4 LOCATION OF PROJECT COMPONENTS

QGC proposes to develop the Queensland Curtis LNG (QCLNG) Project in Queensland, Australia. This chapter, *Chapter 4*, provides an overview of the regional and local context within which the Project components (outlined in *Chapter 3*) are proposed. This overview is provided to help stakeholders better understand the detailed Project description in *Chapters 7* to *17*. The location of the Gas Field Component, LNG Component and preferred Pipeline corridors are shown in *Figure 2.4.1* and *Figure 2.4.2.*

More detailed descriptions and locations of the environmental (including land-use and infrastructure), social, cultural and economic baseline values falling within the Project's area of influence are described and mapped in *Volumes 3 to 8* of this EIS.

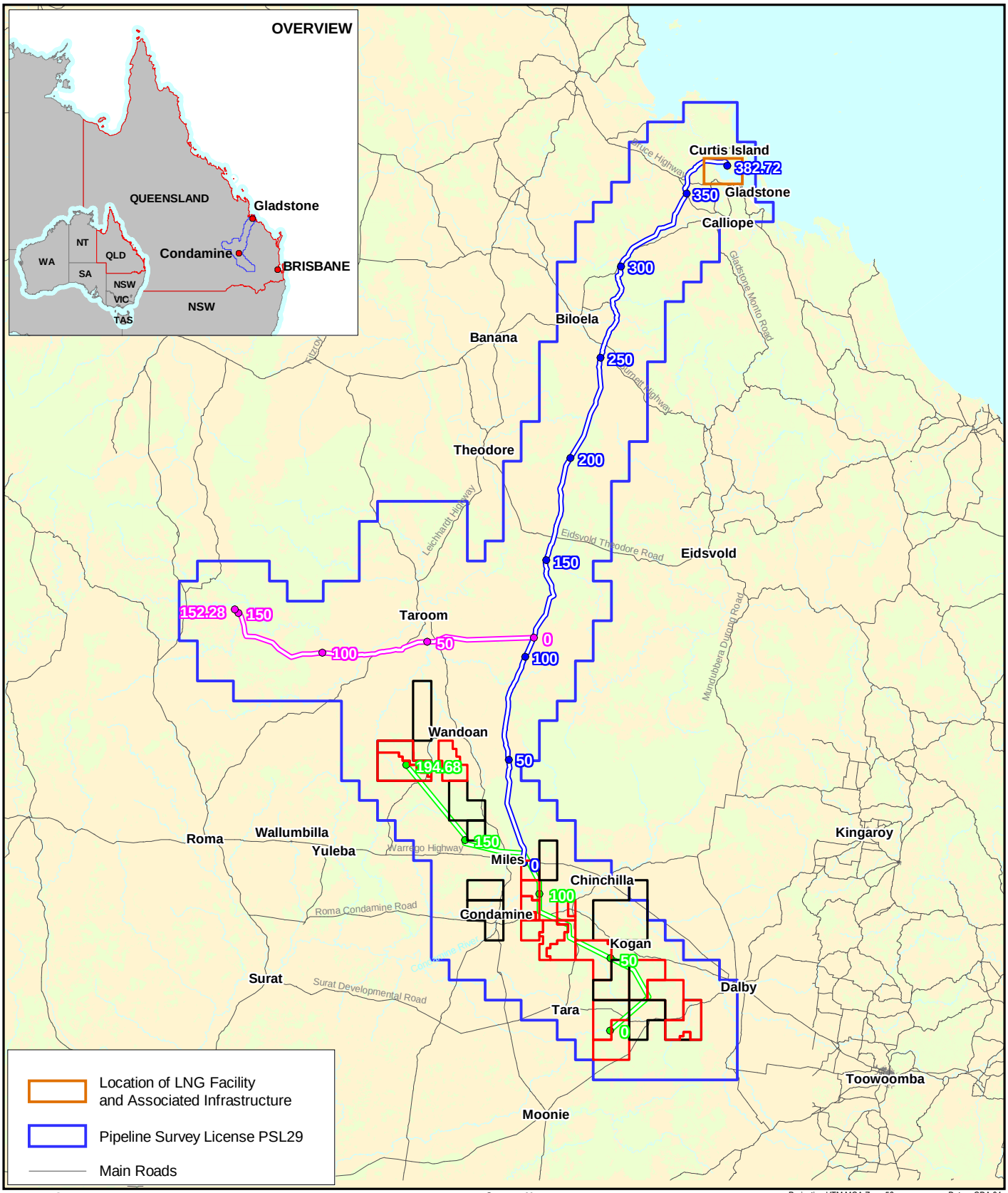
The location of the Gas Field Component is outlined in *Section 4.1*, the Pipeline in *Section 4.2* and the LNG Component (including the LNG Facility, marine facilities and facilities on the mainland at Gladstone) in *Section 4.3*. *Section 4.4* describes the location of the Ancillary Infrastructure.

4.1 GAS FIELD COMPONENT

4.1.1 Regional Context

The Gas Field Component of the Project is located within QGC's existing exploration and petroleum tenures, within the Walloon Fairway of the Surat Basin in the southern Queensland. These tenements cover some 468,700 ha, predominantly within the Western Downs Regional Council (previously Dalby Regional Council) area. The Gas Field development area is located between the towns of Moonie in the south, Wandoan and Miles in the north, Condamine and Tara in the west, and Chinchilla and Kogan in the east, as shown in Figure 2.4.3.

The proposed infrastructure footprint will be approximately 13,500 ha before progressive rehabilitation and 6,000 ha following progressive rehabilitation. Due to the progressive staging of Project infrastructure construction, some infrastructure footprints will be progressively rehabilitated before the construction of other infrastructure footprints commence. This is particularly relevant to well and gathering line establishment, which will be undertaken over the 20-year-life of the Project. Thus, it is unlikely that 13,500 ha will be disturbed at any one time. *Table 2.4.1* shows the estimated maximum area of disturbance by infrastructure type and the estimated area of disturbance following progressive rehabilitation.



Legend:

- Export Pipeline & Kilometre Point
- Lateral Pipeline & Kilometre Point
- Upstream Infrastructure Corridor & Kilometre Point
- CSG Fields - ATP
- CSG Fields - PL & PLA

Source Note:
1:250,000 Topographic vector copyright Geoscience Australia

Projection UTM MGA Zone 56 Datum GDA 94

0 50 75 100
Kilometres

N

QUEENSLAND CURTIS LNG A BG Group business	Project	Queensland Curtis LNG Project	Title QCLNG Project Study Area
	Client	QGC - A BG Group business	
ERM Environmental Resources Management Australia Pty Ltd	Drawn DB	Volume 2 Figure 2.4.1	Disclaimer: Maps and Figures contained in this Report may be based on Third Party Data, may not be to scale and are intended as Guides only. ERM does not warrant the accuracy of any such Maps and Figures.
	Approved CDiP	File No EO5-P-MA-96208	
	Date 02.03.09	Revision A	

QUEENSLAND CURTIS LNG A BG Group business	Project	Queensland Curtis LNG Project	Title Location of the LNG Facility and Associated Infrastructure
	Client	QGC - A BG Group business	
ERM Environmental Resources Management Australia Pty Ltd	Drawn JB	Volume 2 Figure 2.4.2	Disclaimer: Maps and Figures contained in this Report may be based on Third Party Data, may not to be to scale and are intended as Guides only. ERM does not warrant the accuracy of any such Maps and Figures.
	Approved FM	File No: 0086165b_EIS_PD_GIS010_F2.4.2	
	Date 07.07.09	Revision 3	

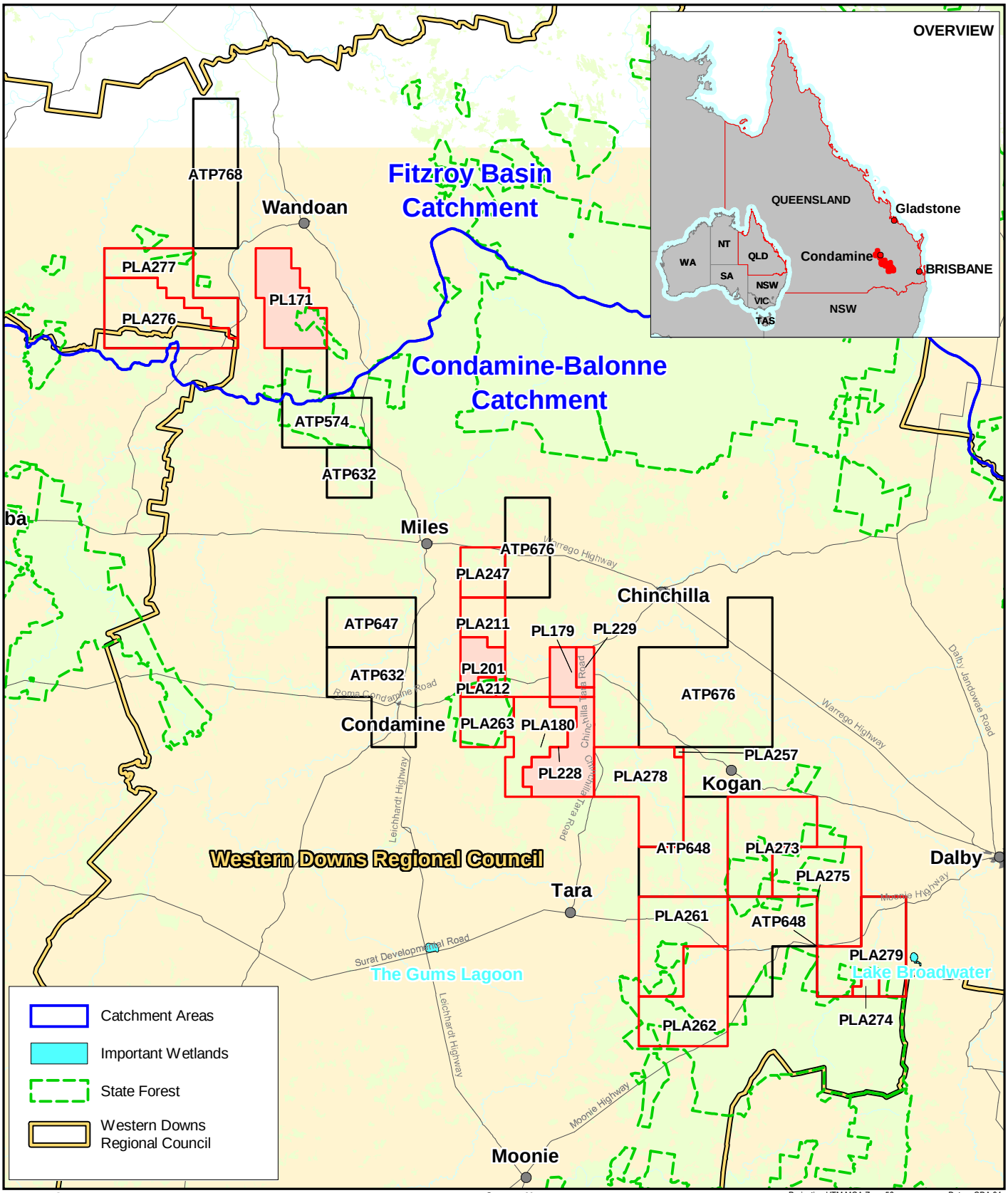
Table 2.4.1 Gas Field Area of Disturbance

Activity	Maximum area of disturbance before progressive rehabilitation (ha)	Area of disturbance after progressive rehabilitation (ha)
Well site preparation, drilling and well establishment	6,000	3,000
Gathering lines (gas and water)	6,000	1,200
Compression infrastructure	200	200
Water treatment	25	25
Water storage	550	550
Access roads	800	720
Accommodation camps	65	15
Total	**13,640 ha**	**5,710 ha**

Each of the 6,000 wells will occupy an estimated lease area of 1 ha before progressive rehabilitation of the well establishment area. Following rehabilitation, each well lease area will occupy approximately 5,000 m^2. Approximately 3,000 km of gathering lines will be required to connect wells to compression facilities. Following rehabilitation, the width of the gathering line Right-of-Way (RoW) will be reduced to approximately 4 m to 5 m.

Existing gas production activities within the area of the Gas Field Component encompass, approximately, a further 2,000 ha. The proposed Gas Field in support of the Project and for gas production for the domestic market will therefore entail a cumulative well lease and infrastructure disturbance to between 8,000 ha and 15,500 ha of land (not accounting for decommissioning and rehabilitation). Existing gas production and associated activities are approved under separate licences to those sought for the Project. Proposed tenements for the Project for gas production and associated activities are shown in *Figure 2.4.3.*

The exact location of each item of infrastructure has not been determined as individual well locations will only be finalised as well exploration and establishment continues over the life of the Project. The process for selection of well sites is described in Volume 2, Chapter 11. The location of other items of infrastructure, such as compression facilities, water treatment and water storage will be dependent on the location of wells. However, initial engineering indicates that infrastructure will be evenly distributed across the tenements.



Legend:

- Gas Fields - Authority to Prospect
- Gas Fields - Petroleum Lease Application
- Gas Fields - Petroleum Lease

Source Note:

1:250,000 Topographic vector copyright Geoscience Australia
QLD Protected Areas, Catchment Areas and Important Wetlands sourced from Environmental Protection Agency

Projection UTM MGA Zone 56 Datum GDA 94

0 10 20 30 40 Kilometres

N

QUEENSLAND CURTIS LNG A BG Group business	Project	Queensland Curtis LNG Project	Title Location of Gas Fields Petroleum Tenures
	Client	QGC - A BG Group business	
ERM Environmental Resources Management Australia Pty Ltd	Drawn Mipela	Volume 2 Figure 2.4.3	Disclaimer: Maps and Figures contained in this Report may be based on Third Party Data, may not be to scale and are intended as Guides only. ERM does not warrant the accuracy of any such Maps and Figures.
	Approved CDP	File No: QC02-T-MA-00010	
	Date 14.07.09	Revision A	

The region is rural in nature. Pastoral activities occur on approximately 332,000 ha (or 71 per cent of the Gas Field area). Cropping occurs on approximately 56,000 ha (or 12 per cent of the Gas Field area). The majority of cropping occurs along the margins of the Condamine River and north of Wandoan. State forests occupy approximately 53,000 ha or 11 per cent of the Gas Field area, and are used for timber harvesting and cattle grazing. Other land uses in the Gas Field area include rural residential zones, horticulture and feedlots.

There are several mining tenures and existing and proposed developments in the energy and power sectors in the region (refer *Figure 2.4.4*). The majority of mining tenures in the region are aimed at exploiting the coal seam resources. Infrastructure and mining projects are discussed in detail in *Volume 3, Chapter 5*.

There are no World Heritage Properties or National Heritage Places within the Gas Field area. The Lake Broadwater Conservation Park lies just outside of the Gas Field area, 25 km south-west of Dalby. The Gums Lagoon, which is protected by a reserve for natural resource management, lies 26 km south of Tara. Several state forests, used for timber harvesting, occur within QGC's tenements (refer *Figure 2.4.3*).

The Gas Field Component lies within the Condamine–Balonne catchment and the Fitzroy Basin catchment. Two sites declared Wetlands of International Importance under the Ramsar Convention are located in these two catchment areas. The Narran Lake Nature Reserve falls in the Condamine–Balonne catchment but is approximately 450 km south-west of the Gas Field area. The Shoalwater/Corio Bay wetland area is approximately 460 km to the north-east in the Fitzroy Basin catchment. Due to the distance of the wetlands from the Gas Field it is highly unlikely that the Gas Field development will impact these protected areas.

4.1.2 Local Context

Due to the extent of the Gas Fields, issues that would otherwise be described in *Section 4.1.2 Local Context* have been described in *Section 4.1.1 Regional Context*, including areas of disturbance, regional councils affected, mining and petroleum tenements in the region, absence of any World Heritage Areas and Wetlands of Importance.

The Gas Field is located within the following petroleum tenures (refer to *Figure 2.4.3*)

- **Authority to Prospect (ATP):** 574, 610, 621, 632 (portion of), 647, 648, 651, 676 and 768 (portion of)
- **Petroleum Lease (PL):** 179, 201, 228, 229, 171,180
- **Petroleum Lease Application (PLA):** 211, 212, 247, 257, 259, 261, 262, 263, 273, 274, 275, 276, 277, 278, 279.

Planning scheme zonings in relation to the Gas Fields are shown in *Figure 2.4.3 and Figure 3.5.1*.

Features of national and environmental significance are mapped and described in detail in *Volume 3 chapter 7* and *8*. Refer to *Figures 3.7.1 to 3.7.9, 3.8.1 and 3.8.2*, which show state forests, threatened ecological communities listed as Endangered and Of Concern under the EPBC Act and VM Act, Endangered, Vulnerable and Rare flora species, wetlands from the Directory of Important Wetlands and freshwater wetlands.

Gas Field development is dependent on the location of gas extraction, which will be progressive over the life of the Project. The exact location of Gas Field infrastructure has not been determined and therefore the precise location of buffer zones, proposed buffer areas and areas of vegetation clearing are not known. However, ecological constraints mapping (refer to *Figures 3.7.10* and *3.7.11*) has been developed to limit or manage development in various zones of ecological significance. *Volume 3, Chapter 7* provides a detailed discussion of the expected extent of vegetation clearing and measures to avoid, mitigate or offset impacts.

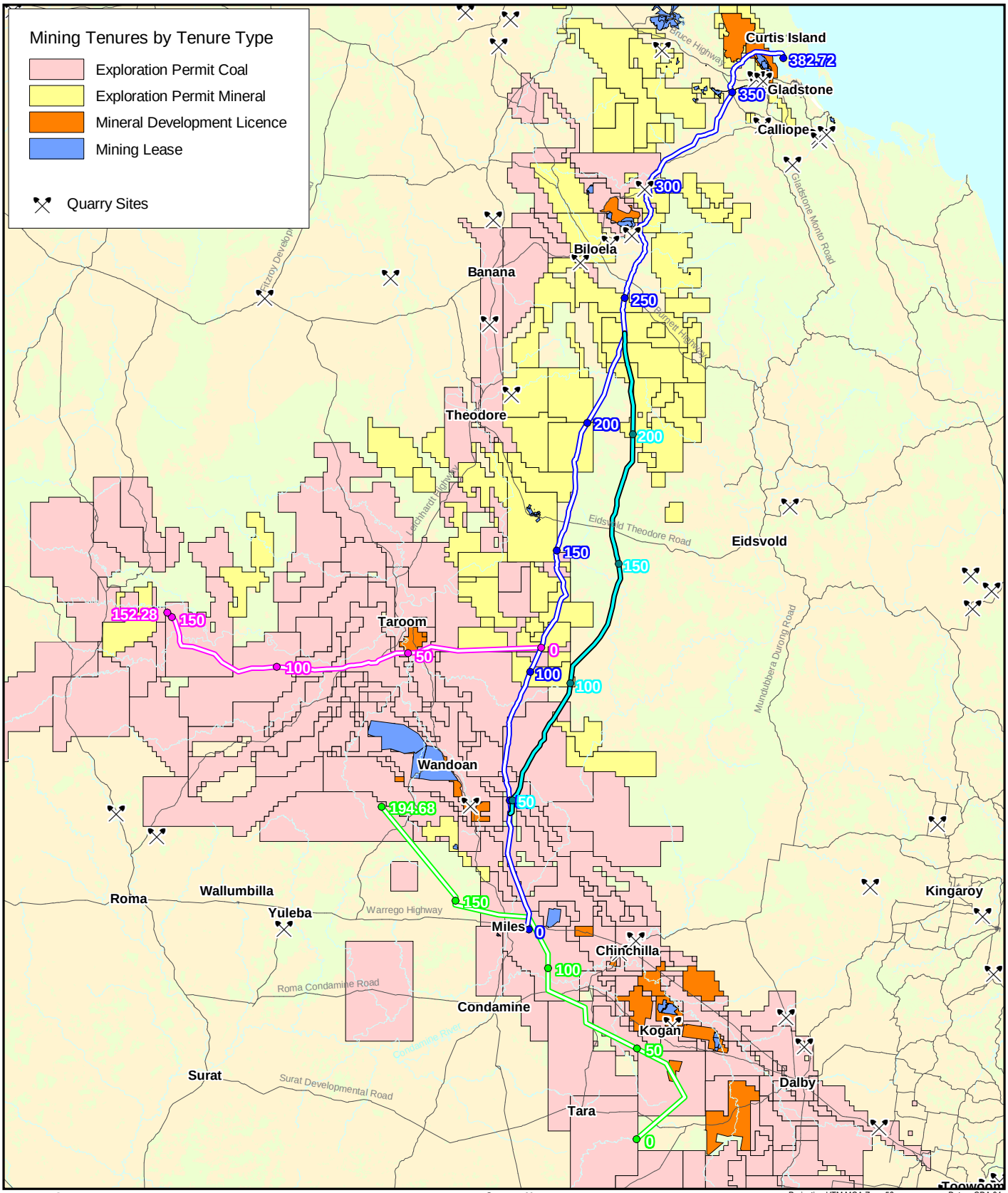
QGC owns approximately 9,500 ha of selective freehold land within the acreage of PLs, ATPs and PLAs. These properties have been purchased for the location of infrastructure such as the field compression stations (FCS), central processing plants (CPP), water treatment facilities and evaporation ponds. The majority (98 per cent) of QGC's tenements are on land tenures that QGC does not own. Land tenure within the Gas Field area comprises 75 per cent freehold land, 19 per cent state forest and lands lease, with the remaining 6 per cent comprising infrastructure reserves, stock routes and crown reserves.

The Gas Field development will not affect Commonwealth land.

4.2 PIPELINE

4.2.1 Regional Context

The Export Pipeline will commence from QGC's coal seam gas (CSG) production leases near Miles and extend north-east to Gladstone, a distance of approximately 380 km. Between the mainland at Gladstone and the Facility on Curtis Island, the Export Pipeline will require a marine crossing of the tidal inlet known as The Narrows, within the Port of Gladstone. Options for the exact route of the Export Pipeline across The Narrows are currently under investigation, but potential routes involve a crossing from the area around Phillipies Landing Road and Friend Point on the mainland to the area around Laird Point on Curtis Island.



Legend:

- Export Pipeline & Kilometre Point
- Export Pipeline Option 2
- Lateral Pipeline & Kilometre Point
- Upstream Infrastructure Corridor & Kilometre Point

Source Note:

1:250,000 Topographic vector copyright Geoscience Australia

Projection UTM MGA Zone 56 Datum GDA 94

0 20 40 60 80 Kilometres

N

QUEENSLAND CURTIS LNG A BG Group business	Project	Queensland Curtis LNG Project	Title **Mining Tenures**
	Client	QGC - A BG Group business	
ERM Environmental Resources Management Australia Pty Ltd	Drawn Mipela	Volume 2 Figure 2.4.4	Disclaimer: Maps and Figures contained in this Report may be based on Third Party Data, may not be to scale and are intended as Guides only. ERM does not warrant the accuracy of any such Maps and Figures.
	Approved CDP	File No EO5-P-MA-96177	
	Date 30.04.09	Revision A	

Route options have been investigated for the Export Pipeline route and these are detailed in *Volume 2, Chapter 12*. The preferred route for the Export Pipeline is described in detail in *Volume 2, Chapter 12.*

The Lateral Pipeline, will extend from the Fairview Gas Fields and connect to the Export Pipeline at a point just east of Taroom; a distance of approximately 150 km (refer to *Figure 2.4.1*). This would enable the connection of additional CSG fields to the Export Pipeline.

The Collection Header, located in the Upstream Infrastructure Corridor (UIC), will link QGC's production areas. This pipeline will be approximately 200 km in length and will generally extend from an area east of Tara to west of Wandoan.

The pipelines will traverse five Council areas as set out in *Table 2.4.2*.

Table 2.4.2 Councils Intersected by the Pipelines

Pipeline	Council				
	Western Downs Regional	Roma Regional	Banana Shire	North Burnett Regional	Gladstone Regional
Export					
Lateral					
Collection Header					

For most of their length the Pipeline routes bypass built-up urban areas and are mainly through rural areas where the land has been cleared and used for agricultural purposes. Agricultural activities are predominantly focused around cattle grazing, with some dry-land cropping and some irrigated and intensively farmed land near Thangool (Kilometre Point (KP) 210). There are also a number of native tree forestry plantations on the eastern footslopes of the Callide Ranges (KP300). Within the Gladstone Regional Council, the Pipeline will pass through the Aldoga and Targinie precincts of the Gladstone State Development Area (GSDA). The remainder of the Pipeline, in the Gladstone Regional Council, passes through agriculture land of class C1, C2 and C3, a small section (less than 5 km) of horticultural land and a small section (less than 5 km) of non-agricultural land (coastal margins). The Export Pipeline crossing of The Narrows between the mainland and Curtis Island is located within the limits of the Port of Gladstone.

The portion of the Pipeline which is located between the mainland and the Facility on Curtis Island will fall within the boundary of the Great Barrier Reef World Heritage Area (GBRWHA) which is also included on the register of National Heritage Places. The preferred alignment of the Pipeline (subject to further assessment) lies just outside the southern boundary of the state-run Great Barrier Reef Coast Marine Park (GBRCMP) between Friend Point and Laird Point. The marine crossing falls within the boundaries of the Rodds Bay Dugong Protection Area (DPA). Excluding the marine crossing, the Pipeline will be routed to avoid protected areas such as National Parks and Conservation Reserves on the mainland.

The most significant river systems along the Pipeline routes are the Calliope River, Callide Creek and the Dawson River. No Wetlands of International Significance are located within the areas of the proposed Pipelines. The Shoalwater/Corio Bay Ramsar Wetlands are located within the Fitzroy Basin catchment. As the pipelines are more than 40 km to the north at the closest approach they will not impact on the ecological character of the Ramsar Wetlands. Wetlands of state significance are set out in the Directory of Important Wetlands in Australia. The Pipeline will cross The Narrows and Port Curtis Wetlands which are listed in this directory.

The Export Pipeline and the Collection Header within the UIC have been assessed in detail as part of this EIS. Detailed travelogues for both of these routes are presented in *Volume 2, Chapter 12*. The Lateral Pipeline is still in feasibility stage, being market dependent, and has only been reviewed at a desktop level (refer to *Volume 2, Chapter 12*).

4.2.2 Local Context

Due to the length of the Pipeline, issues that would otherwise be described in *Section 4.2.2 Local Context* have been described in *Section 4.2.1 Regional Context*, including proximity to World Heritage Areas, Great Barrier Reef Coast Marine Park, significant river systems and significant wetlands.

The Pipeline network will cross a number of mining and petroleum exploration tenures, including mineral development leases and petroleum production leases. QGC will liaise with tenure holders to select a final route which avoids, to the extent possible, identified highly prospective resource areas. *Figure 2.4.5* and *Figure 2.4.6* show the resource tenures along the route. This is discussed in detail in *Volume 4, Chapter 5.*

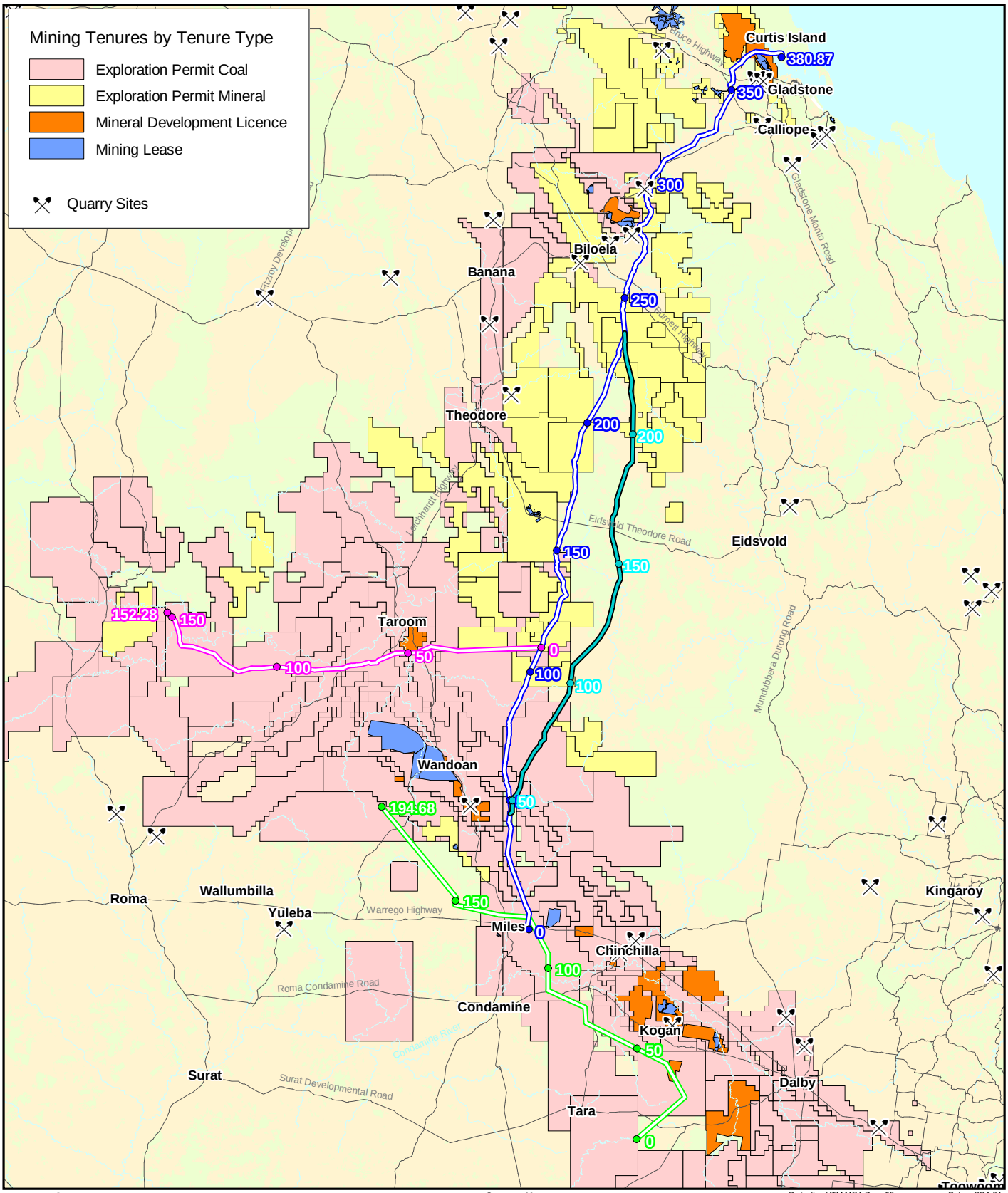
The majority of the land which the Pipeline network traverses is freehold, with occasional parcels of leasehold and Crown land (refer to *Volume 4, Chapter 5*).

The Pipeline development will not affect Commonwealth land.

In addition to these pipelines, a network of other pipelines will link the gas wells to the Gas Field UIC. These gas- and water-gathering lines are considered incidental activities, as defined under the *Petroleum and Gas (Production and Safety) Act 2004* (Qld), to the gas production activities and are addressed in *Volume 2, Chapter 7.*

Planning scheme zonings in relation to the Pipeline are shown in *Figure 4.5.1*.

Features of national and environmental significance are mapped and described in detail in *Volume 4 chapter 7 and 8*. Refer to *Figures 4.7.1 to 4.7.10 and 4.8.1*, which show threatened ecological communities listed as Endangered and Of Concern under the *EPBC Act* and *VM Act*, Endangered, Vulnerable and Rare flora species and wetlands from the Directory of Important Wetlands.



Legend:

- Export Pipeline & Kilometre Point
- Export Pipeline Option 2
- Lateral Pipeline & Kilometre Point
- Upstream Infrastructure Corridor & Kilometre Point

Source Note:

1:250,000 Topographic vector copyright Geoscience Australia

Projection UTM MGA Zone 56 Datum GDA 94

0 20 40 60 80

Kilometres

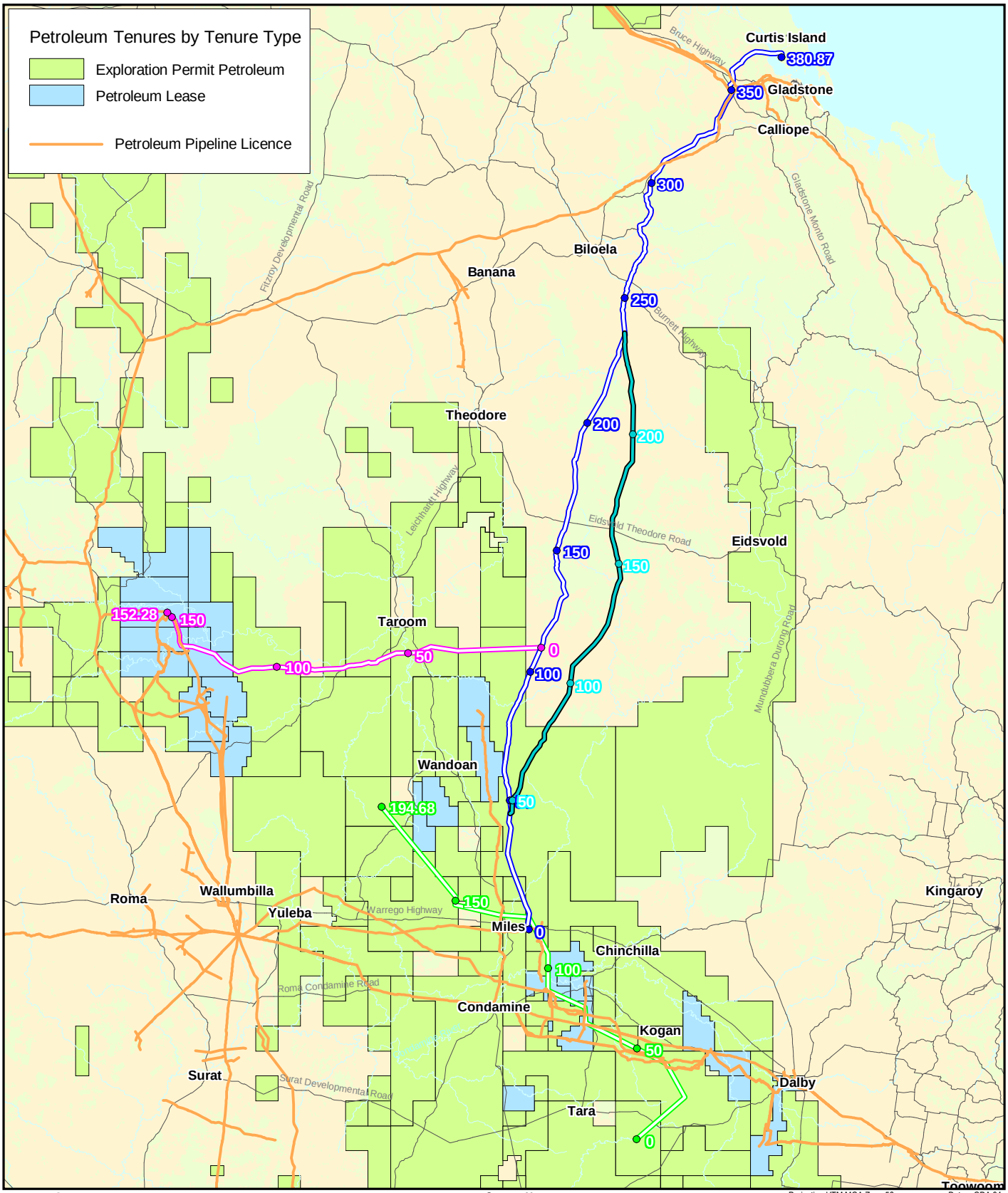
N

QUEENSLAND CURTIS LNG
A BG Group business

ERM
Environmental Resources Management Australia Pty Ltd

Project	Queensland Curtis LNG Project	Title	Mining Tenures Along Export Pipeline Route
Client	QGC - A BG Group business		
Drawn	Mipela	Volume 2	Figure 2.4.5
Approved	CDP	File No	EO5-P-MA-96177
Date	27.05.09	Revision	A

Disclaimer:
Maps and Figures contained in this Report may be based on Third Party Data, may not be to scale and are intended as Guides only.
ERM does not warrant the accuracy of any such Maps and Figures.



Legend:

- Export Pipeline & Kilometre Point
- Export Pipeline Option 2 & Kilometre Point
- Lateral Pipeline & Kilometre Point
- Upstream Infrastructure Corridor & Kilometre Point

Source Note:

1:250,000 Topographic vector copyright Geoscience Australia

Projection UTM MGA Zone 56 Datum GDA 94

0 20 40 60 80

Kilometres

N

QUEENSLAND CURTIS LNG A BG Group business	Project	Queensland Curtis LNG Project	Title: Petroleum Tenures Along Export Pipeline Route
	Client	QGC - A BG Group business	
ERM Environmental Resources Management Australia Pty Ltd	Drawn: Mipela	Volume 2 Figure 2.4.6	Disclaimer: Maps and Figures contained in this Report may be based on Third Party Data, may not be to scale and are intended as Guides only. ERM does not warrant the accuracy of any such Maps and Figures.
	Approved: CDP	File No EO5-P-MA-96178	
	Date: 27.05.09	Revision A	

Pipeline route selection is described in *Volume 2, Chapter 12* and considers ecological constraints along proposed routes. *Volume 4, Chapter 7* provides a detailed discussion of the expected extent of vegetation clearing and measures to avoid, mitigate or offset impacts.

4.3 LNG FACILITY

4.3.1 Regional Context

4.3.1.1 Onshore Facilities – Curtis Island

QGC is proposing to locate the LNG Facility, within the overall LNG Component, on the south-western portion of Curtis Island (on the northern side of the Port of Gladstone), between Laird Point and Hamilton Point. This area of Curtis Island is part of the Gladstone State Development Area (GSDA) as designated by the Queensland Coordinator-General. The proposed LNG Facility falls within the Curtis Island Industry Precinct of the GSDA. Covering the western part of Curtis Island to the south of Graham Creek, the Development Scheme for the GSDA[1] states that this precinct has been designated for the following purposes:

> *To provide for the establishment of liquefied natural gas (LNG) facilities for processing operations (including liquefaction and storage) of national, state or regional significance that require access to export wharf facilities.*
>
> *To provide for establishment of infrastructure associated with LNG facilities including transport linkages to wharf facilities.*
>
> *To have regard to the physical characteristics of the land when considering the location of the industrial development.*
>
> *To prevent the establishment of uses that may be incompatible with, adversely affect, or constrain existing or future LNG processing operations within the Curtis Island Industry Precinct.*
>
> *To provide for the physical separation of significant industrial and infrastructure activities within the Curtis Island Industry Precinct from the adjoining Environmental Management Precinct.*

This precinct was included within the GSDA as gazetted on 31 July 2008, and its pre-existing land use will change from rural to industrial and port-related activities.

1 Queensland Government: The Coordinator-General. July 2008. Development Scheme for the Gladstone State Development Area

Land to the immediate east of the Curtis Island Industry Precinct has been designated as the Environmental Management Precinct of the GSDA. This Environmental Management Precinct applies to the area east of the range on southern Curtis Island and has been designated:

> *To recognise, protect and maintain areas of high ecological significance.*
>
> *To provide areas for open space where remnant vegetation, wetlands, waterways and areas of ecological significance can remain and where revegetation can occur.*
>
> *To restrict incompatible land uses from establishing near the Industry Precinct.*

The bounds of the Curtis Island Industry Precinct and the Environmental Management Precinct are shown in *Figure 2.4.2.*

4.3.1.2 LNG Marine Facilities

Marine facilities associated with the LNG Facility (a jetty for loading LNG/unloading propane, a Materials Offloading Facility (MOF), Shipping Channel and Swing Basin) are located within the bounds of the Port of Gladstone as defined in Transport Infrastructure (Ports) Regulation 2005[2](Qld).

The Port of Gladstone and approved zones within the Great Barrier Reef Marine Park (GBRMP) will be utilised for Project shipping activities. The Gladstone Ports Corporation (GPC) is the proponent for dredging works required to construct the shipping channel(s) and swing basin associated with the Project.

4.3.2 Local Context

4.3.2.1 Onshore Facilities – Curtis Island

The proposed location of the LNG Facility and onshore facilities is 6 km north-east of Gladstone City. The site is located on the south-western side of Curtis Island immediately north of China Bay, and immediately south of Graham Creek. The site is currently described as:

- Part of Lots 10 and 27 on Crown Plan DS220
- Esplanade.

The LNG Facility site is approximately 268 ha above highest astronomical tide (HAT), with an additional proposed wet lease area (below HAT of approximately 71 ha subject to ongoing negotiation and definition of wet lease boundary). The Esplanade comprises approximately 9 ha of the wet lease area.

2 Queensland Government: Transport Infrastructure (Ports) Regulation 2005. Reprinted as in force on 14 March 2008 - Reprint No. 1C

Legend

- Proposed QCLNG Site Boundary
- Cadastral Boundary
- Esplanade
- QCLNG Footprint Plant Layout
- Possible Curtis Island Road/ Bridge Corridor
- Proposed Export Pipeline
- Indicative Wet Lease Area
- GBRCMP

Source Note:

Aerial Photo - Department of Infrastructure and Planning for QCLNG Project
Cadastral Currency: August 2008, Department of Natural Resource and Water
5m Contours Interval - Department of Natural Resource and Water
Curtis Island Road/Bridge Corridor - Connell Wagner

Projection: UTM MGA Zone 56 Datum: GDA 94

0 375 750 1,500 m

N

QUEENSLAND CURTIS LNG
A BG Group business

ERM
Environmental Resources Management Australia Pty Ltd

Project	Queensland Curtis LNG Project
Client	QGC - A BG Group business
Drawn	JB
Volume 2	Figure 2.4.7
Approved	FM
File No:	0086165b_EIS_PD_GIS004_F2.4.7
Date	30.04.09
Revision	2

Title **Cadastral boundaries on Curtis Island and the Mainland**

Disclaimer:
Maps and Figures contained in this Report may be based on Third Party Data, may not to be to scale and are intended as Guides only. ERM does not warrant the accuracy of any such Maps and Figures.

The location and boundary of the LNG Facility footprint on Curtis Island, in relation to the location and boundaries of land tenure, are shown in *Figure 2.4.7.*

4.3.2.2 Onshore Facilities – Gladstone Mainland

A mainland ferry terminal and laydown area is proposed for Auckland Point as a staging area for construction. This is an existing brownfield site owned by GPC. This is intended to include a car park and marshalling area for construction personnel, a temporary laydown and preassembly area for construction materials and equipment, and facilities to allow embarkation of personnel, plant, materials and equipment onto barges for transit to and from Curtis Island.

The proposed Auckland Point site includes four distinct areas within Auckland Point, being:

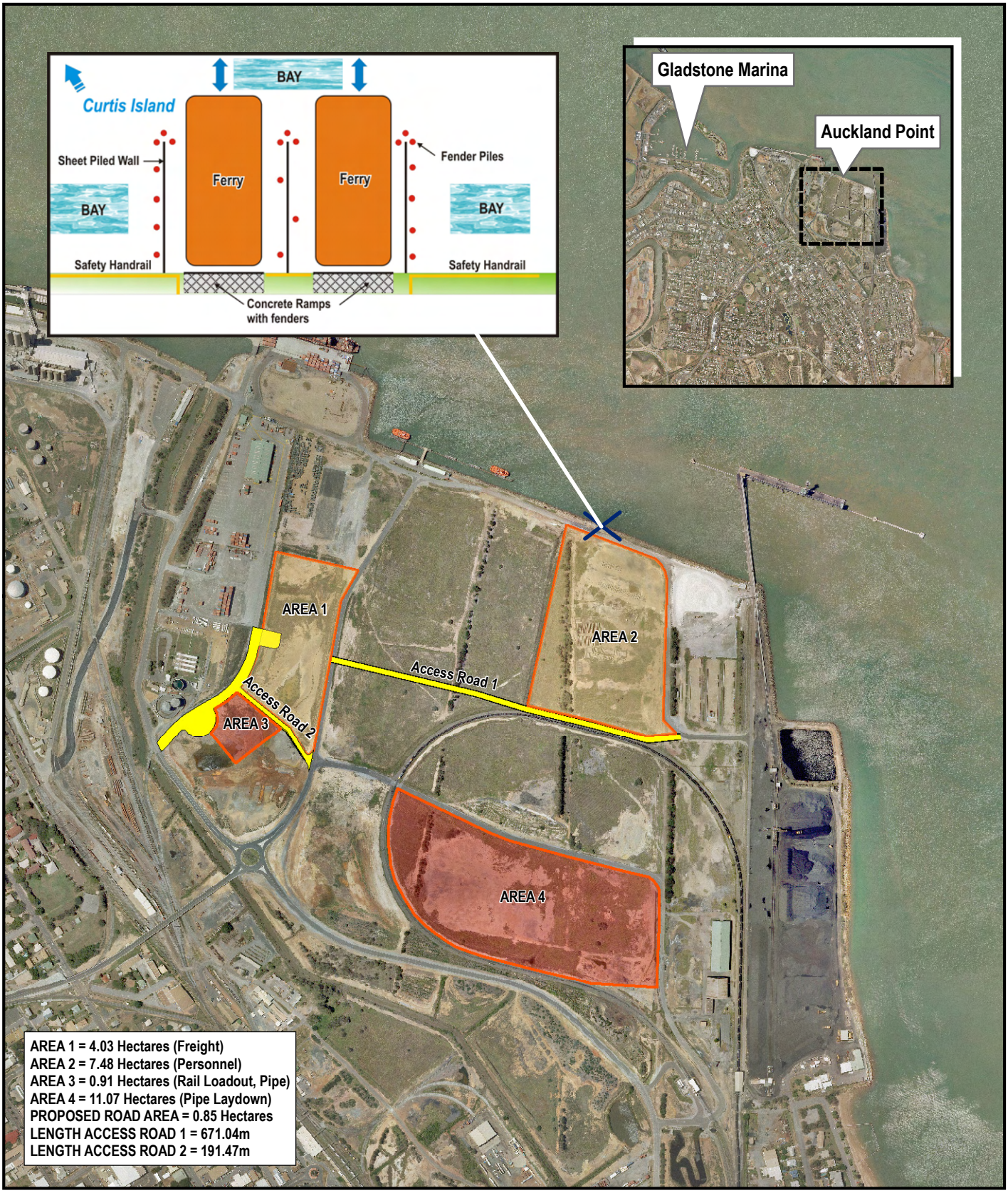
- a laydown and pre-assembly area of approximately 4.0 ha
- a car park and personnel assembly area of approximately 7.5 ha
- a rail loadout and pipe area of approximately 0.91 ha
- a pipe laydown area of approximately 11 ha.
- The location of these areas at Auckland Point is shown on *Figure 2.4.8.*

An additional smaller staging area for operational activities is proposed in the vicinity of the RG Tanna Coal Terminal. It will consist primarily of a car park and ferry terminal for operations activities. It will be located behind RG Tanna Coal Terminal with access from Alf O'Rourke Drive (refer to *Figure 2.4.2*).

Features of State and National Environmental Significance

Several features of state and national environmental significance are present in the Gladstone region in proximity to the LNG Component of the Project. These include:

- The **Great Barrier Reef World Heritage Area** (GBRWHA) (also included on the register of National Heritage Places) extends seaward from the low water mark on the Queensland coast, covering the waters and islands in the Port of Gladstone including Curtis Island.
- The southern boundary of the **Great Barrier Reef Coast Marine Park** (GBRCMP) crosses The Narrows between Friend Point on the mainland and Laird Point on Curtis Island, with the proposed Facility located approximately 2 km outside the boundary of this marine park.
- **Curtis Island National Park** extends northward on Curtis Island from Graham Creek. The proposed Facility is located approximately 2 km south of the southern boundary of this park.
- The Directory of Important Wetlands in Australia (DEWHA online 2008) lists Port Curtis, The Narrows, and north-east Curtis Island as Nationally Important Wetlands.



Legend

- Plant and Trans-shipment of Personnel Holding Area
- Pipe Laydown Area
- Proposed Road

Source Note:
Aerial Photo - Department of Infrastructure and Planning for QCLNG Project

Projection: UTM MGA Zone 56 Datum: GDA 94

0 75 150 300 m

N

QUEENSLAND CURTIS LNG A BG Group business	Project	Queensland Curtis LNG Project	Title Auckland Point Logistics Site Layout
	Client	QGC - A BG Group business	
ERM Environmental Resources Management Australia Pty Ltd	Drawn JB	Volume 2 Figure 2.4.8	Disclaimer: Maps and Figures contained in this Report may be based on Third Party Data, may not to be to scale and are intended as Guides only. ERM does not warrant the accuracy of any such Maps and Figures.
	Approved GB	File No: 0086165b_EIS_LFC_GIS004_F2.4.8	
	Date 21.05.09	Revision 5	

- Dugong Protection Areas (DPA) are an agreed Queensland and Australian Government initiative designated under the *Fisheries Act 1994* (Qld) and the *Nature Conservation Act 1992* (Qld). The Narrows, south of Graham Creek and east to Facing Island, encompassing the majority of Southern Curtis Island waters, comprise the Rodds Bay DPA.

Further description of these and other features of state and national environmental significance in the Gladstone region are provided in *Volume 5* of this EIS.

4.4 ANCILLARY INFRASTRUCTURE

This section describes the location of infrastructure associated with the LNG Component for which *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (*EPBC Act)* referrals were prepared and which were identified as controlled actions.

4.4.1 Regional Context

The Ancillary Infrastructure for the LNG Facility (i.e. Shipping Channel, Swing Basin, dredging for a MOF) are all in the Port of Gladstone limits and Gladstone Regional Council area.

The Shipping Channel, Swing Basin and Curtis Island Bridge are proposed within the existing boundaries of the Port of Gladstone. The GPC *50-Year Strategic Plan* anticipates expansion of the Port including construction of additional berths on southern Curtis Island and on the mainland along the south-western side of the Port. Dredging associated with construction of the shipping channel(s) and swing basin(s) for the Project will be undertaken with GPC as the proponent. The GPC will be responsible for undertaking detailed impact assessment and obtaining relevant approvals associated with these activities.

The Curtis Island Bridge and Mainland Road and Bridge Approach connect on Kangaroo Island at the northern end of the Port of Gladstone. As noted previously, the bridge and associated roads do not form part of the Project.

Under the former Calliope Shire Council planning scheme Kangaroo Island is zoned as Airport Facilities. Calliope Shire Council, Gladstone City Council, Miriam Vale Shire Council and the Gladstone Calliope Aerodrome Board amalgamated in March 2008 to form the Gladstone Regional Council.

As gazetted on 31 July 2008 the Queensland Government has subsequently included Kangaroo Island (area above high water mark) into the GSDA as a Restricted Development Precinct. This allows for Local Infrastructure, Materials Transport Infrastructure and Special Use, with the potential for development of an Infrastructure Facility instead of the development of an airport. Additionally, the existing Gladstone airport has currently implemented expansion plans in its current location but no relocation plans.

The Shipping Channel, Swing Basin and Curtis Island Bridge/Road will fall within the Rodds Bay Dugong Protected Area (DPA), which extends south from The Narrows (south of Graham Creek) and east to Facing Island.

The Shipping Channel and Swing Basin and Curtis Island Bridge/Road are not located within a declared Ramsar Wetlands of International Importance. However, The Narrows and Port Curtis Wetlands are listed in the Directory of Important Wetlands in Australia.

4.4.2 Local Context

4.4.2.1 Swing Basin and Shipping Channel

The new Shipping Channel will extend north-west from the Targinie Channel in the Port of Gladstone to the southern edge of the proposed swing basin. Dredging operations may also extend to existing channels within Port of Gladstone. The GPC's Western Basin Dredging Project proposes a dredge material placement site north of the existing Fisherman's Landing reclamation area south of Friend Point.

GPC will be the proponent for both dredging works and management of dredge material placement areas and is undertaking an EIS for the project which is due to be completed in late 2009.

The works will be undertaken in marine areas only and are not anticipated within Commonwealth lands.