18. Social impact assessment

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18.1 Introduction

18.1.1 Overview

This chapter provides an overview of the social values as identified in the Social Impact Assessment (SIA) (Appendix R) undertaken for the Lower Fitzroy River Infrastructure Project (Project). The potential social impacts arising from the Project are assessed and methods by which negative impacts can be mitigated and positive impacts enhanced are identified. The assessment addresses Part B, Section 6 of the terms of reference (ToR) for the environmental impact statement (EIS). A table cross-referencing the ToR requirements is provided in Appendix B.

18.1.2 Approach and methodology

The Project SIA was prepared in accordance with principles outlined by the International Association for Impact Assessment (IAIA) (IAIA 2003). The SIA identifies and analyses the potential social impacts of the Project and proposes mitigation, management and monitoring measures with the aim of increasing the social sustainability and equity of the Project.

The following activities were undertaken and sources were utilised to identify and assess potential social impacts:

- Technical studies undertaken to inform the EIS
- Consultation with key stakeholders, including:
  - Directly affected landholders (survey questionnaires and through discussion with Project appointed dedicated land liaison officers). All landholders were invited to participate in a survey questionnaire; 21 responses were obtained. In addition 14 landholders were interviewed in person or by telephone. Further, Project appointed land liaison officers met with 52 landholders
  - Interested community members and community groups (Chapter 1 Introduction; Appendix F)
  - State government departments (including the (then) SIA Unit in the former Department of Infrastructure and Planning) (Chapter 1 Introduction; Appendix F)
- Previous relevant studies undertaken in the area
- Literature reviews

The SIA methodology involves:

- Defining the stakeholders, study areas and preliminary impacts associated with the Project
- Developing a community profile and social baseline that describes the local area, its history, characteristics of the local people and their values and aspirations
- Identifying and assessing change processes and social impacts including the significance of each impact
- Developing a social impact management plan that recommends measures to mitigate negative impacts and enhance positive impacts as well as a framework for monitoring social impacts.

Further detail on each of the above steps is provided in Appendix R.

A key component of the SIA process was community and stakeholder consultation. The consultation process has been ongoing since 2008 and has included a number of targeted activities which provided all stakeholders (including landholders and the wider community) opportunity to participate and provide feedback on the Project (Chapter 1 Introduction; Appendix F).

The consultation activities undertaken for the EIS included meetings with affected landholders, meetings and briefings with key government agencies and industry groups, community information sessions, landholder surveys and meetings with the SIA Unit. The stakeholder feedback received from the consultation process helped identify potential environmental, social and economic impacts and/or benefits of the Project. Further detail regarding the consultation process and outcomes is provided in the Consultation Report (Appendix F).

It should be noted that any prediction of social impacts only identifies potential impacts. Whether the social impacts actually occur largely depends on how the affected stakeholder perceives or experiences social and biophysical change. By analysing a wide variety of sources, this uncertainty in terms of prediction of impact can be reduced.

A systematic process was followed when assessing the significance of potential impacts. This involved a social impact significance matrix as the main tool for identifying the significance of potential social impacts containing:

- Stakeholders impacted
- Potential for the impact to occur
- Consequence of the impact on the affected stakeholders
- Status of the impact, that is whether it is positive of negative
- Duration of the impact
- Spatial extent of the impact
- Importance of the impact to stakeholders.

An assessment was made of how each impact may affect relevant stakeholders. The categories follow the impact categories identified by van Schooten et al. (2003) and include:

- Health and social wellbeing
- Quality of the living environment
- Economic and material wellbeing
- Cultural impacts
- Family and community impacts
- Institutional, legal, political and equity impacts
- Gender relations impacts.

The analysis of potential social impacts informed the identification of mitigation and monitoring strategies and the need for a negotiated compensation process, appropriate for the nature and scale of the identified social impacts. Mitigation and monitoring measures aimed to:

- Maximise potential positive social impacts
- Avoid significant adverse impacts in the first instance
- Minimise and manage significant adverse impacts, where they cannot be avoided.

The impact significance is first assessed without any mitigation measures taken into account. The residual significance of each impact is predicted assuming that proposed mitigation and monitoring measures are implemented.

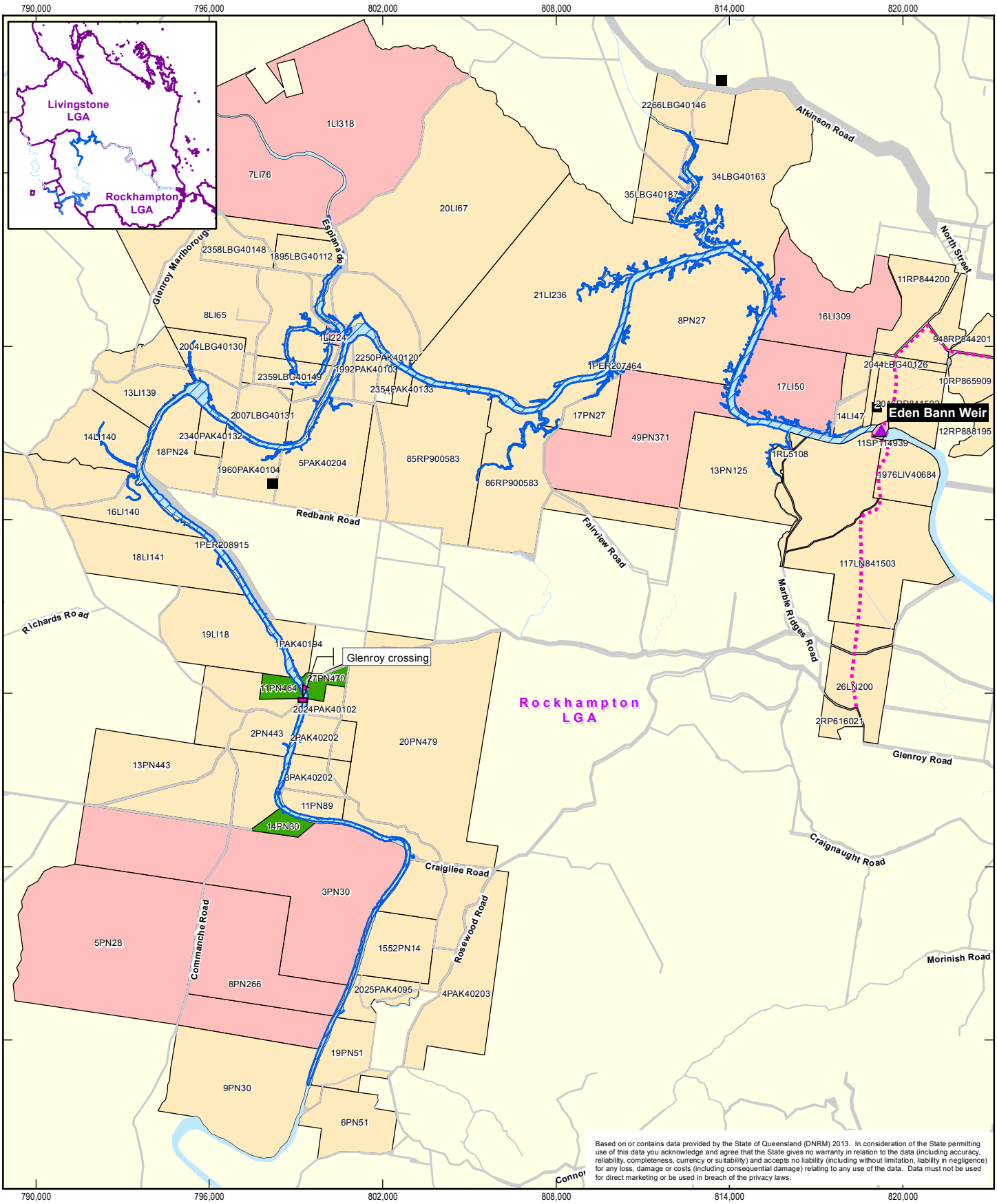
Cumulative social impacts are addressed in Chapter 21 Cumulative impacts.

18.1.3 Study area

The SIA study area is defined in three parts:

- Local study area – this includes the land (lots) affected by the Project footprint:
  - The local study area associated with the Eden Bann Weir (Figure 18-1) includes the weir site itself and properties upstream associated with the impoundment. Properties associated with augmentation of Glenroy Crossing are included. The existing Eden Bann Weir (Stage 1) impacts on 11 landholders. Raising the weir to Stage 2 will impact on a total of 20 landholders. An additional five landholders will be impacted by a raise to Stage 3. The proposed new access road will traverse three landholdings (Chapter 5 Land)
  - The local study area associated with the proposed Rookwood Weir (Figure 18-2) includes the weir site itself and properties upstream associated with the impoundment. Properties associated with construction and augmentation of river crossings upstream (namely Riverslea and Foleyvale crossings) and downstream (Hanrahan Crossing) are included. Rookwood Weir Stage 1 will impact 26 landholders. Raising the weir to Stage 2 will impact an additional seven landholders (Chapter 5 Land). During construction, indirect impacts (short-term, intermittent noise and dust generation and increased traffic) are predicted at Gogango and the town is included within the local study area
- Regional study area – this includes the communities in the immediate vicinity of the Project which would be affected by Project impacts and benefits and which would provide resources for the Project such as workforce and social infrastructure. The regional study area is shown in Figure 18-3 and consists of:
  - The Rockhampton Regional Council (RRC) (including Livingstone Shire Regional Council prior to de-amalgamation) local government area (LGA), Central Highlands Regional Council (CHRC) LGA and parts of Woorabinda Aboriginal Shire Council (WASC) LGAs (Chapter 5 Land)
  - Rockhampton City as the key regional centre.
- Wider area of influence – this includes communities more distant from the regional study area, but which may provide a broader context for the Project such as higher order social infrastructure services and source of labour and areas to which benefits would extend, including the Gladstone Regional Council LGA and the State of Queensland.

Information on the location of other projects within the local and regional study area are provided in Chapter 21 Cumulative impacts.



LEGEND

- Weir
- Location
- Homestead
- River Crossing
- Access Road
- Secondary Roads
- Minor Road/Road Easement
- Proposed Eden Bann Upper Impoundment Limit
- Local Government Area
- Tenure
- Freehold
- Lands Lease
- Reserve
- Road Easement
- Waterway

1:180,000 (at A4)

0 1.5 3 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

Gladstone Area Water Board, Sunwater
Lower Fitzroy River Infrastructure Project

Job Number 41-20736
Revision C
Date 13 Feb 2015

Eden Bann Weir local study area

Figure 18-1

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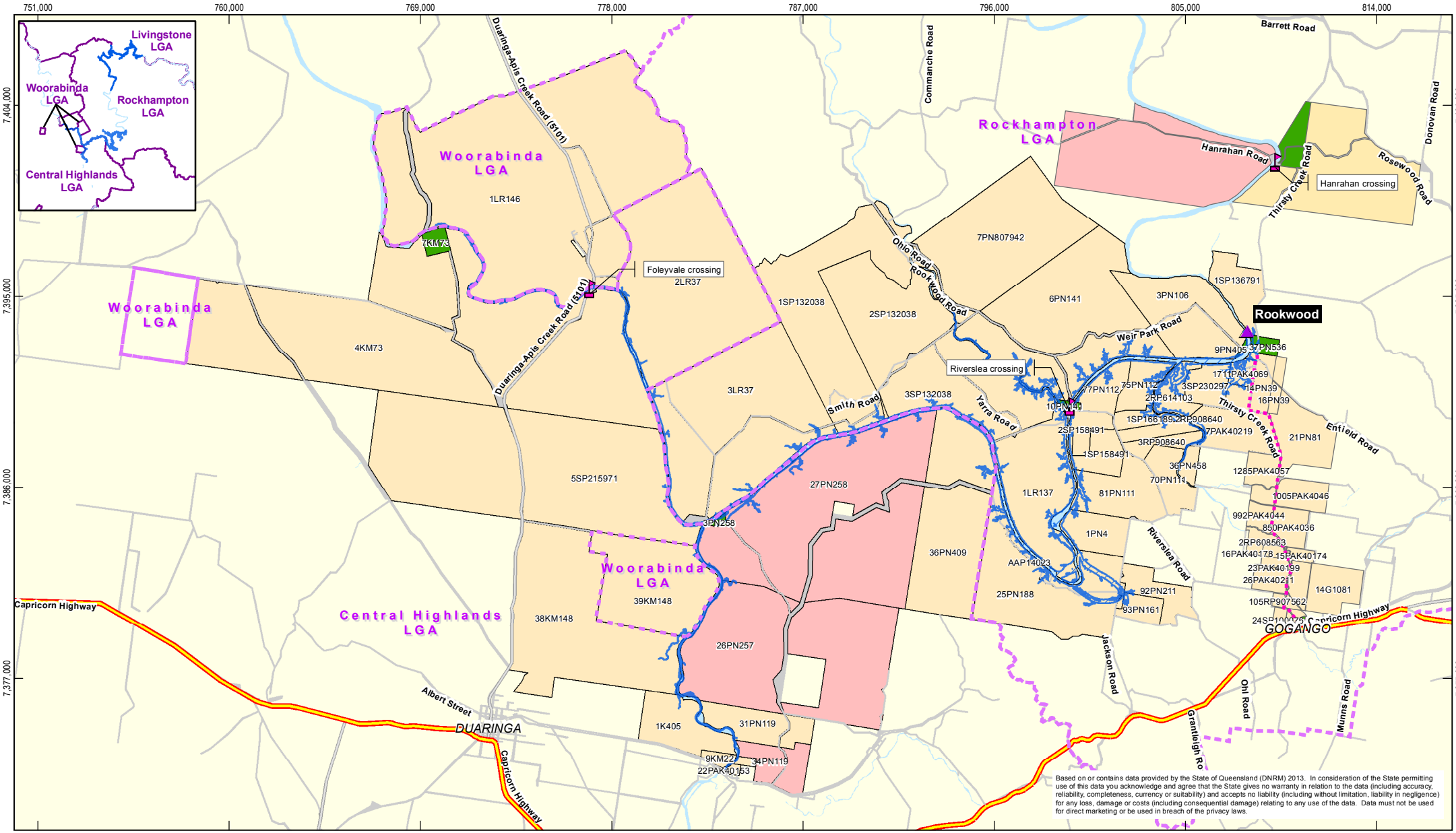
145 Ann Street Brisbane QLD 4000 Australia T 61 7 3316 3000 F 61 7 3316 3333 E bnemail@ghd.com W www.ghd.com

Data Source: © Copyright Commonwealth of Australia (Geoscience Australia): Homesteads(2007); Waterways (2007); Sunwater: Waterways, Weir Locations - 2008; DNRM: LGA (2014); Roads - 2010, DCDB - 2013/2014. GHD: Access Roads (2013). Created by: MS *See Appendix for disclaimers and copyrights.



1:240,000 (at A4)

0 3 6 9

Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA94)
Grid: Map Grid of Australia 1994, Zone 55

N

LEGEND

- Weir Location
- River Crossing
- Access Road
- Major Road
- Secondary Roads
- Minor Road/Road Easement
- Proposed Rookwood Upper Impoundment Limit
- Tenure
- Freehold
- Lands Lease
- Reserve
- Road Easement
- Waterway
- Local Government Area

GHD
CLIENTS | PEOPLE | PERFORMANCE

Gladstone Area Water Board

SunWater
Making Water Work

Gladstone Area Water Board, SunWater
Lower Fitzroy River Infrastructure Project

Job Number 41-20736
Revision D
Date 13 Feb 2015

Rookwood Weir local study area

Figure 18-2

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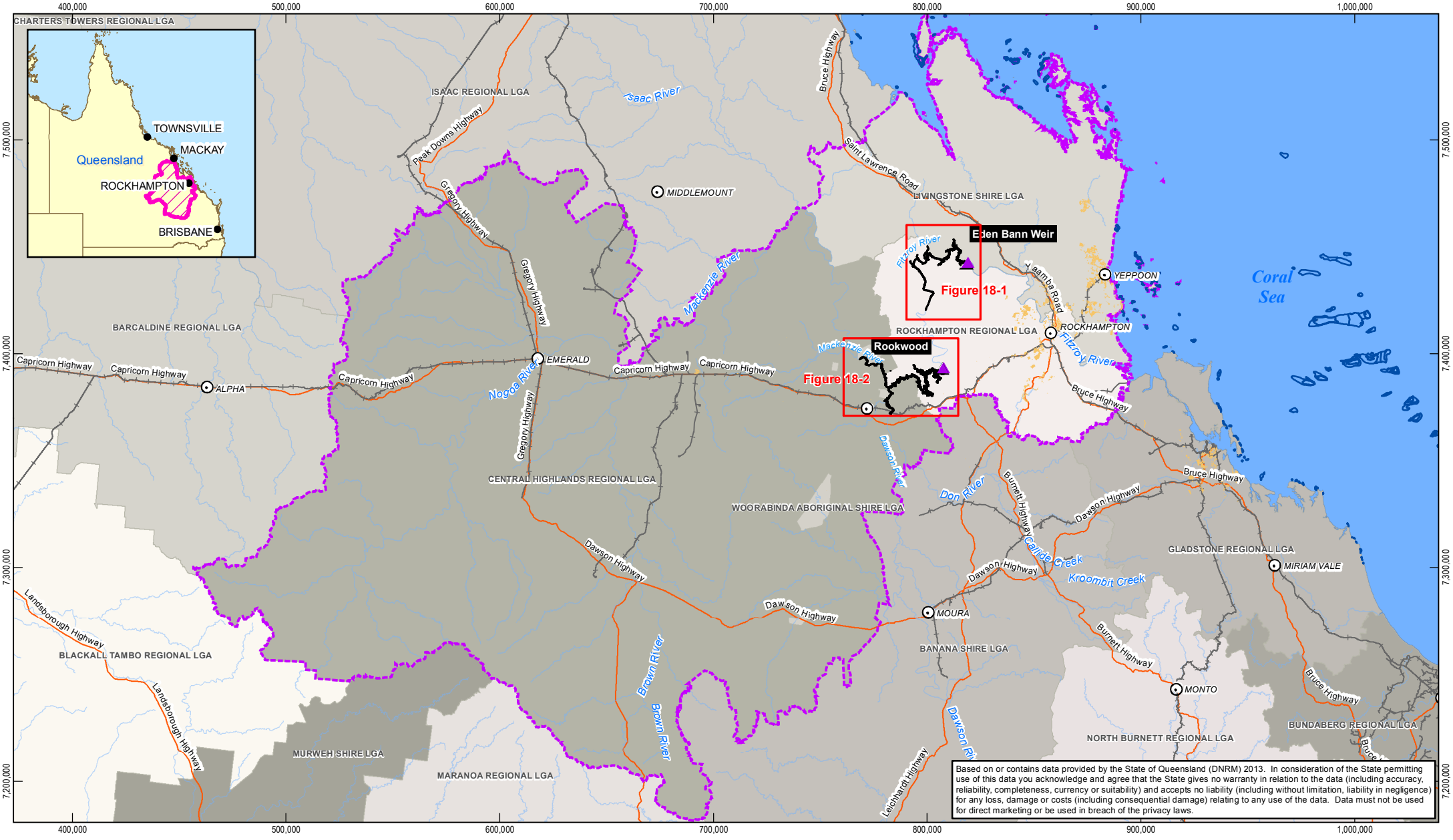
Level 9, 145 Ann St Brisbane QLD 4000 **T** 61 7 3316 3000 **F** 61 7 3316 3333 **E** bnemail@ghd.com.au **W** www.ghd.com.au

Data Source: © Copyright Commonwealth of Australia (Geoscience Australia): Waterways (2007); Sunwater: Waterways, Weir Locations (2008);DNRM: LGA (2014), Roads (2010), DCDB(2013); GHD: Access Roads (2013). Created by: MG *See Appendix for disclaimers and copyrights.



1:2,365,000 (at A4)

0 25 50 75 100

Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA94)
Grid: Map Grid of Australia 1994, Zone 55

N

LEGEND

- Weir
- Location
- Populated Places
- Railway
- Waterway (Major)
- Highways (National)
- Urbanised Area
- Impoundment Area
- Reef
- Fitzroy Basin
- Regional Study Area
- Local Study Area

Gladstone Area Water Board, SunWater
Lower Fitzroy River Infrastructure Project

Job Number 41-20736
Revision G
Date 13 Feb 2015

Regional study area

Figure 18-3

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Level 9, 145 Ann Street Brisbane QLD 4000 Australia T +61 7 3316 3000 F +61 7 3316 3333 E bnemail@ghd.com W www.ghd.com

18.2 Social baseline

18.2.1 Local study area demographics

18.2.1.1 Eden Bann Weir and Rookwood Weir Project footprints

In general, the local study area community includes the people owning or operating on land adjacent to the Fitzroy, Dawson and Mackenzie rivers and along private access routes within the local study areas (Figure 18-1 and Figure 18-2). The social baseline for Gogango is presented separately in Section 18.2.1.2.

The local study area consists predominantly of large, rural agricultural (cattle grazing) land holdings. Settlement in the area is sparse and scattered (Chapter 5 Land). Landholdings comprise a mix of owner-occupied homesteads and non-resident landholders residing elsewhere in the region (e.g. Rockhampton and Yeppoon) yet travel regularly to their properties.

The majority of landholdings within the local study area are owner-operated. Three properties have been identified as being owned by companies or individuals and managed by an employed property manager. In addition to themselves working the property, many of the landholders employ contractors occasionally, or on a seasonal basis.

All the respondents from the landholder surveys and the landholder interviews reported cattle breeding and/or fattening as the main activity taking place on their land. All of the respondents also stated they are 'working the property' or described themselves as farmers when asked about occupation. There is also some crop cultivation, and a small number have irrigation licences.

There is a mix of household types throughout the local study area. Five of the households were identified as family households with children and three were identified as family households with no children. There is also one single household in the area. As with the population of the regional study area, the landholders have a relatively high median age.

The landholders have generally owned and lived at their properties for 'a very long time'. When asked how long they have lived on their properties typical answer was 'decades', 'a long time', or even 'a lifetime'. In addition, some of these landholders belong to families with ties to the land dating back to the late 19th century. There are only a few landholders who have recently purchased their properties or moved to the property.

The population of the local study area has a slightly higher median age compared to the age profile of the regional study area and that of the State. The population in the local study area exhibits more traditional family patterns, with higher proportions of married people, compared to the regional study area and the remainder of the State. Income levels are relatively similar to the regional and State study areas.

Apart from basic infrastructure and services such as utilities, roads and crossings, and police services and primary schools further afield, there are no community services or facilities available in the local study area. The roads and crossings over the Fitzroy, Mackenzie and Dawson rivers are particularly important to the local community, as they provide the only direct access to Rockhampton for many residents. Residents in the local study area regularly travel to Rockhampton to access services.

Further detail on land use, affected properties and commercial and recreational values of the local study are is provided in Chapter 5 Land. Community history is detailed in Appendix R and local Indigenous cultural use of flora and fauna is described in Chapter 6 Flora.

18.2.1.2 Gogango

The township of Gogango has a population of 310 (as at Census 2011) comprising 57 per cent males and 43 per cent females. The median age is 47 years. At the time of the 2011 Census, 1.9 per cent of the suburb was identified as being of Aboriginal and/or Torres Strait Islander origin. Forty-one per cent of respondents indicated Australian ancestry followed by 26 per cent of English ancestry. Eighty-nine per cent of people in Gogango were born in Australia. Family households account for 78 per cent of the household composition. Families with children account for 45 per cent of the population and couple families without children 47 per cent. The balance (eight per cent) is made up of one parent and other family groups.

Seventy-six per cent of people (over the age of 15 years) reported working full-time. Unemployment is low at 1.7 per cent. Forty-nine per cent of employed people report being managers, followed by 15 per cent as labourers, 13 per cent clerical and administrative workers, six per cent technicians and trade workers. Fifty-one per cent are employed in the farming sector, six per cent in the coal mining industry and two per cent each for the electricity generation, wholesaling and accommodation sectors.

A coeducational state primary school offering prep to year seven supported by 1.4 full time equivalent teaching and 1.2 full time equivalents non-teaching staff is located at Gogango. As at 2012 the school reported 12 enrolments.

18.2.2 Regional study area demographics

18.2.2.1 Population

The regional study area and Rockhampton City has experienced gradual increases in residential population from 2006 to 2011 (Table 18-1). It is evident that growth is occurring inside Rockhampton City as well as outside the city in areas that still have a strong reliance on Rockhampton City for goods and services and as a base for the region (RRC 2012). Resident population data for each of the LGAs shows that all areas recorded higher numbers of natural increase than migration (OESR) 2013 a, b, c, d). The high number of births in both the RRC LGA and CHRC LGA in 2010 is reflected in the 2011 age distribution data of the LGAs which shows a high proportion of persons within the 0 - 4 age cohort (OESR 2013a).

Table 18-1 Estimated resident population in the regional study area (2006-2011)

Local government area	Estimated resident population as at 30 June			Average annual growth rate (%)	
	2006	2010	2011 pr	2006–2011 pr	2010–2011 pr
CHRC	28,256	29,296	29,533	0.9	0.8
RRC	107,517	111,939	112,383	0.9	0.4
WASC	918	959	982	1.4	2.4
Regional study area totals	136,691	142,194	142,898	0.9	0.5
Rockhampton City	60,597	61,977	63,237	0.9	2.1
Queensland	4,090,908	4,424,158	4,474,098	1.8	1.1
Regional study area as % of Queensland	3.3	3.2	3.2	N/A	N/A

pr= preliminary rebased; Source: Office of Economic and Statistical Research (OESR) (2013 a, b, c, d)

In addition to the resident population, the OESR has collated information on non-resident workers in specific LGAs and statistical local areas located within the geographical boundaries of the Bowen Basin. This includes the CHRC LGA which exhibited a full-time equivalent (FTE) residential population of 34,365 in 2011, 4,835 persons more than the estimated resident population of 29,530 persons. This increased to a FTE population of 35,710 in 2012, 5,585 persons more than the estimated resident population of 30,125 persons. This is a considerable difference and reinforces the importance of calculating the non-residential workers on-shift and the FTE population as infrastructure and development is often based on the residential population, without taking into consideration the non-resident worker population.

Population growth (Table 18-2) is expected to be driven predominately by mining and associated industry and development. The projected population for Rockhampton City is also expected to increase. As a base for the region, the increased population will generally be people residing in Rockhampton but working elsewhere in the region.

Table 18-2 Population projections for the regional study area (2011-2031)

Local government area	Estimated resident population as at 30 June					Average annual growth rate (%)
	2011	2016	2021	2026	2031	2011 - 2031
CHRC	31,861	36,256	40,880	45,685	50,742	2.4
RRC	117,612	127,915	138,933	150,450	162,873	1.6
WASC	976	1,065	1,152	1,246	1,357	1.7
Regional study area totals	**150,449**	**165,236**	**180,965**	**197,381**	**214,972**	**1.8**
Rockhampton City	63,237	68,366	71,511	74,688	78,113	0.9
Queensland	4,611,491	5,092,858	5,588,617	6,090,548	6,592,857	1.8
Regional study area as % of Queensland	3.3	3.2	3.2	3.2	3.3	NA

Source: OESR (2013 a, b, c, d)

18.2.2.2 Age, gender and family composition

As at 30 June 2011, the regional study area age profile was characterised by the following features:

- In the CHRC LGA, the majority of people were aged between 25 and 44 years (32.7 per cent), the ratio of males to females was 116.5 to 100 and the median age of males was 32.2 years while the median age of females was 31 years (OESR 2013 a, e)
- In the RRC LGA, the 25 to 44 and 45 to 64 year age cohorts constituted the majority of persons with 25.7 per cent and 25.6 per cent respectively. The ratio of males to females was 101.3 to 100 and the median age of males was 36 years while the median age of females was 37.9 years (OESR 2013 c, e)
- In WASC LGA, the majority of the population were aged between 0 and 14 years (34.5 per cent). There were no males in the 65 to 69, 70 to 74, or 85 and over categories and only 3.2 per cent of the population were aged over 65 years. The ratio of males to females was 91.4 to 100 and the median age of males was 21.5 years while the median age of females was 22.6 years (OESR 2013 d, e).

RRC LGA contained the largest number of families (28,537) followed by CHRC LGA (6,962) and WASC LGA (197). Both CHRC and RRC LGAs recorded a higher percentage of couple families with children (52.9 per cent and 41.5 per cent, respectively), while WASC LGA recorded the highest proportion of one-parent families (45.7 per cent).

18.2.2.3 Indigenous population

The cultural diversity in the community composition of the LGAs includes people of Aboriginal and Torres Strait Islanders descent. At the time of the 2011 Census, 3.6 per cent of the CHRC LGA was identified as being of Aboriginal and/or Torres Strait Islander origin. RRC LGA identified a 5.5 per cent Aboriginal and/or Torres Strait Islander population and WASC LGA 92.8 per cent. WASC is an Aboriginal community situated on the traditional lands of the Wadja Wadja / Yungulu Aboriginal people thus accounting for the large Indigenous population (WASC 2011).

18.2.2.4 Industry, occupation, labour force and unemployment

Unemployment data from the OESR shows a varied unemployment rate for the three LGAs (Table 18-3).

Table 18-3 Unemployment and labour force status in the regional study area

Local government area	Unemployed	Labour force	Unemployment rate (%)
CHRC	405	19,475	2.1
RRC	3,582	62,540	5.7
WASC	243	359	67.7
Regional study area totals	**4,230**	**82,374**	**5.1**
Rockhampton City	2,910	37,888	7.7
Queensland	139,800	2,480,000	5.6
Regional study area as % of Queensland	3.0	3.3	N/A

Source: OESR (2013 a, b, c, d)

The CHRC LGA recorded the lowest unemployment rate in Queensland at 2.1 per cent which is largely attributed to mining and associated industries. In 2011 the largest industry of employment for the CHRC LGA was mining, contributing a total of 3,974 persons or 26.0 per cent of the employed labour force. Other large industries included agriculture, forestry and fishing accounting for 11 per cent and construction accounting for 7.9 per cent of total employment

In RRC LGA, the main industries of employment were health care and social assistance which accounted for 12.8 per cent of the total employment, followed by retail trade providing 10.9 per cent and education and training providing 9.0 per cent of total employment. In the September quarter of 2012, RRC LGA had an unemployment rate of 5.7 per cent, which is fairly consistent with the Queensland rate of 5.6 per cent.

The main industries of employment for Rockhampton City were health care and social assistance (14.3 per cent), retail trade (11.3 per cent), education and training (9.2 per cent) and manufacturing (8.6 per cent) (OESR 2013b). This presents some similarities to the employment trends of the RRC LGA. While the RRC LGA reflected the Queensland unemployment rate, Rockhampton City was higher with 7.7 per cent unemployment.

The largest industry of employment within the WASC LGA was health care and social assistance contributing 31.9 per cent of the employed labour force. Public administration and safety (20.3 per cent) and education and training (15.5 per cent) were other industries with relatively large numbers of employed persons in the region. Nine industries that occur in the other LGAs including retail, manufacturing, and accommodation and food services were absent in the WASC LGA. At 67.6 per cent, the rate of unemployment within the WASC LGA is significantly higher than that in the RRC and CHRC LGAs and the Queensland rate.

18.2.2.5 Temporary accommodation

The OESR has collated information on worker accommodation villages (WAVs) in specific LGAs and statistical local areas located within the geographical boundaries of the Bowen Basin, which includes the CHRC LGA. WAVs provided around 88 per cent of accommodation for non-resident workers in June 2012, with 22,150 non-resident workers counted in 69 WAVs across the Bowen Basin. Two new WAVs opened in the CHRC LGA in 2011-12, increasing capacity in the region. For non-resident workers on-shift, WAVs were the primary accommodation type in the CHRC LGA (4,450 persons), followed by hotels/motels (1,020 persons), and caravan parks/other (115 persons). As at June 2012, not all WAV beds were occupied at any given point in time, due to shift patterns and tenancy arrangements. Nine per cent of the WAV beds within the CHRC LGA are vacant and available (OESR 2013b).

The estimated vacancy rate for all types of residential rental accommodation in RRC LGA has increased from 3.2 per cent in the 2008 to 2009 period to 4.6 per cent in the 2009 to 2010 period (OESR 2013f). There are also a reasonable number of tourist accommodation facilities, such as hotels, motels, caravan parks, holiday flats and units in Rockhampton. Australian Bureau of Statistics data suggests that Rockhampton and the wider Central Queensland region has experienced occupancy rates of around 75 per cent in hotels, motels and serviced apartments in the September quarter of 2012.

It is expected that vacancy rates and availability of temporary accommodation facilities in the regional study area will be influenced primarily by development within the resources (coal and gas) sector. Historically Rockhampton City has been less directly influenced in this regard compared to towns like Emerald and Blackwater. Given the size of the Project's construction workforce (Section 18.3.3.1), the data indicates that sufficient accommodation is likely to be available for construction personnel now and into the future.

18.2.3 Social infrastructure, services and facilities

18.2.3.1 Utilities

Some of Queensland's largest power stations are located in and around the regional study area. These include the Stanwell, NRG Gladstone and Callide power stations, which produce the majority of the State's power. Stanwell currently has a water allocation from the Fitzroy River (supplied through releases from the existing Eden Bann Weir owned and operated by SunWater Limited). The Gladstone Area Water Board supply bulk water to the NRG Gladstone and Callide power stations from Awoonga Dam. Ergon Energy is the major distributor of energy in the region.

Fitzroy River Water (a business unit of RRC) supplies water and sewerage services in the Rockhampton area and bulk water to the former Fitzroy Shire and de-amalgamated Livingstone Shire. Raw water from the Fitzroy River (via the Fitzroy Barrage) is treated at Rockhampton's Glenmore Water Treatment Plant and pumped to the various reservoirs located around the City and Gracemere. Bulk water is supplied to the Capricorn Coast (Livingstone Shire) via the

Rockhampton to Yeppoon pipeline supplementing supplies from Water Park Creek. The plant has the capacity to treat 120 ML of water per day (with maximum demand recorded in 2002/2003 of 114 ML per day).

The Commercial Services Department of the CHRC is responsible for the management and maintenance of water and sewerage infrastructure in the region. WASC staff manage and maintain the water treatment plant and reservoirs that supply the town.

18.2.3.2 Communications

There are various forms of mass media and communications services available throughout the regional study area. These include:

- Five free to air television networks
- Numerous AM and FM radio stations
- Newspapers including The Rockhampton Morning Bulletin and Rockhampton Fitzroy News and Queensland Country Life
- Post offices, including several post offices in the city of Rockhampton, a post office in Marlborough, Duaringa and a community postal agency in Westwood
- Telecommunications such as internet connection, telephone and mobile phone connections. The local study area is however not covered in full by mobile phone and internet services.

18.2.3.3 Transport infrastructure

Rail network

Aurizon Network Pty Ltd operates the rail network in the regional study area, specifically the Blackwater system which is a coal rail network (Chapter 16 Transport) passing through Gogango (Chapter 16 Transport). The Blackwater system also services a number of domestic users including Stanwell and Gladstone Power Stations, Cement Australia and the Comalco Refinery. Rockhampton is a major node in Queensland's railway system and plays a key role as a railways repair and service centre as well as a key despatch and control centre. Rockhampton is serviced by the Brisbane to Cairns Tilt passenger train and the Brisbane to Cairns Sunlander. The tourist train to Longreach, 'The Spirit of the Outback', also stops over in Rockhampton and traverses part of the Blackwater system through Gogango. There are no passenger services at Gogango Station.

Airport facilities

The closest airport to the Project site is the Rockhampton Airport which is a commercial business unit of the RRC. The airport accommodates B747, B777 and A340 aircrafts and approximately 750,000 domestic passengers pass through the terminal annually. Rockhampton Airport offers flights to Sydney, Brisbane, Gladstone, Mackay, Townsville and Cairns through QantasLink and Virgin Australia. Approximately 20 passenger flights arrive and leave Rockhampton Airport per day. Future plans for the airport include expansion to accommodate a new customs quarantine section to facilitate future international flights. Three emergency service providers are based at and use the facilities of the Rockhampton Airport. These include the Royal Flying Doctor Service, RACQ Capricorn Helicopter Rescue Service and Airservices Australia.

Port facilities

Two commercial ports service the region, namely Port Alma and the Port of Gladstone (Chapter 16 Transport). Keppel Bay Marina (50 km north-east of Rockhampton) provides recreational port facilities.

Road networks and river crossings

The Capricorn Highway passes through the local study area and intersects with the Bruce Highway in Rockhampton. There are also several secondary roads and smaller tracks passing through the local study area, many of which are unsealed (Chapter 16 Transport). The Fitzroy River upstream from Rockhampton forms a natural barrier for movement of people with mainly low lying crossings available. There are three major crossings in the local study area, namely:

- Glenroy Crossing is the primary crossing used by people living west of the Fitzroy River in the Morenish area to travel to and from Rockhampton
- Riverslea Crossing is the primary crossing in the Gogango area, providing the only public road access to several properties. Approximately 30 to 35 people depend on access across Riverslea Crossing
- Foleyvale Crossing is the only access to Duaringa for properties located north of the Mackenzie River. At least five properties with several families use the crossing. The only viable alternative is to cross the river by boat.

In addition, several private crossings and internal property crossings have been identified. Some of these are rarely used and function mostly as 'opportunistic' crossings. There is limited available information on the current function of some of these crossings.

18.2.3.4 Health and emergency services

Rockhampton City is the closet regional centre to the Project. To access most types of services, residents in the local and regional study area travel to Rockhampton. There are several health facilities located in the regional study area, primarily in Rockhampton. The Rockhampton Base Hospital is the largest hospital in the region, with more than 200 beds and provides speciality and allied health services. The Rockhampton Community and Public Health Service provide aged care services, child and family health services, amongst others. Smaller State health facilities are available in Woorabinda and Blackwater and comprise the Woorabinda Multipurpose Health Service and the Blackwater Multipurpose Health Service, respectively. Medical services in Duaringa comprise the Duaringa Outpatients Clinic.

Emergency Management Queensland (EMQ) for the Central Region covers approximately 419,510 km^2 and includes the CHRC, RRC (including LSC) and WASC LGAs. EMQ coordinates Queensland's emergency and disaster management arrangements and disaster mitigation programs and provides the core staffing for the Queensland Disaster Management System. EMQ also manages the State Emergency Service (SES), Emergency Service Unit volunteers, EMQ Helicopter Rescue and Emergency Services Cadets, amongst others. Regional operations are delivered through the Regional Operations Branch.

The Queensland Fire and Emergency Service operates its Central Region from Rockhampton and incorporates the Queensland Rural Fire Service. Similarly, the Central Region of the Queensland Ambulance Service operates from Rockhampton and the Queensland Police Service (QPS) Police Complex is located in Rockhampton.

Few emergency services stations are located in close proximity to the Project sites (Table 18-4). There are two police stations and one ambulance station available and a Rural Fire Brigade run by volunteers. Other higher order emergency services such as helicopter rescue are available and could be accessed from Rockhampton.

Table 18-4 Emergency services in proximity to the Project

Service	Location
Police	Westwood Police Station and Duaringa Police Station
Fire Brigade	The closest fire stations are located in Mount Morgan and Gracemere
Ambulance	One ambulance station in Duaringa
State Emergency Service	There is a volunteer SES unit operating in Duaringa
Rural Fire Brigade	There is a rural fire brigade unit located in Gogango

18.3 Potential impacts and mitigation measures

18.3.1 Overview

This section identifies and discusses the potential social impacts associated with the Project firstly in the absence of mitigation and management (Sections 18.3.2, 18.3.3 and 18.3.4) and secondly as residual impacts following the implementation of mitigation and management measures (Section 18.3.6). As social impacts largely result from people's responses to changing social and biophysical change processes, it is not possible to predict them with a high degree of certainty. Social impacts of the Project are categorised and presented based on whether they occur at the planning, construction or operational stage of the Project. An assessment has been made (and a significance rating assigned) of how each potential impact may affect relevant stakeholders based on landholder surveys and discussions, information gathered during community information sessions, liaison with State and Commonwealth government agencies and literature reviews as described in Appendix R. The assessment of social impacts in this section has been made assuming a raise of Eden Bann Weir and construction of Rookwood Weir, both to full development levels, including construction of new river crossings and accesses.

18.3.2 Planning phase

18.3.2.1 Potential impacts

Landholder uncertainty regarding the Project

The local community has been aware of strategies (in concept and with some feasibility investigations) for additional weirs (and/or water infrastructure) on the Fitzroy River for a long time, at least 20 to 30 years. The community has not however been able to access specific and certain information because, to date, plans have only been conceptual and generally have not been published. This has caused feelings of uncertainty among potentially affected stakeholders. The nature of developments like the Project, with long planning times, several development options, and ongoing environmental, technical and social investigations and approvals processes involved will facilitate the provision of that information as it gradually becomes available.

The uncertainty around whether the Project will proceed (and, if so, when) may affect people's ability to plan for their future. Residents may also believe that the value of their property has been negatively affected by these uncertainties. This uncertainty may therefore potentially result in

adverse impacts to the social wellbeing of local landholders as well as a belief that adverse, economic effects may arise. Landholders associated with Eden Bann Weir have experienced development of this nature previously when Eden Bann Weir was constructed in 1994. The significance of this uncertainty without mitigation is predicted to be medium for Eden Bann Weir and the proposed Rookwood Weir.

Raised expectations of potential benefits

Consultation with landholders and local community members has revealed widespread aspirations for benefits from the proposed construction of Rookwood Weir to flow to the local community. These include aspirations for additional water entitlements (Chapter 9 Surface water resources) and expectations that river crossings (Chapter 2 Project description) will be improved. While these aspirations in themselves do not constitute an impact, the way in which they are addressed by the Project will potentially affect the local community's perception about the Project and its proponents, either negative or positively depending on whether the Project meets their expectations. Receptor sensitivity in this regard is high and the potential impact if expectations are not met is considered to be of high significance.

Disruption impacts on lifestyle and productivity

During the planning stage, riparian landholders may have and may continue to experience disruptions to their daily life and business activities as a result of Project planning activities. These include on-site environmental or engineering investigations, visits from land liaison officers, or investigations related to the SIA. Related to this is the requirement for landholder consent for land access, which include requirements for the proponent to give landholders notice before the Project team enters private land.

Whilst the planning of the Project has been ongoing for some time, the frequency of the site visits has been relatively low. However it can be expected that investigations may ramp up closer to a Project trigger, particularly during any early or preparatory works phases leading to the construction phase. The duration and physical impact of such disturbances are however likely to be minimal. Following the existing land access protocols agreed with landholders prior to initial site visits (including adequate notice periods and consideration of landholder activities, such as mustering) and respecting landholders wishes will also contribute to minimising this impact. Receptor sensitivity in this regard is low, and the consequences for the affected landholders are expected to be insignificant and as such the impact significance is low.

Increased risk of weeds spreading

The increasing numbers of visits can potentially contribute to the spread of noxious weeds. Landholders in the local study area spend considerable amounts of time and money on managing noxious weeds. Increasing the spread of weeds can potentially have economic consequences for the affected landholder. Following the existing land access protocols agreed with landholders prior to site visits (including vehicle wash-downs prior to entry and brush downs when moving between areas on the same property) will contribute to minimising this impact such that the likelihood of occurrence is considered unlikely with minor consequences. Impact significance is considered to be low.

18.3.2.2 Mitigation and management measures

During the planning and early works phases, the following mitigation and management measures have been implemented and/or are proposed:

- A Stakeholder Engagement Plan/Strategy has been prepared for the Project (Chapter 1 Introduction). The strategy is ongoing and includes a range of communication techniques such as a Project website, a 1800 number, dedicated email address, and Project updates and information sessions at key milestones.
- A Project Land Acquisition Strategy has been facilitated through the appointment of dedicated land liaison officers for key periods during Project planning. Landholders potentially directly impacted by the Project, have had the opportunity to discuss how their properties and businesses operate (inclusive of existing and future water entitlements) for consideration within the EIS.
- A Land Access Protocol has been developed and implemented. This included:
  - Seven days advance notice of access requirements
  - Liaison with landholders regarding their land activities at the time of the access (for example mustering, sensitive stock, pig shooting)
  - All Project personnel to be identifiable through letters of introduction and clear explanation to landholders of activities proposed.
- A Weed Management Plan has been developed and implemented
- Development of, and consultation on, the Project EIS including commitments with regard to Project benefits and opportunities.

By providing consistent, concise and regular Project communication in an easy to understand language, adhering to land access protocols and weed management plans and respecting any individual requests from the landholders about timing and the likelihood of access to their properties the impacts of disruption to lifestyle and risks associated with Project development uncertainty and expectations can be minimised.

18.3.3 Construction phase

18.3.3.1 Potential impacts

Workforce profile, local employment and business opportunities

It is expected that development of the Project will be staged in response to demand triggers (Chapter 2 Project description). In total, a workforce of approximately 150 persons is anticipated across the approximate two year construction period at each weir. Raising Eden Bann Weir may require a workforce of approximately 40 people, while construction of Rookwood Weir may require approximately 60 people on site at the busiest stage (that is during the dry seasons, noting construction will occur over at least two consecutive dry seasons). It is expected that 50 – 60 per cent of the workforce would be unskilled construction labourers and 40 – 50 per cent would be skilled. Augmentation and construction of river crossings will each require a total workforce in the order of 40 people over a period of 12 consecutive months. The majority of the employees are likely to be sourced from within the regional study area. A small proportion of highly specialised workers may be sourced from outside the regional study area, but from within Queensland. Prior to construction a workforce participation strategy will be developed which provide details of opportunities and programs for participation by Indigenous and minority groups. It is anticipated that locally sourced workforce will already be residing in the region. Workforce sourced from other parts of the state are expected to be mainly housed in short term temporary commercial accommodation in Rockhampton and surrounding areas. All construction workers will be transported daily by bus to the construction site and back to their accommodation or to a meeting

point close to their accommodation. It is not expected that the small number of specialised workers that would be sourced from outside the regional study area would impact on housing availability given the vacancy rates of residences and occupancy rates of other accommodation types available in Rockhampton.

In the context of the size of the regional economy, labour force and unemployment rates in the regional study area, it is anticipated that the Project will impact positively on regional employment and will provide employment opportunities to local communities. The skills required for employment in the on-site work will include:

- Plant and equipment operation
- Form work construction and reinforcement setting
- Concrete batching, pouring and finishing
- Welding, electrical, plumbing, dogmen, riggers, drillers and other specialist trades
- Trenching, pipe laying and joining
- Explosives (only if required during excavation)
- Surveying
- Clerical and record keeping
- Construction engineering supervision (range of skills, including foremen)
- Environmental supervision
- Laboratory technicians.

A full workforce composition will be developed during detailed design following a Project trigger (Chapter 2 Project description).

It is also likely there will be a demand for local businesses to service some requirements of the construction and operations activities as well as the needs of the temporary workforce (such as local cafes, food/catering suppliers, petrol stations and hardware stores). Through community consultation, it was identified that staff attraction and retention has been a challenge for local small business, particularly landholders in the vicinity of the proposed weirs, as they have already been losing personnel to more lucrative industries, such as mining and gas. Hence it is anticipated that there may be some competing demands from the Project on the unskilled labour force. This is addressed below with regard to productivity.

The impact of increased employment and business opportunities in the regional study area is positive and of high significance.

Post construction, the Project is expected to employ between one and five full time equivalent persons in operations and maintenance capacities.

Loss of land and access to land

Landholders either side of the weirs, at river crossings and along new accesses would experience temporary or permanent loss of parts of their land or loss of access to parts of their land due to construction activities (Chapter 5 Land). While the loss of land is certain, consequences are considered minor and as such the significance of the loss of land (or access to land) as a result of construction activities is considered to be medium.

The establishment of quarry and borrow areas in close proximity to the weir site will be addressed separately and will be subject to further environmental assessment and approvals. As presented

in Chapter 2 Project description, resources extraction areas have been identified on a single property associated with Eden Bann Weir and three properties associated with the proposed Rookwood Weir.

Productivity impacts

Landholders indicated that they had previously experienced difficulties in attracting farm labourers. The additional demand for unskilled labour through the Project construction phase has the potential to compete with landholders employing farm labourers, which may in turn increase costs.

Given the relatively small additional demand for unskilled labour (in the order of 30 people at peak) and the temporarily and intermittent nature of the demand for labour over the construction period, these impacts would be minor when compared to the demands of other, much larger projects (for example mining, Chapter 21 Cumulative impacts) in the region.

Increased traffic volumes may increase the risk of accidents involving stock. Further increased traffic movements and construction activities have the potential to disturb (noise and dust) cattle and access to and use of areas for grazing may be restricted at periods during the construction phase. There are consequently both health and safety impacts as well as economic impacts related to the loss of, and disturbance to, cattle.

During construction, the landholders may also need to spend additional time in dealing with Project staff and inspecting their property or access roads for any damage caused by the Project, which will take away their time from other business. It is acknowledged however that based on construction scheduling all of these activities' impacts will be sporadic (largely over two dry seasons) and temporary (limited to two and a half years of construction).

Similar to the planning phase described above (Section 18.3.2), mobilisation and demobilisation of construction vehicles, equipment and machinery has the potential to increase the risk of the spread of noxious weeds. Following established land access protocols agreed with landholders (including wash-downs prior to entry and brush downs when moving between areas on the same property) will contribute to minimising this impact such that the impact is unlikely to occur and will not contribute to a reduction in productivity.

The significance of impacts on productivity is predicted to be medium.

Lifestyle impacts

The resident near the Eden Bann Weir site and residents along the construction access roads may experience nuisances and disruptions as a result of increased noise, dust and access constraints (Chapter 14 Noise and vibration, Chapter 12 Air quality and Chapter 16 Transport, respectively). Construction is planned to be intermittent, occurring primarily during the dry season and over a relatively short term. The number of additional heavy vehicles using access roads would be approximately 32 heavy vehicles per day. This is a relatively large increase compared to the existing low levels of vehicles using these roads. However, the number of residences in close proximity to these roads is low and therefore while it is likely that the impact will occur, the consequence is considered minor resulting in an overall low significance.

While assessment of impacts associated with resource extraction areas will be undertaken separately, it is noted here that resource materials are likely to be sourced from sites in close proximity (less than 1 km) to the construction areas and will not impact further on road traffic or increase further noise and dust levels along access roads.

Impacts on social infrastructure

Given the temporary and seasonal construction periods when labour will be required, and the availability of health related services in the region, the impacts on demand for community services and facilities from the workforce is expected to be low. However, with the construction activities underway and increased traffic generated in relation to the Project, there may be temporary and intermittent increases in demand on emergency services such as fire and rescue, ambulance and police to service the Project area, particularly in relation to transport of wide loads. The overall significance of this impact is low.

Traffic safety and transport impacts

During construction there will be some increases to traffic volumes near the weir sites, at river crossings and along construction access roads, particularly during mobilisation and demobilisation (Chapter 16 Transport). At this stage, it is expected that around 32 heavy vehicles and between 20 and 30 light vehicles will travel to each site on an average day. During construction, traffic will mainly be related to transporting the workforce to and from the site, and supplying cement and fly ash and other construction material. As discussed above, resource materials are likely to be sourced within 1 km of the weir sites and will not increase traffic on roads in the regional study area.

Increased traffic volumes may increase the risk of accidents involving single vehicles, other road users or livestock. This impact is considered possible with the consequence of a traffic accident considered to be major resulting in an impact of high significance.

Increased traffic volumes and loads (Chapter 16 Transport) may also damage local roads with moderate consequences. The significance of the impact is expected to be medium in the absence of mitigation and management.

18.3.3.2 Mitigation and management measures

An environmental management plan (EMP) has been developed for the Project (Chapter 23) and includes:

- Develop and implement a recruitment plan including the provision of appropriate contractual arrangements with construction contractors and the use of local recruiters, that will facilitate opportunities for local employment
- Develop a Project procurement plan that considers the engagement of local businesses to provide services to the Project. In line with the Australian Industry Participation Policy, the Project procurement plan will consider advertising work packages on the Industry Capability Network (ICN) Gateway. Services, equipment and material required for the Project are considered typical for construction projects in the region and therefore are likely to be locally available.
- Issues relating to the loss of land and/or loss of access to land along with impacts on productivity will be negotiated and agreed on a one-on-one basis with directly impacted landholders. Consideration will be given to the use of the land, relocation of temporary infrastructure as far as is practicable and reinstatement and rehabilitation. Further advance and ongoing communication with regard to the Project will facilitate that individuals are able to plan for their own operational needs
- Pavement impact assessments will be undertaken as applicable (for example Third Street and Atkinson Road, amongst others) along with road traffic safety audits and dilapidation surveys to inform discussion and negotiation with the Department of Transport and Main

Roads and RRC with regard to upgrades and maintenance of state controlled and local roads in the local and regional Project areas. As a minimum, road condition and access will be maintained at pre-construction conditions

- A Traffic Management Plan will be used. This will include, amongst others, the following:
  - Reduced and enforced speed limits and improved signage
  - Increased signage and the use of traffic controllers (as appropriate)
  - Augmentation of the Capricorn Highway/Third Street intersection at Gogango
  - Time restrictions for traffic operations, with limited night time activities (as far as is practicable)
  - Road maintenance, reinstatement and rehabilitation
  - Notification and updates to stakeholders in the local study area regarding traffic movements, particularly during commissioning and decommissioning.
- Management of nuisance-type impacts will include:
  - Time restrictions on activities
  - Maintaining and operating construction equipment, plant and machinery in accordance with manufacturer's guidelines
  - Dust suppression through water application
  - Notification to residents and stakeholders (as applicable) of noise generating activities.
- The land access protocol will continue.
- The weed and pest management plan will continue.
- The Project Stakeholder Engagement Strategy will continue. Development and implementation of Near Neighbour Policy and a Grievance Management Process (or similar) will be used to monitor and record complaints to ensure any stakeholder or community concerns are addressed appropriately and in a timely manner.
- Consult with emergency services in the development of the site emergency management plan (Chapter 20 Hazard and risk).

18.3.4 Operational phase

18.3.4.1 Potential impacts

Water security

The most significant benefit of the Project will be the increase in availability and reliability of water (Chapter 9 Surface water resources). The Project will facilitate and enable development, thus benefiting the regional, state and national economies. The significance of this positive impact is considered to be very high.

The Central Queensland Regional Plan (2013) identified that the central Queensland region (including the RRC (including LSC), CHRC, WASC and Gladstone LGAs) is one of the most prosperous regions in the state. The regional economy is reported to have expanded by an average of 10.3 per cent per annum over the past 10 years to 2010–2011 (compared with 8.8 per cent growth for the state). This strong growth is driving demand for water as well as other services and utilities such as education, health care and electricity together with housing and construction and retail trade.

Planning for future water security through the Project supports the State's interests in achieving regional outcomes through public and private sector investment to improve water access by addressing increasing demands mainly from industry and population growth to achieve appropriate security and reliability of supply.

Productivity impacts

Potential negative impacts within the local study area may include loss of land currently used for grazing (Chapter 5 Land), agricultural infrastructure (such as pumps and fencing), severance of and/or loss of access to land, cattle bogging and changes to water allocations (Chapter 9 Surface water resources).

Project benefits include the improved flood immunity of several river crossings (Chapter 2 Project description, Chapter 16 Transport) which will facilitate the movement of people, machinery and equipment and stock in periods of flooding and maintain access to services and facilities such as schools and health facilities, social and recreational clubs and networks. Further impoundment of water will benefit the taking of water for stock and domestic use by riparian landholders in the local study area (in accordance with the *Water Act 2000* (Qld)), through provision of a more constant and reliable supply.

Despite land subject to inundation being contained within the river (and creek) bed and banks, fifty-eight landholders will lose some land (Freehold and Lands Lease tenures) (inclusive of creek areas that are not Unallocated State Land) due to impoundments (Chapter 5 Land).

Using cadastral data, it is conservatively estimated that in the order of 416 ha of land (Freehold or Lands Leased) will be impacted by the Eden Bann Weir Stage 2 impoundment (increasing to 757 ha at Eden Bann Stage 3). This equates to a one per cent loss of total land holdings for both Eden Bann Weir stages. Individual losses range from negligible (less than 0.1 per cent) to four percent.

Based on cadastral data, an estimated 447 ha of land (Freehold and Lands Lease) will be impacted by the Rookwood Weir Stage 1 impoundment (increasing to 1,163 ha at Rookwood Stage 2). This equates to a negligible per cent loss of total land holdings and a one per cent loss of total land holdings for Rookwood Weir Stage 1 and Stage 2, respectively. However, due to some of the landholdings adjacent to the Rookwood Weir impoundment being small, individual losses range from negligible (less than 0.1 per cent) to 12 per cent (maximum at Stage 1) and 26 per cent (maximum at Stage 2). Two properties associated with the Stage 2 impoundment are estimated to lose 25 per cent and 26 per cent of their landholdings respectively.

While it is acknowledged that receptor sensitivity to loss of land is high and the loss of some land is likely (with the actual extent determined by final survey), the consequence of the loss, given that individual compensation negotiations will be entered into with landholders (including consideration of land value, improvements, management requirements, whole property purchase as necessary, etc), is considered minor with an overall low significance.

Properties in the local study area currently operate on the basis that flooding occurs to some degree annually. Irrigated infrastructure is set up above a 1:5 year event and cattle are moved around properties in response to rising flood waters. A detailed assessment of flood impacts is provided in Chapter 9 Surface water resources. In summary, Table 18-5 shows that post-development, some additional land will be flooded during smaller events. For the larger flood events, incremental changes to flooded areas will be negligible (on average the per cent change in land area flooded is 0.5). These incremental flood extents will inform the determination of the flood margin for the Project and will be used in individual land negotiations.

Table 18-5 Flood impact on land holdings pre and post-development

Flood event	Existing flood impact on land holdings		Post-development flood impact on land holdings		Percentage change in area of land holdings impacted		
	ha	% of total land holdings	ha	% of total land holdings	Min. %	Average %	Max. %
2 year ARI	2,987	2.42	4,123	3.35	0	1.79	24.58
5 year ARI	13,316	9.38	13,903	9.80	0	0.98	15.16
10 year ARI	19,577	14.28	20,032	14.61	0	0.68	10.37
20 year ARI	28,315	19.83	28,741	20.13	0	0.50	11.94

Additionally, infrastructure such as pumps and/or some fencing close to the river may require relocation. The impacts are primarily economic in nature and associated with the cost of replacing or relocating infrastructure. Given compensation negotiations will be entered into, the significance of the impact is considered to be low.

Loss of access to land and loss of access within properties and between properties may impact on the ability of certain landholders to productively manage their operations. Consultation with landholders, a review of the impoundment extents and flood modelling outputs indicate that a single property associated with Eden Bann Weir only may adversely be impacted in this way. An assessment of alternative access arrangements and costs has been undertaken and further discussions with the landholder regarding compensation will continue once a trigger for the Project is realised. In general however, the loss of access to land, while possible, will have minor productivity consequences to most landholders with an overall low significance of the impact.

Riparian landholders have indicated concern that altering the water flow regime will increase the occurrence of cattle bogging. While it is possible for cattle to become bogged during weir operation, stock mortality resulting in reduced productivity is considered unlikely with minor consequences and an overall low significance rating.

Potential impacts of the Project in relation to water allocation security objectives and opportunities for water allocations are discussed in Chapter 9 Surface water resources.

Recreational use of the river

Riparian landholders have indicated that they do not wish to see increased recreational use of the river. Concerns are that increased use may disrupt the rural lifestyle, increase the risk of trespassers and theft and increase the risk of weeds spreading. The Project area is remote and difficult to access with most riparian areas bounded by private landholdings. There are no existing publically accessible facilities (for example ablutions, boat ramps, etc.) that encourage use of the river. The Project will not facilitate recreational use of the impoundments. Recreational use of the impoundments is considered unlikely such that the significance of the impact is predicted to be low.

Water resources and flooding impacts

Within areas adjacent to the Project there is limited local use of groundwater. The Project is not expected to extract and utilise groundwater for the purposes of construction or operation (Chapter 5 Land, Chapter 10 Groundwater resources). Potential impacts associated with groundwater are predicted to be of low significance.

Eden Bann Weir and Rookwood Weir are not predicted to influence (or exacerbate) flooding beyond a 1 in 20 year Annual Exceedance Probability (AEP) event and a 1 in 50 year AEP event, respectively. Project influences on smaller flood events are described in detail in Chapter 9 Surface water resources. It is evident from the hydraulic and hydrology modelling that the incremental change to flood impacts pre- and post-development of the weirs are negligible. In addition to the minor effects on land associated with the minor increase in extent of flooding (Table 18-5), potential impacts relate to loss of road access.

As discussed above improved flood immunity of several river crossings (Chapter 2 Project description, Chapter 16 Transport) will facilitate movement across the road network in the local and regional study areas. The time of inundation increases marginally (0.5 days) at some local road locations (Chapter 9 Surface water resources, Chapter 16 Transport)) but no upgrade is proposed given the scale of change. While the impact is considered likely to occur, consequences are predicted to be minor with the impact considered to be of low significance.

18.3.4.2 Mitigation and management measures

In addition to mitigation measures included in the EMP and operational EMP (OEMP) (Chapter 23 Environmental management plan) management plans/strategies as they apply to managing social impacts are provided in Table 18-6.

Table 18-6 Relevant management plans and strategies applicable to managing social impacts

Management plan/strategy	Key features of the plans/strategies to managing social impacts
Stakeholder Engagement Plan	The Stakeholder Engagement Plan will include but not be limited to: • Tools and mechanisms for adequate, timely, clear, concise and regular communication with the stakeholders regarding project status, water allocations and management of key project impacts • Consultation with landholders, identifying the respective roles and responsibilities of the Project team and landholders • Alerts system regarding water releases • Grievance and dispute management procedure • Co-ordination with Traffic Management Plan and Construction Management Plan.
Land Acquisition Strategy	The Land Acquisition Strategy will include considerations for but not be limited to: • The statutory context for land acquisition • Implications for securing land and rights to land • Preference for acquisition by agreement • The process for acquiring land, the use of private land for project construction and quarrying on private land • Timing of land acquisition and payment of compensation • Grievance and dispute mechanisms including mediation.

Management plan/strategy	Key features of the plans/strategies to managing social impacts
Compensation Strategy	The Compensation Strategy will include considerations for but not be limited to: • Productivity impacts including temporary or permanent loss of land due to impoundment and easements, loss of viability of the business, time spent on project activities, loss of cattle due to project activities, weed spread due to project activities, loss of agricultural infrastructure such as pumps, costs of new fences and alterations to water allocation • Loss of opportunistic river crossings • Improved road access and flood immunity of identified river crossings • Opportunities in relation to improved water security • Grievance and dispute mechanisms including mediation.
Land Access Protocol	The Land Access Protocol will include but not be limited to: • Providing notice to landholders prior to accessing their property • Opening/closing of property gates • Respecting any individual requests from the landholders about timing and considering other land-based activities • Limiting project traffic to agreed tracks • Respecting appointment timing • Informing landholder as soon as possible of any changes to appointments.
Weed and Pest Management Plan	The Weed and Pest Management Plan will include but is not limited to: • Assigning designated vehicle wash down/brush down areas • Restricting access to designated tracks • Facilitating that all machinery and equipment entering the site is weed and pest free • The site will be kept clear and free of waste, and waste will be appropriately stored and removed to approved waste stations (as appropriate).
Traffic Management Plan	The Traffic Management Plan will include but not be limited to: • Speed limits on access roads • Specification of access tracks and roads to be used for project purpose • Time limits on construction traffic movements • Development of plan in consultation with landholders and local residents and including considerations for cattle crossing and other road uses • Co-ordination with Stakeholder Engagement Plan to inform stakeholders about updates/changes to project traffic; an • Planning of implementation of river crossing construction and upgrades of crossings at Glenroy, Riverslea, Foleyvale and Hanrahan.
Construction Management Plan	The Construction Management Plan will include but not be limited to: • Workforce requirements including skills requirement (including strategies for participation by Indigenous and minority groups), sourcing, accommodation and travel to and from project site • Recruitment planning giving preference to local employment by using local recruitment agencies • Contractor terms and conditions regarding recruitment.

Management plan/strategy	Key features of the plans/strategies to managing social impacts
Procurement Plan	The Procurement Plan will include but not limited to: • Policy specifying preference for local businesses to service the Project • Announce work packages through the ICN Gateway (as applicable).
Other EMPs applicable to mitigating social impacts	• Noise Management Plan • Air Quality Management Plan.

18.3.5 Monitoring potential social impacts

In addition to mitigating the predicted social impacts, there is a need to monitor the impacts and the effectiveness of the mitigation measures. The following monitoring mechanisms are suggested to track social impacts:

- Ongoing consultation and reporting on the consultation database
- Monitoring of grievance reporting and incident reporting
- Monitoring of ICN Gateway and contractors human resource data and reports to determine workforce and local business impacts
- Consultation with emergency service providers
- Any monitoring as identified in the EMP (construction EMP (CEMP) and OEMP) (Chapter 23).

18.3.6 Summary of social impacts and mitigation measures

Table 18-7 summarises the identified social impacts with an assessment of residual impacts after applying the management strategies.

The most significant benefit of the Project will be the increase in availability and reliability of water for regional users. The Project will facilitate and enable development in the region, thus benefiting the regional, state and national economies. Locally, the Project will increase business and employment opportunities.

Upgrades are proposed at Glenroy Crossing, Riverslea Crossing, Foleyvale Crossing and Hanrahan Crossing to maintain or enhance flood immunity.

Table 18-7 Summary of social impacts and mitigation measures

Impact	Receptors	Nature of impact	Rookwood Weir/ Eden Bann Weir	Impact significance	Management strategy	Residual impact
Planning phase						
Uncertainty about the Project	Riparian landholders, local community	Negative impact	Both	Medium	Stakeholder Engagement Plan Land Acquisition Strategy Land Access Protocol	Low
Raised expectations from the community for additional benefits	Riparian landholders, local community	Neutral	Rookwood Weir	High		Low
Disruption to daily life and business	Riparian landholders	Negative impact	Both	Low		Low
Potential costs to landholders due to the spread of weeds	Riparian landholders	Negative impact	Both	Low	Weed Management Plan.	Low
Construction phase						
Workforce size, skills requirement (including strategies for participation by Indigenous and minority groups), sourcing of workforce, workforce accommodation and workforce travel	Regional community	Positive impact	Both	High	CEMP Recruitment Plan Procurement Plan and use of the ICN Gateway, including provision for Indigenous and minority group employment)	High
Potential, temporary or permanent loss of land	Landholders on either side of weir site	Negative impact	Both	Medium	Land Acquisition Strategy CEMP	Low
Potential, temporary impact on productivity	Landholders on either side of weir site and along access route	Negative impact	Both	Medium	Weed Management Plan Traffic Management Plan Land Access Protocol.	Low
Potential, temporary impact on lifestyle	Landholders on either side of weir site and along access route	Negative impact	Both	Low	Stakeholder Engagement Plan (including a grievance management process)	Negligible

Impact	Receptors	Nature of impact	Rookwood Weir/ Eden Bann Weir	Impact significance	Management strategy	Residual impact
Potential, temporary increase in demand on community services, facilities and emergency services	Emergency service providers	Negative impact	Both	Low	Emergency management plans	Negligible
Potential safety risks due to increased traffic on local roads	Workforce, landholders and residents along access roads	Negative impact	Both	High	Traffic Management Plan Stakeholder Engagement Plan	Low
Potential damage to local roads due to construction traffic	Landholders along access roads (loss of cattle)	Negative impact	Both	Medium		Negligible
Operation phase						
Increase in water security and allocations at regional level	Regional community	Positive impact	Both	Very high	Positive impact, no mitigation measures required.	Very high
Loss of land and infrastructure such as pumps, fences and watering points	Riparian landholders upstream	Negative impact	Both	Low	Land Acquisition Strategy Compensation Strategy	Low
Loss of property and agricultural business viability	Riparian landholders upstream	Negative impact	Both	Low	Stakeholder Engagement Strategy	Low
Potential increase in cattle bogging	Riparian landholders	Negative impact	Both	Low	Amended Resource Operations Plan	Low
Loss of existing water allocation for agricultural activities (drinking water for cattle in water holes in the river bed)	Riparian landholders	Negative impact	Both	Medium		Low
Potential for recreational use of the upstream river, disrupting rural lifestyle and increasing the risk of trespassing and crime	Local community (upstream areas)	Negative impact	Both	Low	The Project will not provide facilities for, or that encourage, recreational use of the river.	Low
Potential impacts on groundwater resources	Riparian landholders	Negative impact	Rookwood Weir	Low	Compensation Strategy	Negligible
Loss of access as a result of flooding	Riparian landholders	Negative impact	Both	Low	Land Acquisition Strategy Compensation Strategy	Low