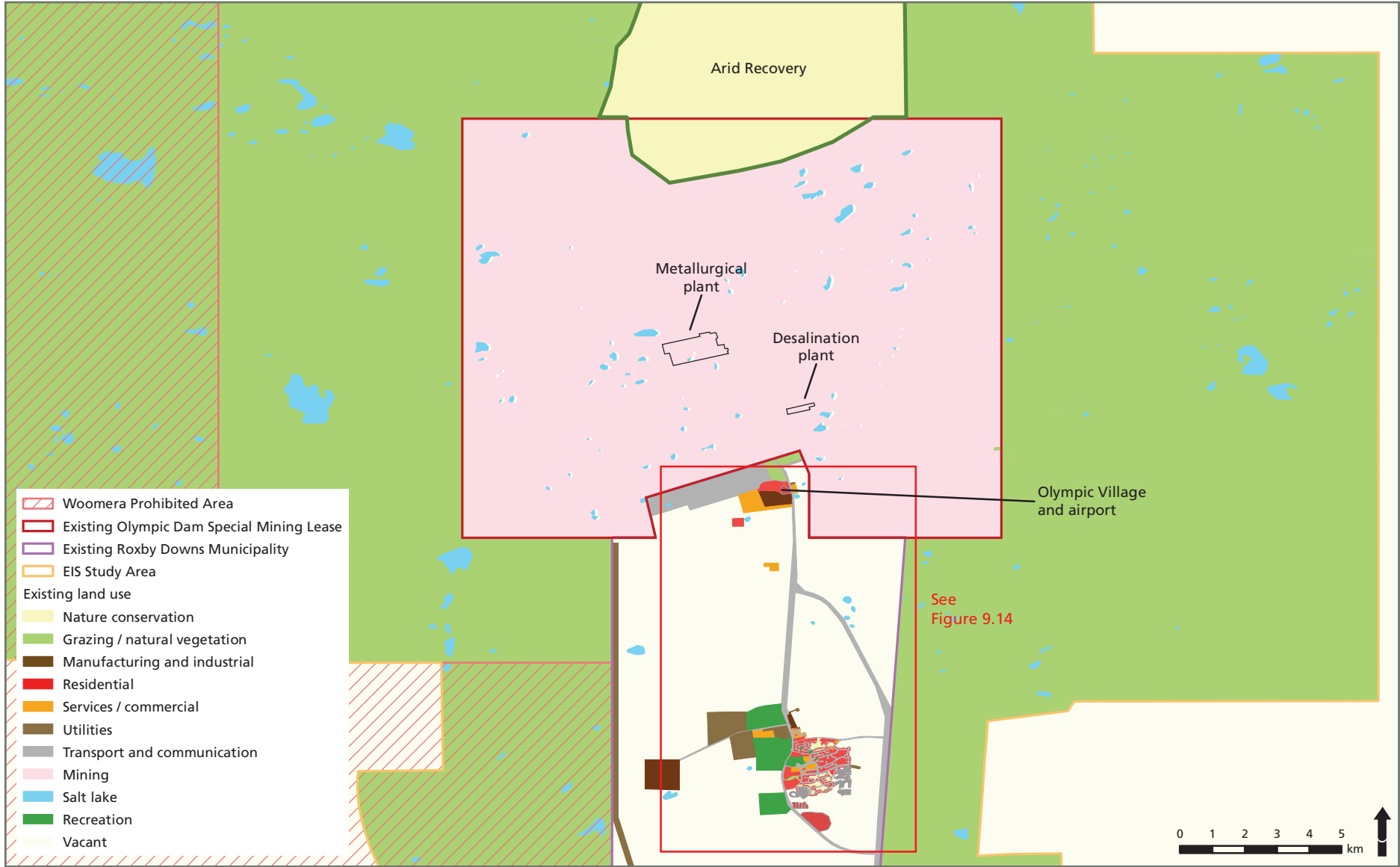


Figure 9.9 Existing land use around the Olympic Dam Special Mining Lease

9.3.5 TOWNSHIP LAND USES

Existing land uses in township and built-up areas within the EIS Study Area are varied, with combinations of residential, industrial, commercial, services and utilities, institutional (including education), conservation and recreation areas.

Changes in land use associated with components of the proposed expansion are anticipated in and around the following townships and built-up areas (see Section 9.7):

- Roxby Downs
- Woomera and Pimba
- Port Augusta
- Point Lowly
- Port Adelaide
- Darwin.

9.4 EXISTING LAND TENURE

Land tenure at the proposed site for the BHP Billiton facilities at the Port of Darwin is currently a combination of Crown leases and freehold industrial allotments held by various parties.

The South Australian sections of the EIS Study Area includes the following major tenure types that are listed in descending order of land area coverage (as shown in Figures 9.10 and 9.11, and summarised in Table 9.2):

- pastoral leasehold (held under pastoral leases from the Crown)
- Crown or South Australian Government land (other than pastoral leases)
- freehold land (including local government land)
- Commonwealth land (see Section 9.4.4).

9.4.1 LEASEHOLD LAND

Pastoral leases over Crown land are held by individuals or companies in accordance with the *Pastoral Land Management and Conservation Act 1989*. BHP Billiton holds four pastoral leases (see Section 9.3.1) that cover 1,153,000 ha in total.

9.4.2 STATE OR CROWN LAND

Land held by the South Australian Government (excluding pastoral leases) is typically associated with pastoral activities, towns and residential areas, roads and other infrastructure, industry, institutions and conservation areas. The Finniss Springs Aboriginal Land, located approximately 75 km north-east of the Olympic Dam SML (see Figures 9.3 and 9.10) is Crown land held by the Aboriginal Lands Trust and used for pastoral purposes. The Finniss Springs Aboriginal Land covers a total of 272,410 ha.

9.4.3 FREEHOLD LAND

BHP Billiton holds approximately 1.6% of the freehold land in the EIS Study Area (including the SML); the balance of freehold land (i.e. 7.6% of the EIS Study Area) is held by local government, individuals and companies.

9.4.4 COMMONWEALTH LAND

Land held by the Australian Government (Commonwealth land) accounts for approximately 29,860 ha (2.2%) of the EIS Study Area. Commonwealth land in the vicinity of the project components includes the WPA, CTA and land held by the Australian Rail Track Corporation Ltd.

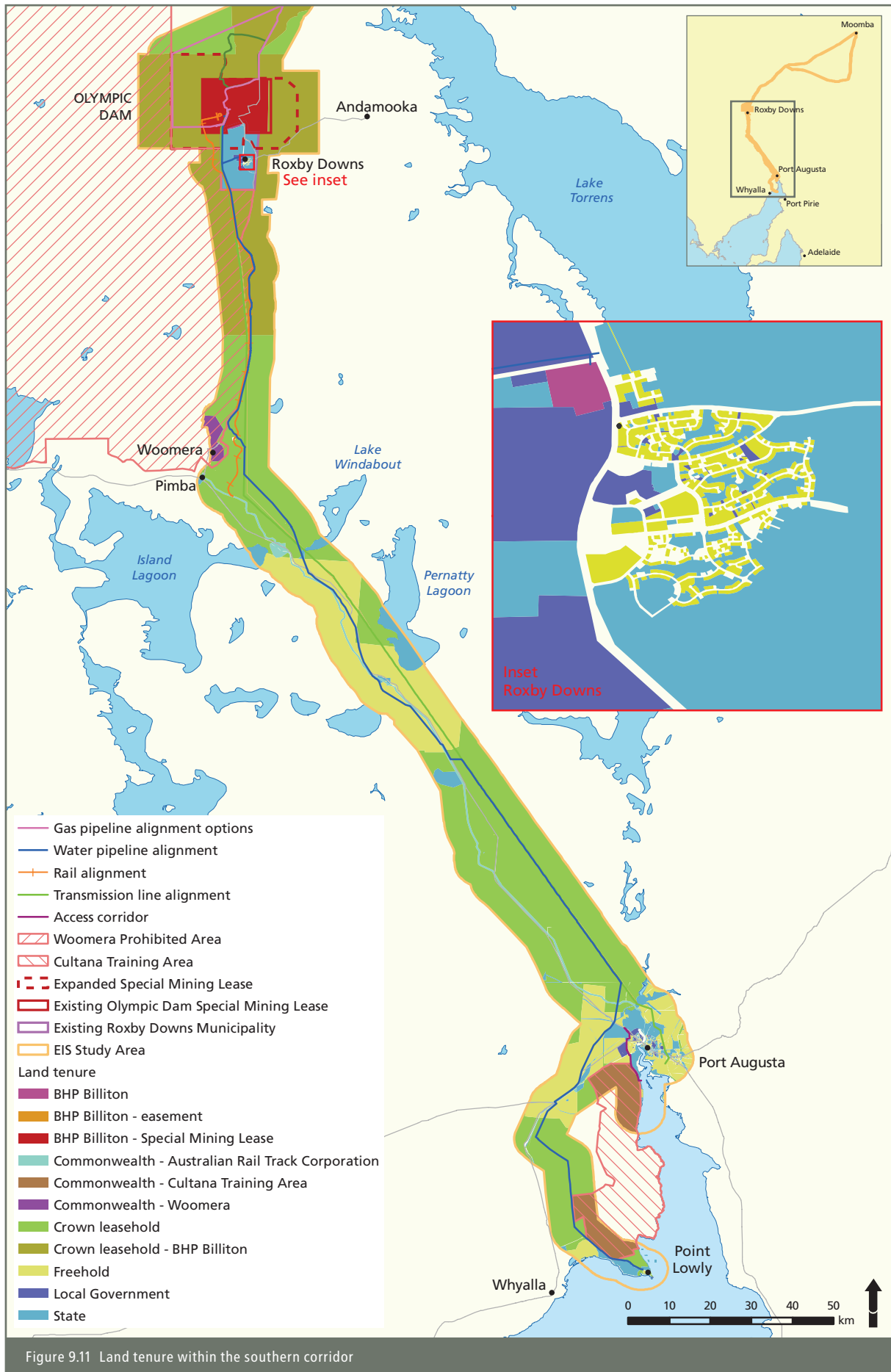
Table 9.2 Land tenure within the EIS Study Area

Tenure type	Area (ha)	Percentage of EIS Study Area	
	Total	959,185	71.6
Pastoral leasehold	BHP Billiton pastoral	192,800	14.4
	Other parties	766,390	57.2
South Australian Government ¹		199,815	14.9
	Total	124,250	9.3
	SML	17,800	1.35
Freehold land	Other BHP Billiton	3,000	0.25
	Local Government	1,700	0.1
	Other parties	101,750	7.6
Commonwealth land	Total	29,865	2.2
	Defence	21,650	1.6
	Other	8,215	0.6
Roads		9,390	0.7
Marine/estuary areas		16,835	1.3
Total		1,339,340	100

¹ Excluding Crown pastoral leases and including lakes and inland rivers.



Figure 9.10 Land tenure associated within the gas pipeline corridor options



9.5 EXISTING OPERATION

The existing Olympic Dam operation is described in Chapter 2, Existing Operation. Existing infrastructure is located on a number of different properties and passes through numerous land holdings. The land use and tenure arrangements for the existing operation are summarised below and in Table 9.3.

9.5.1 MINING AND METALLURGICAL ACTIVITIES

The Olympic Dam mining and metallurgical facilities are located on freehold land held by BHP Billiton as an SML, which covers approximately 17,800 ha.

Just over 10% (875 ha) of Arid Recovery is situated within the Olympic Dam SML (see Figures 9.6 and 9.9), with the remainder situated on the neighbouring pastoral leases of Billa Kalina, Stuarts Creek and Andamooka, the latter two of which are held by BHP Billiton.

9.5.2 WATER SUPPLY

The two wellfields that provide the primary supply of water to Olympic Dam and Roxby Downs are located approximately 120 km and 200 km north of the operation on Stuarts Creek pastoral station. Water from these wellfields is treated at the existing desalination plant within the SML (see Figure 9.9).

9.5.3 ELECTRICITY SUPPLY

Most of the land occupied by the electricity supply corridor traverses freehold land held by BHP Billiton and leased to other parties for pastoral purposes (see Figure 9.11). The remainder of the electricity supply corridor is within easements granted to BHP Billiton over freehold land held by other parties for various uses (see Figure 9.12).

9.5.4 TRANSPORT INFRASTRUCTURE

Rail transport

Rail transport is currently limited to transferring uranium oxide from BHP Billiton storage facilities at Port Adelaide (see below) to the Port of Darwin for export, via the existing Adelaide to Darwin rail network.

Road transport

All major commodities are currently transported in and out of the operation by road, via Olympic Way and the Stuart Highway.

Borefield Road currently extends from near the existing Olympic Dam desalination plant towards the borefields north of the SML (see Figure 9.9).

Table 9.3 Land use and tenure for the existing operation

Component	Area (ha)	Land use	Tenure
Port of Darwin	6	Temporary storage and export of uranium oxide	Toll distribution terminal, East Arm
SML	17,800	Underground mining Metallurgical processing Quarry Storage of solid and liquid wastes (TSF) Storage of solid wastes (landfill) Sewage treatment Water treatment and storage Supply of electricity (substation) Buffer areas (vegetation/habitat) Conservation (Arid Recovery - part)	Freehold (BHP Billiton)
Electricity supply	2,710	Electricity transmission line Pastoral/grazing	Freehold (BHP Billiton and others)
Olympic Dam Airport	63	Airport	Freehold (BHP Billiton)
Roxby Downs	258	Residential Commercial Human services Light industrial Utilities (water, sewerage, electricity) Waste management (landfill) Institutional Recreation Conservation	Crown Land licensed to BHP Billiton and various freehold and leased landholdings
Olympic Dam Village	73	Contractor accommodation Heavy industry area Petrol station	Crown land licensed to BHP Billiton and freehold land (petrol station)
Port Adelaide	18	Copper handling facility Temporary storage of uranium oxide Cargo berth Sulphur handling facility	Freehold and Crown land (leased to BHP Billiton)

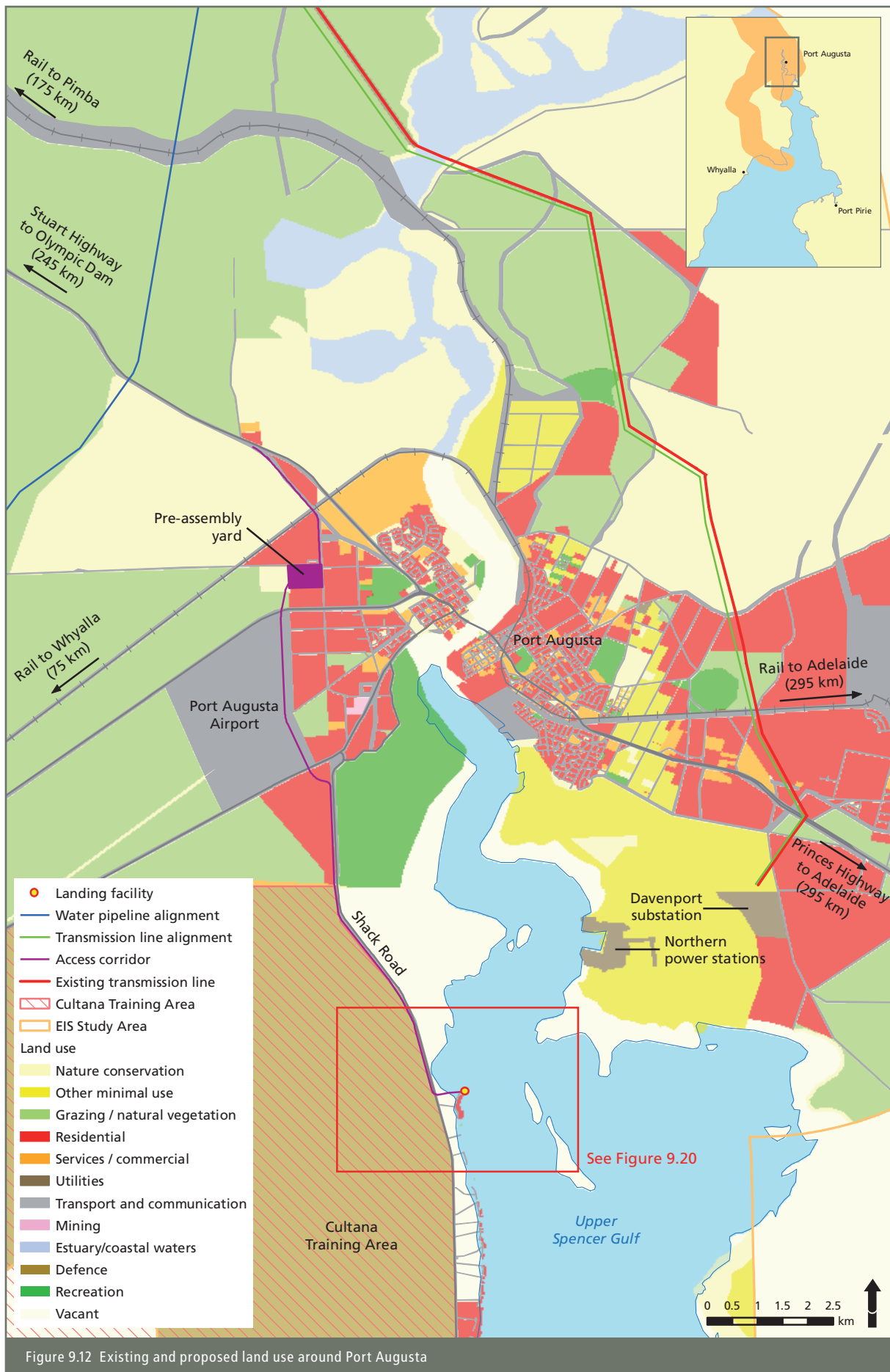


Figure 9.12 Existing and proposed land use around Port Augusta

Port facilities

BHP Billiton leases two sites in Port Adelaide for intermediate storage and handling purposes (see Figure 9.13 and Chapter 2, Existing Operation). Waterfront land is leased for a copper handling and freight facility and a dedicated cargo berth. This land is also used for the transfer of uranium oxide from Port Adelaide to Darwin. Land 1.5 km to the east of this site is leased for the storage and handling of imported sulphur.

The existing port facilities are immediately surrounded by industrial land, with commercial and residential uses in the broader area. The Adelaide Dolphin Sanctuary is located adjacent to the existing port facilities (see Figures 9.6 and 9.13).

Uranium oxide is transferred by rail from Port Adelaide to third-party freight loading facilities at the Port of Darwin prior to export overseas. The uranium oxide is transported by rail to the Berrimah Freight Terminal, and is immediately transferred by road to the Toll distribution terminal at East Arm for short-term storage in a secure, dedicated facility. The uranium oxide is then transported by road from the Toll terminal to the East Arm wharf for loading onto an export vessel.

Airport

The Olympic Dam Airport covers an area of 63 ha (see Figures 9.9 and 9.14, and Plates 9.7 and 9.8) and is held by BHP Billiton as a freehold title within the Roxby Downs Municipality.

9.5.5 TOWNSHIP AND ACCOMMODATION

Roxby Downs

The Roxby Downs township (see Figure 9.14) currently occupies approximately 260 ha and is situated within the Roxby Downs Municipality, which covers approximately 11,000 ha of mostly vacant land (see Figure 9.9). The Municipality is located on Crown land occupied by BHP Billiton under the terms of the occupational licences granted to it by the South Australian Parliament under the *Crown Lands Act 1929* and pursuant to the Indenture. As part of the development of the town, land has been excised from these occupational licences (under the terms of the Indenture) and granted various forms of tenure (including freehold) by the Crown. Land uses in Roxby Downs include residential, commercial, industrial, public institution (principally human services and education) and recreation (see Plates 9.9 to 9.13).

Olympic Dam Village

The existing Olympic Dam Village covers an area of 73 ha (see Figure 9.14). Olympic Dam Village consists of temporary accommodation for BHP Billiton employees and contract workers (known as Olympic Village, see Plate 9.14), as well as the Charlton Road heavy industrial area (which includes mine-related workshops) and a petrol station (currently held under private freehold title).



Plate 9.7 Olympic Dam Village and airport



Plate 9.8 Olympic Dam Airport terminal



Plate 9.9 Residential development in Roxby Downs



Plate 9.10 Commercial area of Roxby Downs



Figure 9.13 Existing and proposed land use at Port Adelaide and Outer Harbor

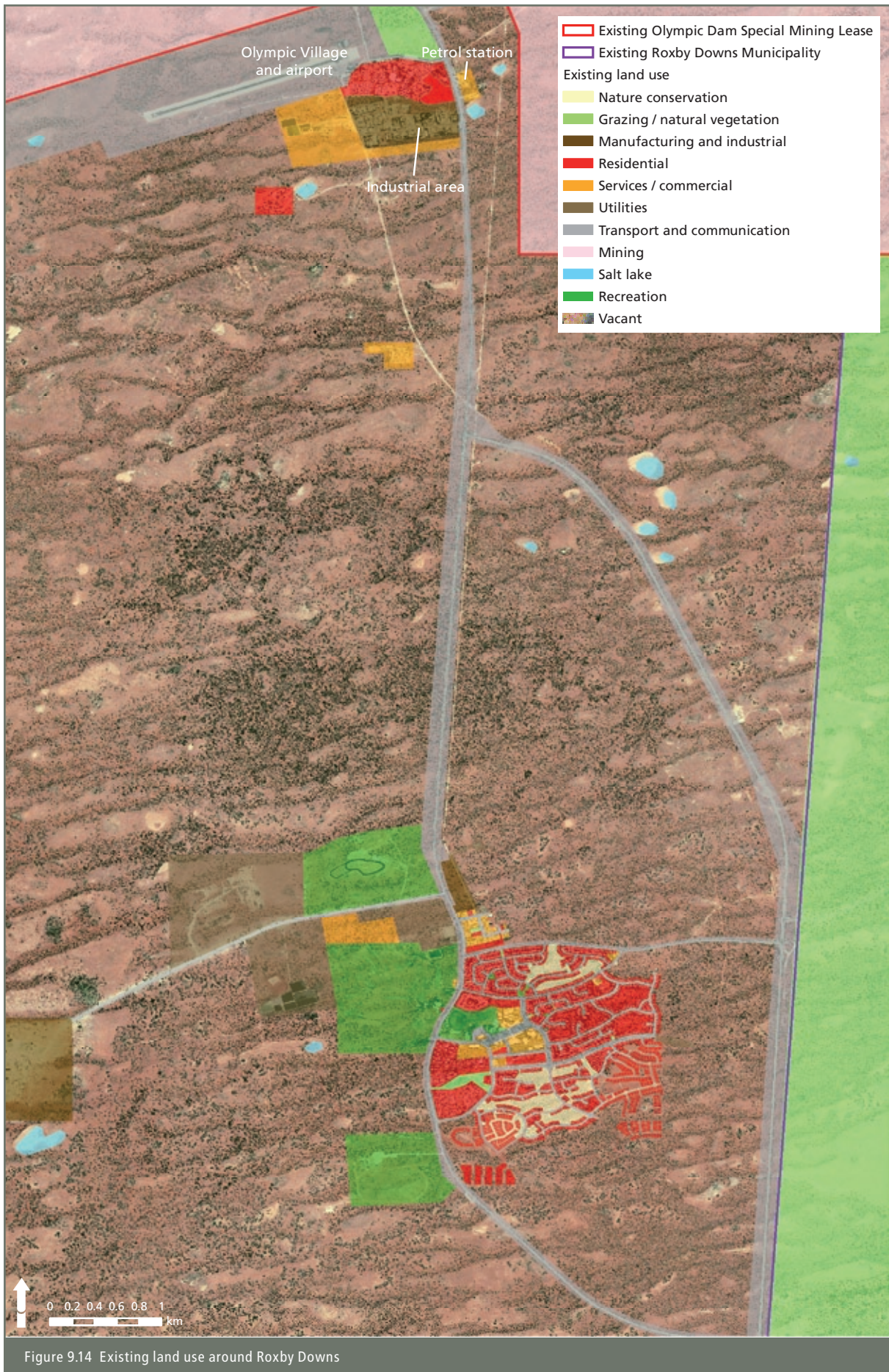


Figure 9.14 Existing land use around Roxby Downs



Plate 9.11 Light industry precinct in Roxby Downs



Plate 9.12 Roxby Downs Area School



Plate 9.13 Roxby Downs Swimming Centre



Plate 9.14 Olympic Village temporary contractor accommodation

9.6 DESIGN MODIFICATIONS TO PROTECT ENVIRONMENTAL VALUES

Roxby Downs township

The area required for the proposed expansion of the Roxby Downs township has been assessed through the development of the Roxby Downs Draft Master Plan, which centres the township expansion on the existing town centre and locates the various components of the township (e.g. residential, light industrial, recreational and educational areas) within existing or expanded land use precincts. Where practicable, areas of higher ecological value have been retained as public open space areas.

Infrastructure corridors

Land use along the proposed infrastructure corridors are shown in Figures 9.1 and 9.2. Wherever practicable, linear infrastructure (e.g. the rail line, gas pipeline, electricity transmission lines, access corridor and water supply pipeline) would be located adjacent to existing infrastructure to maximise the use of existing access tracks and reduce habitat fragmentation. Figure 9.15 shows the location of the proposed linear infrastructure elements, providing cross-sections at three indicative locations along the corridor.

The gas and water supply pipelines would be buried for the majority of their length, which would allow the current land uses in these corridors to continue.

9.7 IMPACT ASSESSMENT AND MANAGEMENT

Previous sections have detailed land use and tenure in areas occupied by the existing operation. The proposed expansion would require changes to land use and tenure in some of these areas, and would also introduce new infrastructure to additional areas. The following section discusses and illustrates the required changes (see Table 9.4).

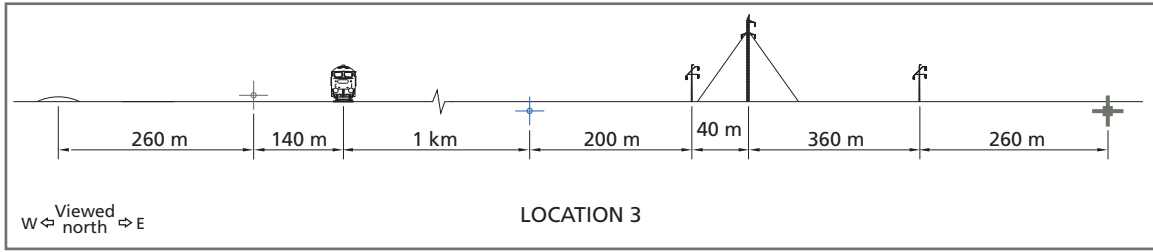
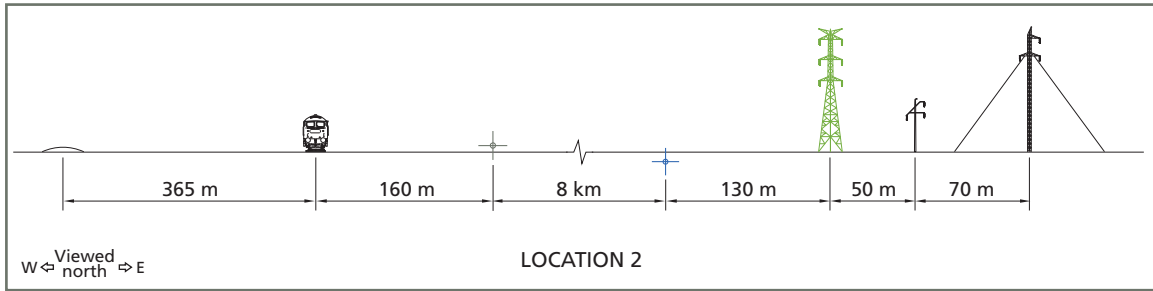
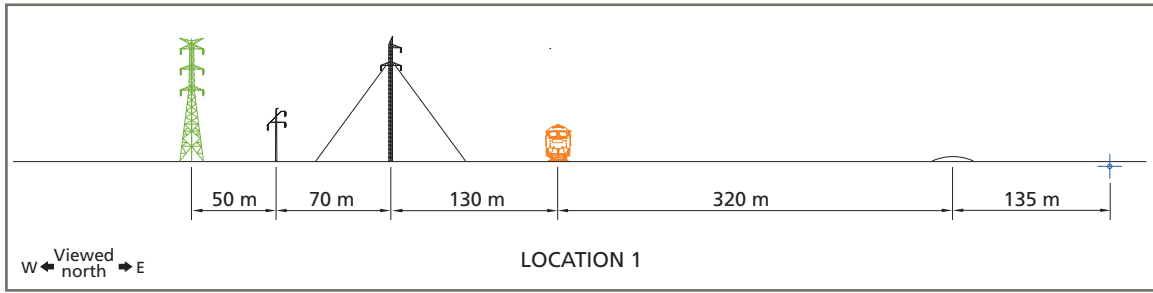
9.7.1 MINING AND METALLURGICAL ACTIVITIES

Olympic Dam Special Mining Lease (SML)

The proposed expansion, with the introduction of a new open pit mine, a rock storage facility (RSF) and an increased area for tailings storage, would require an increase to the SML from 17,800 ha to approximately 49,700 ha (see Figure 9.16).

The western boundary of the expanded SML would align with the eastern boundary of the Woomera Prohibited Area, while the northern area of the SML would continue to include, but not extend further into, Arid Recovery (see Figure 9.16).

The proposed expansion of the SML would require an excision of land from the BHP Billiton-held Andamooka and Roxby Downs pastoral leases, which would result in a change in tenure from pastoral lease to freehold, and in a permanent change in land use from pastoral to mining. The reduction in land available for these pastoral leases affected by the proposed SML extension (approximately 7.6% of the combined total area of Andamooka and Roxby Downs stations) may result in reduced stocking numbers on these stations.



- Existing infrastructure**
- 275 kV transmission line
 - 132 kV transmission line
 - Rail
 - Water pipeline
 - Santos liquid fuels pipeline
 - Road
- Proposed infrastructure**
- 275 kV double circuit transmission line
 - Rail
 - Water pipeline

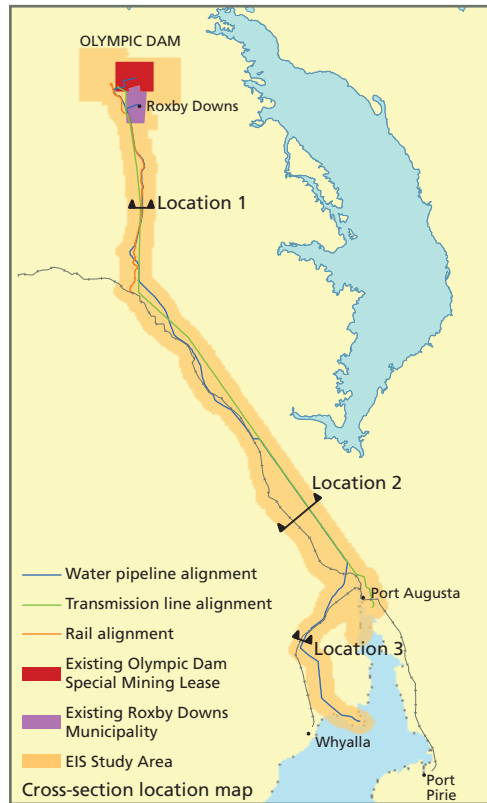


Figure 9.15 Indicative separation distances of proposed linear infrastructure

Table 9.4 Land use change as a result of proposed expansion

Project component	Current land use	Change in land use (ha)		Per cent of EIS Study Area	
		Construction	Operation		
Mining and metallurgical operations					
Expanded Special Mining Lease	Pastoral Vacant	31,900	31,900	2.38	
Water supply					
Desalination plant (including temporary laydown yard, intake and outfall pipes and pump stations)	Vacant	41	21	0.002	
Water supply pipeline (outside expanded SML)	Pastoral Defence	1,450	10	0.0004	
Electricity transmission line	Road corridor	15	8	0.0006	
Electricity supply					
Electricity transmission line (Port Augusta to Olympic Dam), including temporary storage depots and winching sites	Electricity corridor Pastoral	337	85	0.006	
Gas pipeline, including pipe stacking sites, mainline valves, compressor stations and temporary construction camps (outside expanded SML)	Pastoral Reserve	Option 1	1,318	253	0.019
		Option 2	1,194	229	0.017
		Option 3	1,695 ¹	326	0.024
Transport					
Rail line (outside expanded SML)	Pastoral	273	91	0.007	
Pimba intermodal facility	Pastoral Industrial	50	50	0.004	
Access corridor from landing facility to Stuart Highway	Pastoral Defence Industrial	55	50	0.004	
Pre-assembly yard	Industrial	25	25	0.002	
Passing bays	Road corridor Pastoral	12	12	0.001	
Borrow pits	Pastoral	20	0	0	
Borefield Road relocation	Pastoral	65	60	0.0045	
Outer Harbor	Industrial	20	20	0.002	
Port of Darwin	Industrial	16	16	0.0012	
Landing facility and quarantine yard	Vacant	3	3		
	Residential			0.0003	
Airport	Pastoral	105	105	0.008	
Township and accommodation					
Roxby Downs township	Vacant	465	465	0.035	
Hiltaba Village	Pastoral	60	60	0.0045	
Services corridor to Hiltaba Village and airport	Road corridor	115	13	0.007	
Heavy industrial area	Vacant	73	73	0.0055	
Total¹		36,795	33,393	2.5	
Total¹ excluding SML		4,895	1,493	0.11	

¹ Totals include Option 3 gas pipeline.

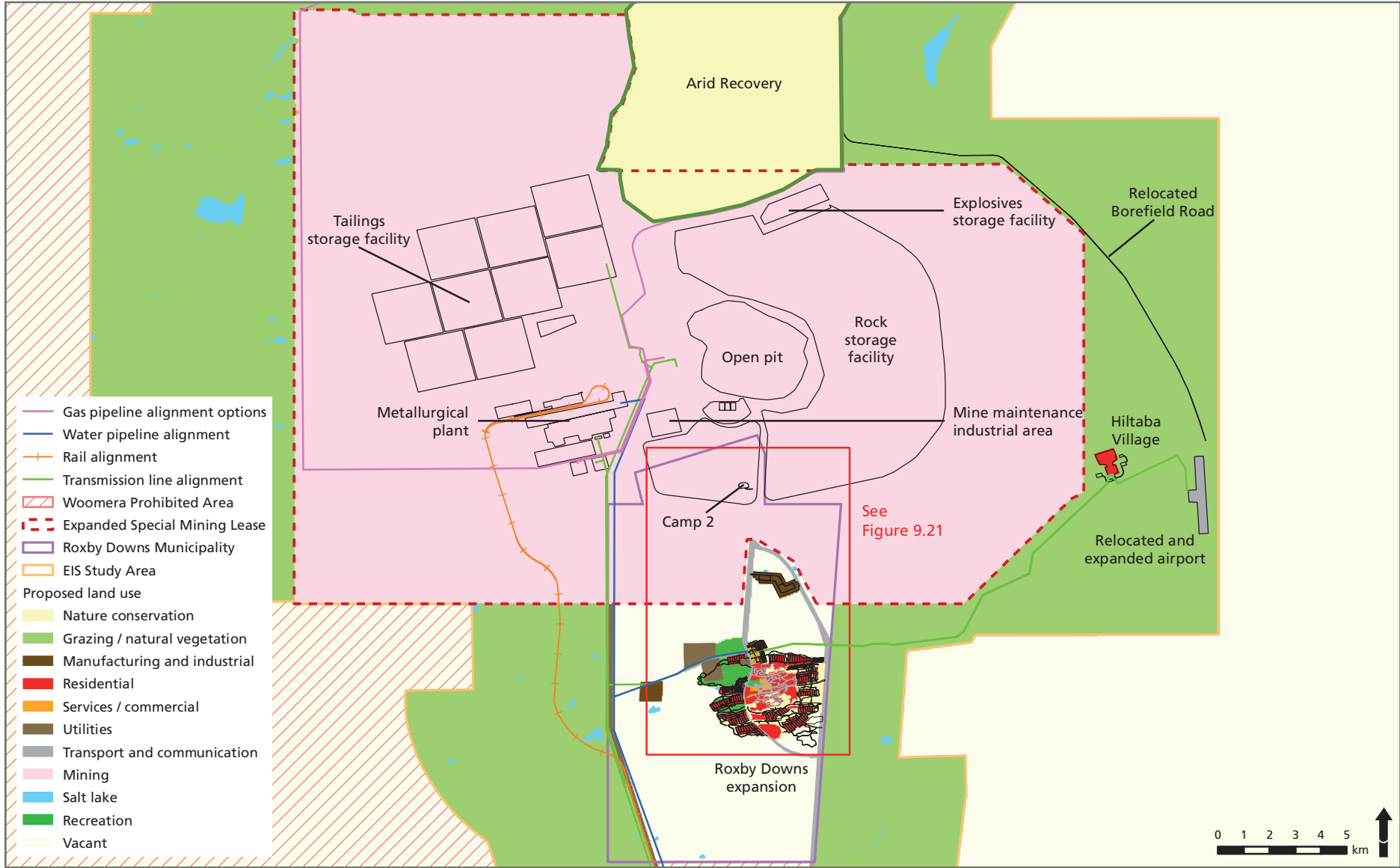


Figure 9.16 Proposed land use around Olympic Dam

The proposed SML extension would also occupy approximately 3,400 ha of the Roxby Downs Municipality, which would result in changes to land use and tenure in the Olympic Dam Village (see Figure 9.16 and Section 9.7.6).

Exploration leases – mining and geothermal

Mining exploration leases covering the SML and Roxby Downs Municipality (see Figure 9.8) are held by BHP Billiton (see Section 9.3.4). Other mining leases within the EIS Study Area cover the proposed locations of the desalination plant, pre-assembly yard, Pimba intermodal facility, and areas traversed by infrastructure corridors. Activities associated with the proposed expansion are not expected to significantly affect these leases.

The SML is surrounded by a number of geothermal exploration leases (see Figure 9.8 and Section 9.3.4). The expanded SML would occupy land within four geothermal exploration leases (jointly held by Green Heat Resources Pty Ltd and Green Rock Geothermal Pty Ltd) that cover an area of approximately 170,000 ha. The expansion of the SML would affect 31,900 ha (18.7%) of these leases. The expanded SML would also affect 75 ha of a mining exploration lease held by Tasman Resources NL.

The proposed linear infrastructure corridors would not have a significant impact on geothermal exploration leases.

Energy generation

The alignment of the proposed water supply pipeline traverses approximately 3.5 km of the southern boundary of the proposed Lincoln Gap wind farm site (see Figure 9.8), and would not have an impact on its development or operation. All other components of the proposed expansion would be located at distances greater than 5 km from the proposed wind farm site.

9.7.2 ARID RECOVERY

The existing footprint of Arid Recovery would not change as a result of the proposed expansion (see Figure 9.16) and, as such, there would be no change to tenure or land use. The proposed relocation of Borefield Road (see Section 9.7.5) would maintain public access to Arid Recovery and townships north of Olympic Dam.

9.7.3 WATER SUPPLY

Desalination plant, intake and outfall pipes

The proposed site of the desalination plant is currently vacant Crown land, zoned for industrial purposes (see Figure 9.17), over which BHP Billiton would seek to obtain freehold title. The area would be approximately 21 ha. During construction, a temporary laydown yard of approximately 12 ha would also be required.

Land adjacent to the proposed site includes vacant Crown land to the north, east and west, and the Port Bonython hydrocarbon facility (see Plate 9.15) to the south. Coastal residences (both permanent and short-term vacation) are located within 1 km of the site. The Point Lowly Lighthouse Complex (see Figure 9.17 and Plate 9.16) is located within 3 km of the site (see Chapter 18, Non-Aboriginal Cultural Heritage, for details).

There are also marine uses in the area, including aquaculture leases (kingfish cages), located approximately 3 km north in Fitzgerald Bay (see Figure 9.17 and Plate 9.17). These cages are towed to the lease areas as shown in Figure 9.17; this marine use would continue during the construction and operation phases of the desalination plant.



Plate 9.15 Santos Oil Storage and Processing Plant and coastal residences at Point Lowly



Plate 9.16 Point Lowly Lighthouse and Santos facilities



Plate 9.17 Aquaculture cage in Fitzgerald Bay

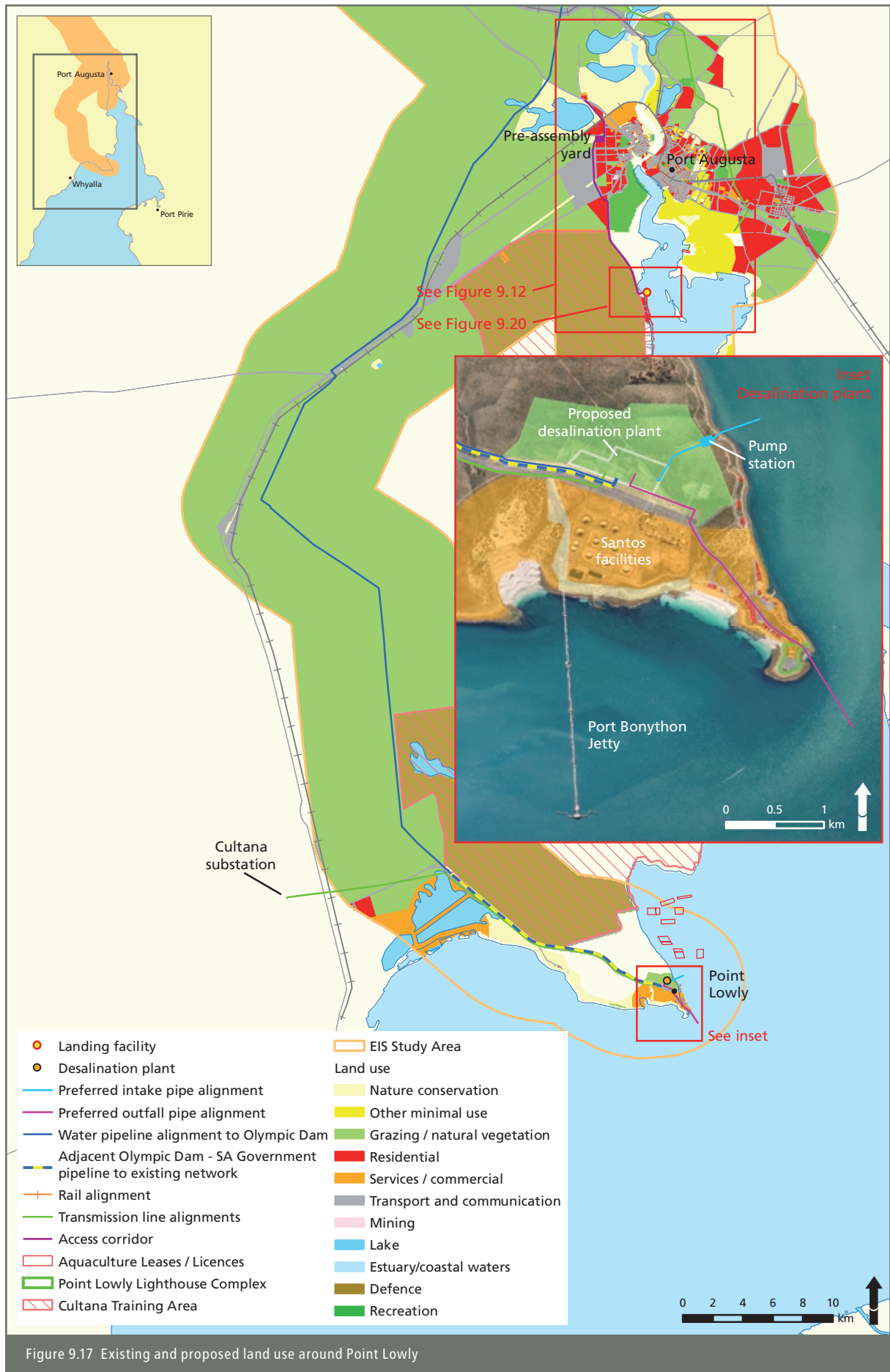


Figure 9.17 Existing and proposed land use around Point Lowly

The land use at the proposed site would change to accommodate the desalination plant; this change would be in keeping with the allowable industrial land use. The intake and outfall pipes would be aligned in trenches through land that is either currently vacant or alongside the existing road corridor (see Figure 9.17), and would occupy approximately 8 ha. The pipes would then either be trenched into the seabed or laid on the seabed and covered with rock and would have no long-term impact on existing land use. A fenced compound (approximately 50 m x 40 m) would be installed around the intake sump on currently vacant land; this would be a permanent change in land use.

Water supply pipeline

Land along the proposed 320 km water supply pipeline corridor from Point Lowly to Olympic Dam is predominantly held as pastoral leases; there are also some parcels of freehold, Crown and Commonwealth land (see Figure 9.11). BHP Billiton would investigate potential tenure arrangements along the water pipeline alignment, such as excising the pipeline corridor from pastoral leases into a freehold pipeline easement, obtaining licences from the relevant lessees, or other applicable tenure.

In the area between Point Lowly and Port Augusta, the water supply pipeline would pass through pastoral, Crown and freehold land (see Figure 9.11). The pipeline would be aligned in Crown land adjacent to the southern boundary of the existing

CTA for approximately 9 km and would traverse the proposed CTA expansion area for approximately 33 km (see Figure 9.17). Between Port Augusta and Olympic Dam, the proposed water supply pipeline would be aligned where practicable with the existing transmission line, and would therefore pass through the same land uses (see Figure 9.2). The pipeline would also traverse the WPA for approximately 15 km, wherein for the most part it would be aligned within the electrical transmission corridor (which is held freehold by BHP Billiton). High impact testing of weapons could not occur in the areas that support the water pipeline, but defence vehicles, including tanks, could continue to move over the pipeline.

The pipeline easement would also pass through land associated with the proposed Lincoln Gap wind farm site (see Section 9.7.1) but would not affect the wind farm.

The proposed corridor for the water supply pipeline would be approximately 40 m wide, with most of this area disturbed during construction. The construction of the pipeline (see Plate 9.18), including pipe stacking sites, would require a short-term change in land use for approximately 1,485 ha. As almost all of the pipeline would be buried (i.e. 318.5 km of its 320 km length), the long-term change in land use would be limited to small sections of above ground pipeline at water crossings (approximately 6 ha) and pump stations (approximately 4 ha). Once construction was complete, the existing land uses would be able to resume. Accordingly, current land uses are not expected to be significantly affected by the proposed pipeline.



Plate 9.18 Typical construction of buried pipeline



Plate 9.19 Existing electricity transmission lines adjacent to Stuart Highway

9.7.4 ELECTRICITY SUPPLY

Electricity transmission line – Port Augusta to Olympic Dam

The proposed new transmission line would be aligned adjacent to the existing corridor from Port Augusta to Olympic Dam (see Figures 9.2 and 9.12, and Plate 9.19), which predominantly consists of freehold land (either held by BHP Billiton or over which BHP Billiton has been granted an easement). The new electricity corridor would traverse land that is currently held as Crown and Commonwealth land (including approximately 15 km of the WPA) and some freehold parcels (see Figure 9.11 and Section 9.6.5).

Consistent with the tenure arrangements for the existing electricity corridor, BHP Billiton would seek to obtain freehold title over the length of the new corridor, which would involve excision from some pastoral leases, including leases within the WPA.

The construction of the proposed transmission line would require a short-term change in land use for approximately 337 ha, and a long-term change in land use for approximately 85 ha. While there may be some disruption to existing pastoral land use during the construction phase, use of the land for pastoral activities (see Figure 9.2) would continue in the long term.

Electricity transmission line – Cultana to Point Lowly

A new 132 kV electricity transmission line would be required to provide a power supply for the desalination plant. The proposed transmission line would follow the alignment of the existing line from the Cultana substation to Point Lowly and traverse approximately 25 km of pastoral, freehold, and vacant Crown land (see Figure 9.17). The line's construction would require a short-term change in land use for approximately 15 ha, and a permanent change in land use (for towers) for approximately 7 ha.

Gas supply pipeline

The gas pipeline corridor options to the north of Olympic Dam include three alternative routes for the proposed gas pipeline to Moomba (see Figure 9.1):

- Option 1: northern corridor directly from Olympic Dam to Moomba (440 km)
- Option 2: southern corridor from Olympic Dam to the existing compressor station on the Moomba to Adelaide gas pipeline (approximately 400 km)
- Option 3: southern corridor from Olympic Dam to Moomba via the existing compressor station (560 km).

Land along the proposed corridors is held as pastoral leases and Crown land. The typical landscape features in the region are shown in Plates 9.20 to 9.23. The predominant land use within the corridor options is pastoral (see Figures 9.1 and 9.3). BHP Billiton would investigate potential tenure arrangements along the pipeline alignment, such as excising the corridor from pastoral leases into a freehold pipeline easement, obtaining licences from the relevant lessees, or other applicable tenure.

Irrespective of the alignment chosen, the pipeline would traverse the Finnis Springs Aboriginal Land for approximately 50 km (see Figure 9.3). While the EIS Study Area overlaps the Lake Eyre National Park for approximately 3 km (see Figure 9.5), this National Park would be avoided by the chosen alignment. Options 1 and 3 traverse the Strzelecki Regional Reserve for approximately 120 km and 20 km, respectively (see Figure 9.5).

The proposed corridor would be approximately 30 m wide, with most of this area disturbed during construction. The pipeline would be underground for most of its length.

Construction of the pipeline, including pipe stacking sites and temporary construction camps, would require a short-term change in land use of between 1,194 and 1,695 ha (depending on the chosen route – see Table 9.4 and Figure 9.1). As the pipeline would be buried, long-term disturbance would be limited to above-ground facilities such as mainline valves (to isolate sections), compressor stations, scraper stations for pipe maintenance (where required) and a maintenance access track. Following completion of construction works, existing land uses would be able to resume over all but between 229 and 326 ha of the pipeline easement. The majority of this area comprises the maintenance access track, over which pastoral activities would be able to continue.



Plate 9.20 Typical landscape along the gas pipeline corridor



Plate 9.21 Gas pipeline option 1 – typical landscape within the Strzelecki Reserve



Plate 9.22 Gas pipeline option 2 – typical landscape



Plate 9.23 Gas pipeline option 3 – typical landscape

9.7.5 TRANSPORT INFRASTRUCTURE

Rail line and intermodal facility

Land along the proposed rail corridor is held as pastoral leases (see Figure 9.11). The existing rail line from Port Adelaide to Pimba passes through industrial, residential, agricultural and pastoral land (see Figure 9.2 and Plate 9.24).

The proposed new rail spur from Pimba to Olympic Dam would be approximately 105 km in length and would traverse pastoral stations, Commonwealth land, the Roxby Downs Municipality and the SML (see Figures 9.11 and 9.18).

The proposed corridor for the rail line would be approximately 150 m wide, with a disturbance area averaging 30 m in width. BHP Billiton would seek to obtain this land freehold, which would involve excision of land from the existing pastoral leases.

Outside the expanded SML, the construction of the rail line would require a short-term change in land use for approximately 273 ha. Based on the average width of the rail line and embankment (approximately 10 m), there would be a long-term change in land use of approximately 91 ha. The rail



Plate 9.24 Existing rail corridor north of Port Augusta



Plate 9.25 Proposed location of the intermodal facility near Pimba

line would result in a permanent change of land use within the corridor; however, the corridor would not be fenced and access across the corridor would be maintained to allow pastoral activities adjacent to the rail line to continue.

The proposed Pimba intermodal facility would be partly located on land held as the Arcoona pastoral lease and partly on vacant Commonwealth land held by the Australian Rail Track Corporation Ltd (ARTC). Prior to the rail line being commissioned, the intermodal facility (see Figure 9.18 and Plate 9.25) would be used to maximise rail transport and therefore minimise road transport of construction materials. The area of the facility would be approximately 50 ha and would result in a permanent change in land use. BHP Billiton would lease the land from ARTC and, for the remainder of the land, seek consent from the pastoral leaseholder to use the land or obtain it freehold.

Impacts on land use would be minimised by maintaining existing roads within pastoral areas traversed by the proposed rail corridor. The alignment of rail crossings would be discussed with landowners to ensure they were suitably located.

Road transport

Access corridor and pre-assembly yard

An access corridor is required to connect the proposed landing facility to the pre-assembly yard and the Stuart Highway (see Figure 9.12). The corridor would be approximately 35 m wide. The corridor would be aligned within Commonwealth (CTA) land along the western side of Shack Road, and through vacant freehold and Crown land to the north of the CTA and to the east of the Port Augusta airport (see Figure 9.12 and Plate 9.26). The corridor would join the Stuart Highway approximately 3 km north-west of Port Augusta.

BHP Billiton would seek to obtain a lease from the Commonwealth over the portion of the corridor that traverses CTA land and freehold title over the remainder of the route.

The proposed Port Augusta pre-assembly yard would be located on approximately 25 ha of Crown land. The site is currently vacant (see Plate 9.27) and was used previously for the 1997 Olympic Dam expansion.

The construction and operation of the access corridor would result in a permanent change of land use for approximately 50 ha. Public access to the corridor would be restricted by fencing or other barriers. The total long-term change in land use for the corridor and pre-assembly yard would be approximately 75 ha.

Impacts on land use would be reduced by establishing designated crossing points. These would be provided to allow neighbouring activities to continue on either side of the corridor. The alignment of crossing points would be discussed with landowners to ensure they were suitably located. Access to the crossing points would be unrestricted in the main, although during times of operations there would be restrictions and delays in crossing from side to side.

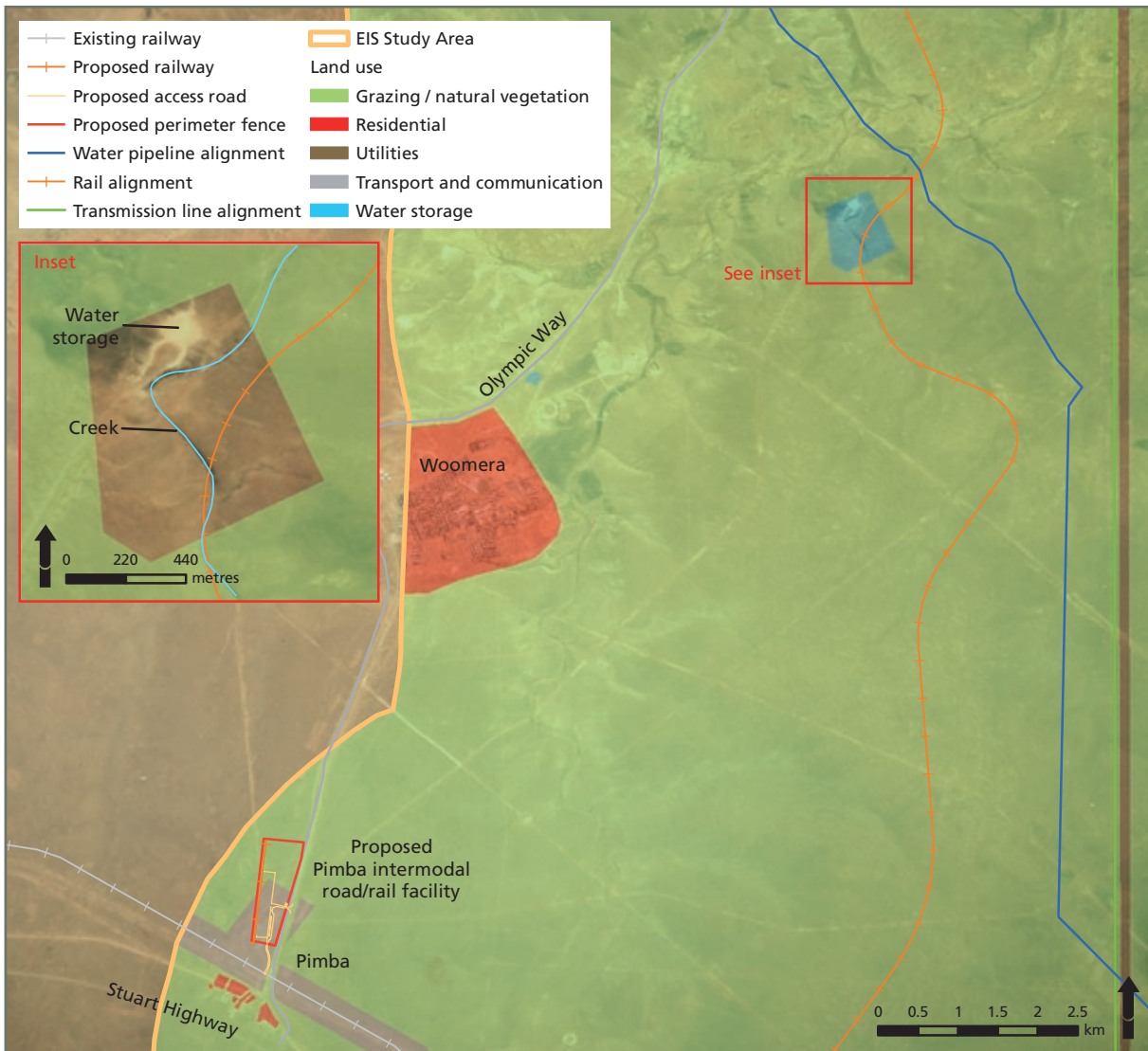


Figure 9.18 Existing and proposed land use around Pimba/Woomera



Plate 9.26 Proposed location of the access corridor near Port Augusta

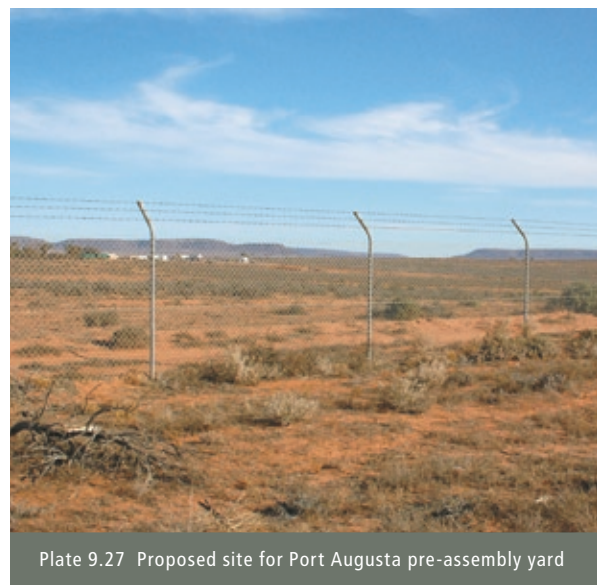


Plate 9.27 Proposed site for Port Augusta pre-assembly yard

Borefield Road

The existing Borefield Road currently passes through the SML and would need to be relocated to allow for the development of the proposed open pit and RSF (see Figure 9.16). The new road would be relocated outside of the SML to the east of Olympic Dam, approximately 17 km along the Andamooka Road.

The proposed relocation of Borefield Road would maintain public access to Arid Recovery and townships north of Olympic Dam, and would require the construction of approximately 20 km of new road, which would be approximately 10 m wide, requiring a road corridor approximately 30 m.

The proposed relocation would result in a temporary change in land use during construction over an area of approximately 65 ha (including borrow pits and construction laydown areas), and a permanent change in land use of approximately 60 ha.

The new road would be located entirely within the Andamooka pastoral lease, which is held by BHP Billiton. As such, there would be no impact on third party land use.

Impacts on land use would be reduced by aligning the road to avoid disturbance to heritage sites and large areas of intact vegetation, and by allowing for surface water drainage by including floodways in road design.

Passing bays

Passing bays would be required along the Stuart Highway north of Port Augusta and on Olympic Way between Pimba and Olympic Dam (see Section 5.9.4) to allow the transport of over-dimensional loads from the pre-assembly yard at Port Augusta. The need for and specific locations of bays would be determined during detailed design, but bays would be likely to be spaced approximately 17 km apart (see Figure 5.33). The bays would be approximately 30 m wide and 250 m long.

It is anticipated that, where practical, passing bays would be located predominantly within road reserves, including existing rest areas. However, for some bays, small areas of pastoral land adjacent to the road corridor would be required. This may affect up to eight pastoral stations between Port Augusta and Olympic Dam.

Nine bays would be constructed on the Stuart Highway between the Port Augusta pre-assembly yard and Pimba, covering approximately 7.5 ha. Six bays would be constructed on Olympic Way between Pimba and Olympic Dam, covering approximately 4.5 ha. There would be a permanent change in land use, from pastoral to road.

Borrow pits

Borrow pits would be required to provide crushed rock and granular material for road construction works. The material would be used in the gravel pavement areas for the passing bays (see Section 5.9.4 and above), and in the construction of the embankment for the rail line and the Olympic Way overpass (see Section 5.9.4). The number and location of borrow pits

would be determined during the detailed design phase; however, it is anticipated that approximately 13 borrow pits (of 50 m x 50 m area) would be required for roadworks south of Pimba, and approximately 10 borrow pits (of 130 m x 130 m area) for road and rail construction north of Pimba (see Figure 5.33).

It is anticipated that the borrow pits would be located entirely within pastoral land adjacent to the road corridor, and would involve a short-term change in land use of approximately 20 ha. The borrow pits would be rehabilitated after construction, allowing the existing pastoral land use to continue.

Port facilities

The existing facilities at Port Adelaide (see Figure 9.13) would continue to be used. Diesel, lubricants, and other petroleum products would be imported through Outer Harbor using existing third party facilities. Additional port facilities would be required at Outer Harbor (for the storage and handling of imported sulphur prill) and at the Port of Darwin (for the storage and handling of uranium oxide and bulk concentrate).

Outer Harbor

A new sulphur handling facility would be constructed at Outer Harbor on industrial land provided by third parties (see Figure 9.13). The new facility would comprise a ship unloader, a closed conveyor, a storage shed, a rail spur and rail loading facilities. The construction and operation of the facility would occupy approximately 20 ha of existing industrial land and would require no long-term change in land use.

Port of Darwin

It is proposed to establish facilities for the handling, storage and export of bulk concentrate at East Arm in the Port of Darwin (see Figure 9.19 and Appendix E4). Additional uranium oxide would also need to be accommodated at the existing Toll distribution centre at East Arm (see Section 9.5 and Appendix E4).

The site for the proposed BHP Billiton facilities is currently a combination of Crown leases, freehold allotments held by various parties, and the seabed (which would be reclaimed by the Darwin Port Corporation prior to construction of BHP Billiton facilities). BHP Billiton would negotiate to occupy the land under freehold tenure or, alternatively, under a long-term lease.

The construction of the proposed infrastructure would be consistent with the Darwin Port Corporation Draft Master Plan for land use at East Arm. The facility would occupy approximately 16 ha, consisting of:

- 12 ha for the rail loop and embankments
- 4 ha for the concentrate storage shed, ancillary infrastructure, office buildings and maintenance areas
- 0.2 ha for the rail unload and wagons wash-down facility.



Figure 9.19 Existing and proposed land use at Port of Darwin, East Arm



As the proposed facility would occupy existing industrial land or reclaimed land, there would be no impacts on existing land use. Based on current schedules, it is not anticipated that the facilities would be required until 2016.

Landing facility

The proposed landing facility would consist of a piered jetty structure and rock pad covering approximately 1 ha (see Figure 9.20). In accordance with quarantine requirements, a quarantine laydown area of approximately 2 ha would be established adjacent to the landing facility. This area would allow for the temporary storage and inspection of imported materials prior to their transport to the pre-assembly yard on the outskirts of Port Augusta (see Figure 9.12) and then to Olympic Dam.

The proposed site for the quarantine laydown area is predominantly disturbed vacant Crown land and includes one residential property (see Figure 9.20 and Plate 9.28). Thirteen residential properties are located within 1 km south of the proposed facility. BHP Billiton is continuing discussions with directly affected landholders.



Plate 9.28 Proposed site for the quarantine laydown area of the landing facility



Plate 9.29 Proposed location of Hiltaba Village and airport

As the landing facility would continue to be used on an infrequent basis for the importation of infrastructure associated with the ongoing Olympic Dam operation, the landing facility and quarantine laydown area would be retained, and would therefore require a permanent change to land use from vacant and residential to light industrial.

Airport

The new airport would be located approximately 17 km along the Andamooka Road to the east of Roxby Downs and immediately south of the proposed Hiltaba Village (see Figure 9.16, Plate 9.29 and Section 9.7.6). The airport site would occupy approximately 105 ha.

The land use in the area of the proposed airport would change permanently. The area of affected land is entirely within the BHP Billiton-held Andamooka pastoral station and would only affect a small proportion (0.04%) of this pastoral lease. There would be no impact on third-party land use. BHP Billiton would seek freehold title over the site, which would require excision of this land from the Andamooka pastoral lease.

A services corridor (for optical fibre cable, water and sewer pipelines) from Roxby Downs to the airport would be required. The corridor would be approximately 10 m wide and approximately 25 km long, and would also service the proposed Hiltaba Village (see Figure 9.16 and Section 9.7.6).

Services would be installed underground within the alignment of the existing road corridor, and would therefore result in no permanent change in land use.

9.7.6 TOWNSHIP AND ACCOMMODATION

Roxby Downs township

The Roxby Downs township would be expanded in order to accommodate an estimated 10,000 people and associated services. Approximately 465 ha of currently vacant land would be developed for the township expansion within the Roxby Downs Municipality (see Figure 9.21).

The expansion would result in a permanent change to residential, accommodation (including contractor camps and a caravan park), commercial, recreation and light industrial land uses. The expansion would conform to the proposed land uses of the draft Roxby Downs Municipality Development Plan Amendment and as envisaged in the Roxby Downs Draft Master Plan (see Appendix F4).

Olympic Dam Village

As part of the proposed expansion, all land uses within the Olympic Dam Village would be permanently changed to mining.

The existing Olympic Village accommodation facilities (see Section 9.5.5) would be decommissioned and new expanded facilities would be built approximately 17 km along the Andamooka Road (see Figure 9.16). The new facility would be named Hiltaba Village, and would occupy approximately 60 ha.



Figure 9.20 Existing and proposed land use around the landing facility

Land use in the area of the proposed Hiltaba Village would change permanently. The area of affected land is entirely within the BHP Billiton-held Andamooka station and would only affect a small proportion (0.002%) of this lease. Therefore, there would be no impact on third-party land use. BHP Billiton would seek freehold title over the site, which would require excision of this land from the Andamooka pastoral lease.

A services corridor (for electricity, optical fibre cable, and water and sewer pipelines) from Roxby Downs to Hiltaba Village would be required. The corridor would be approximately 10 m wide and approximately 25 km long, and would also extend to service the proposed airport. All services would be installed within the alignment of the existing road corridor and, apart from the electricity transmission line, would be underground. There would be approximately 5 ha permanent change in land use associated with the electricity towers.

Prior to establishing the proposed open pit mine, accommodation facilities for the pre-strip contractor would be established at Camp 2, south of the existing Olympic Dam Village (see Figure 9.21). These facilities would be located

within the expanded SML and would subsequently be decommissioned as mining activities progressed, along with the existing Olympic Village. The proposed Camp 2 would be constructed on the site of a previous contractor accommodation facility.

The existing heavy industry activities, currently located on Charlton Road to the south of Olympic Village (see Figure 9.14), would be relocated to a new heavy industrial area 3 km south of the existing Charlton Road industrial area (see Figure 9.21). This area would occupy 73 ha of currently vacant land.

The petrol station east of Olympic Village is on freehold land that is not held by BHP Billiton. The owner of the land has been advised that expanded mining activities are expected to impact on the site so that its land use would change (see Figure 9.21), and BHP Billiton is negotiating for the utilisation of the site.

Table 9.5 Estimated area by land tenure type associated with each project component of the proposed expansion

Project component	Land tenure type						Total area (ha)
	Crown	Pastoral lease	BHP Billiton (pastoral land)	Freehold	Commonwealth	Roxby Downs Municipality	
Expanded SML			28,500			3,400	31,900 ¹
Desalination plant	21						21
Water supply pipeline		10					10
Electricity line to Point Lowly	2	5		1			8
Electricity line to Olympic Dam		71	11			3	85
Gas pipeline	44	282					326
Rail line		40	44		2	5	91
Pimba intermodal facility		20			30		50
Access corridor	10			22	18		50
Pre-assembly yard	25						25
Passing bays		12					12
Borefield Road			60				60
Outer Harbor				20			20
Port of Darwin	16						16
Landing facility	2			1			3
Airport			105				105
Roxby Downs expansion						465	465
Hiltaba Village			60				60
Services corridor to Hiltaba Village and airport			13				13
Heavy industrial area						73	73
Total	120	440	28,793	44	50	3,946	33,393

¹ The expanded SML includes Camp 2 and sections of the electricity, rail and gas corridors.

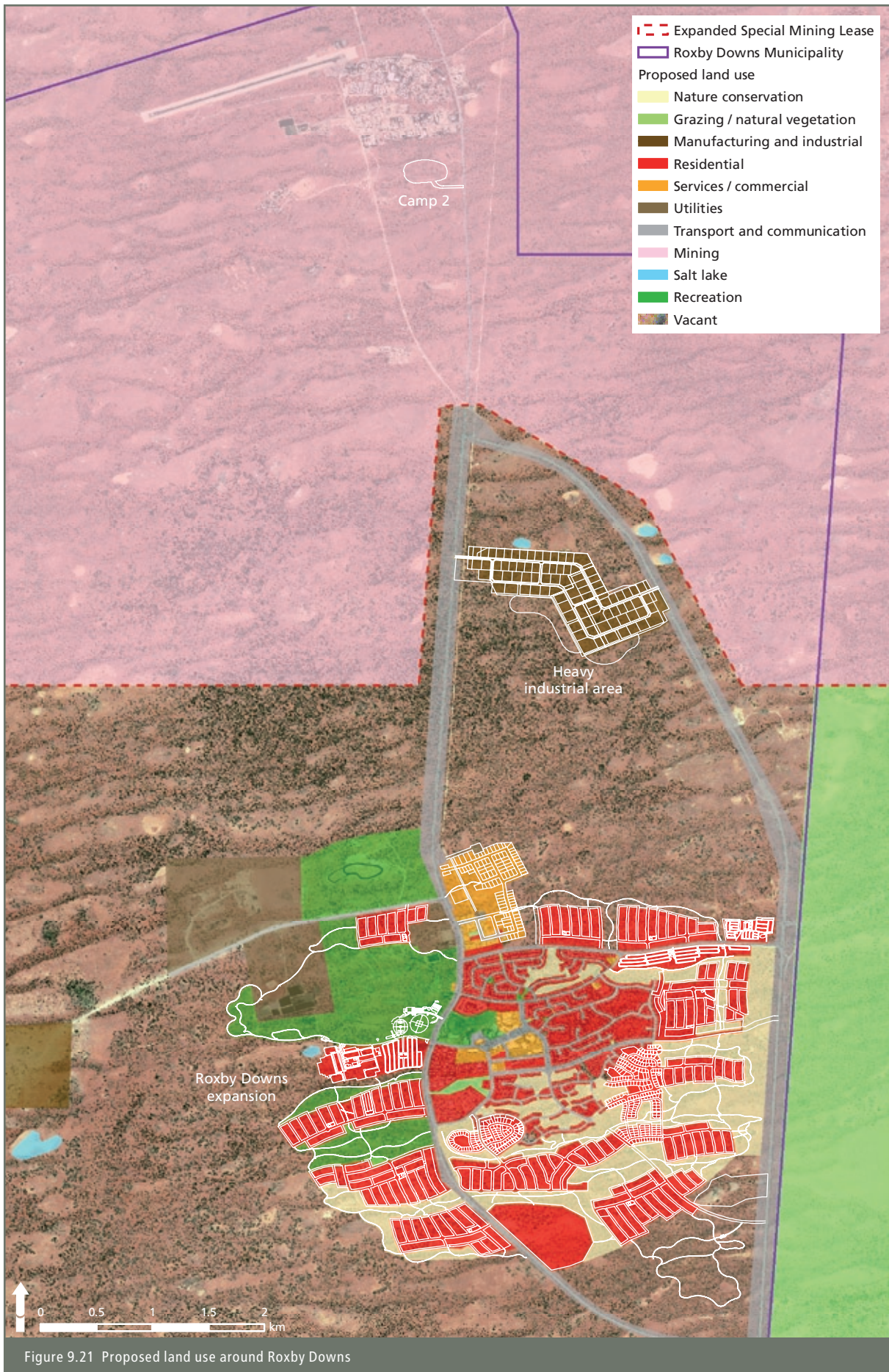


Figure 9.21 Proposed land use around Roxby Downs

9.8 FINDINGS AND CONCLUSIONS

The bulk of the land required to support the proposed expansion (28,793 ha or 86% of the land to be permanently disturbed) is located on pastoral leases held by BHP Billiton (see Table 9.5). The tenure of the remaining 4,600 ha which would be permanently disturbed comprises:

- 3,946 ha of the Roxby Downs Municipality (including 3,400 ha within the expanded SML)
- 440 ha of pastoral land
- 120 ha of vacant Crown land
- 44 ha of freehold land
- 50 ha of Commonwealth land.

Only a small proportion of pastoral land (29,233 ha) would be permanently affected by the various elements of the proposed expansion, predominantly in association with the expansion of the SML (see Table 9.6). The majority of the pastoral land that would undergo permanent land use change would occur exclusively in pastoral leases held by BHP Billiton (28,793 ha or 99%).

Most of the proposed additions to mining and metallurgical infrastructure and the metallurgical plant would be located within the existing SML. However, it is anticipated that some changes to existing land tenure would be necessary to support the proposed expansion.

Any changes to land tenure required would be made in accordance with applicable laws, including through Indenture based rights or negotiated commercial purchase. Where appropriate, BHP Billiton would seek to obtain freehold title (including an extension to the SML) or other applicable tenure.

Where the acquisition of freehold land, creation of new leases, excision from existing Crown leases or the creation of new easements is anticipated, BHP Billiton would seek to commence or continue negotiations with the various current landholders in order to secure the appropriate tenure arrangements for the relevant components of the expansion.

Table 9.6 Estimated area of pastoral lands permanently affected by the proposed expansion

Project component	Pastoral leases affected ¹	Area permanently affected (ha)	Percentage of relevant pastoral lease/s permanently affected
Expanded Special Mining Lease	<i>Roxby Downs</i>	19,200	12.8
	<i>Andamooka</i>	9,300	3.8
Water supply pipeline ²	Various	10	0.007
Electricity transmission line – Cultana to Point Lowly	Tregalana	5	0.01
Electricity transmission line – Port Augusta to Olympic Dam ²	Various	82	0.004
	<i>Purple Downs</i>		0.01
	<i>Roxby Downs</i>		0.001
Gas pipeline	Various	2	0.00004
Rail line ²	Arcoona	40	0.01
	<i>Purple Downs</i>	28	0.04
	<i>Roxby Downs</i>	16	0.01
Pimba intermodal facility	Arcoona	20	0.005
Passing bays ³	Various	8	0.001
	<i>Purple Downs</i>	2	0.003
	<i>Roxby Downs</i>	2	0.001
Borefield Road relocation	<i>Andamooka</i>	60	0.02
Airport	<i>Andamooka</i>	105	0.04
Hiltaba Village	<i>Andamooka</i>	60	0.04
Services corridor to Hiltaba Village and airport	<i>Andamooka</i>	13	0.005
Total		28,953	0.004

¹ Pastoral leases held by BHP Billiton are in italics.

² Calculations for rail line and electricity transmission corridors do not include land within expanded SML and Roxby Downs Municipality.

³ For the purposes of the EIS, the passing bays are assumed to be located entirely within pastoral land.