Coordinator-General's evaluation report for an environmental impact statement

Gladstone–Fitzroy Pipeline project

Released: February 2010

Report evaluating the Environmental Impact Statement under Part 4 of the *State Development and Public Works Organisation Act 1971*

The Coordinator-General

Queensland Government

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Coordinator-General's report – Synopsis

This Coordinator-General's report has been prepared pursuant to section 35 of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and provides an evaluation of the environmental impact statement (EIS) process for the Gladstone–Fitzroy Pipeline Project (GFPP) (the project). The Department of Infrastructure and Planning (DIP) managed the impact assessment process for this project on my behalf in accordance with the SDPWO Act.

The project has been designated as a controlled action under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and will be further assessed as to matters of national environmental significance by the Commonwealth Minister for the Environment, Heritage and the Arts.

This report includes an assessment and conclusion about the environmental and social effects of the project and any associated mitigation measures. Assessed material includes the EIS, the supplementary EIS (SEIS), properly made submissions and other submissions that I have accepted, and any other material that I deemed as relevant to the project, such as comments and advice from advisory agencies and other entities, technical reports and legal advice.

The Gladstone Area Water Board (GAWB) (the proponent) is proposing to build a 115 kilometre (km) pipeline to enable the transfer of 30 000 megalitres (ML) of water per annum from the lower Fitzroy River to Gladstone. The pipeline will provide water for current and future industrial and urban customers.

The project comprises the following key elements:

- an intake on the southern bank of the Fitzroy River, near Laurel Bank, in the vicinity of an existing Sunwater pump station that supplies the Stanwell Energy Park
- a water treatment plant (WTP), at Alton Downs near the Fitzroy River, occupying approximately 11.5 hectares (ha)
- approximately 115 km of pipeline of a diameter of 1067 millimetres (mm), constructed within a right of way corridor up to 30 metres (m) in width
- three pump stations – at the water intake, the water treatment plant, and near Raglan, each occupying approximately 1 ha
- a water storage tank of 10–15 ML at the Raglan booster pump
- a water storage tank of about 100 ML capacity at Aldoga.

The project traverses the Rockhampton and Gladstone Regional Council areas (RRC and GRC respectively). The pipeline is intended to run within the proposed Stanwell–Gladstone Infrastructure Corridor State Development Area (SGIC) for the majority of its length and then connect with existing water infrastructure near Yarwun within the Gladstone State Development Area (GSDA).

Several components of the project will not be located within the state development areas, namely the intake and WTP which are to be located in the RRC area and the Raglan booster pump and tank, to be located in the GRC area.

GAWB is undertaking preparations for the project to ensure that the pipeline and its associated infrastructure can be constructed within two years of completion of the EIS process, as soon as increased demand or low dam levels trigger the need for the project to proceed.

Construction for the project will only commence once all approvals have been obtained and when one or both pre-defined triggers are met. The Queensland Competition Authority (QCA) is charged with considering a submission from GAWB on construction commencement for the project.

For water allocation to be available, the project relies on delivery of additional infrastructure in the Fitzroy River, such as the raising of the Eden Bann Weir and construction of the Rookwood Weir. These projects, collectively known as the Lower Fitzroy River Infrastructure Project, will be subject to a separate assessment process.

GAWB will acquire land required for the Alton Downs WTP, Raglan pump station and the Aldoga reservoir, and is in discussion with landholders regarding these sites.

For the pipeline from Fitzroy to Gladstone, GAWB will acquire and manage an easement for the pipeline corridor in the Alton Downs area, with land remaining available for use by landowners under terms of an easement agreement. The State Government will acquire and manage easements for the section of the pipeline to be located in the Stanwell to Gladstone Infrastructure Corridor (SGIC). Within sections of the project located within the Gladstone State Development Area (GSDA), the pipeline is located on freehold land owned by the State and the Central Queensland Port Authority, with GAWB required to obtain a licence to construct and operate in this area.

The Department of Environment and Resource Management (DERM) issued a revised Fitzroy Basin resource operations plan (ROP) in July 2009 that specifies the reservation of 30 000 ML of high reliability water for GAWB from the Fitzroy River. The ROP provides for the granting of a water allocation from this reserve subject to conditions, including that agreements are in place with the proponent for the additional infrastructure necessary to supply the water allocation.

The EIS for the project was publicly advertised on 2 November 2008, with submissions invited until 15 December 2008. Agency briefings on the EIS were held in Gladstone and Rockhampton on 18 November 2008, and in Brisbane on 19 November 2008. In total, 27 submissions on the EIS were received by DIP. 21 submissions were received from advisory agencies and six were made by members of the public. The submissions were provided to GAWB for consideration and have been considered by me in the making of this report.

Following the receipt and analysis of submissions made on the EIS, it was determined that a supplementary EIS (SEIS) was required. GAWB submitted the SEIS to DIP on 2 June 2009. The SEIS was provided to those advisory agencies and general public submitters who had raised issues on the EIS, with comments invited from 19 June until 17 July 2009. Nine submissions were received by DIP on the SEIS.

Environmental impacts and management

In terms of key impacts resulting from the project, the majority of the pipeline alignment is to be co-located in infrastructure corridors and traverses cleared, grazed and highly disturbed areas.

For the approximately 115km length of the pipeline route, around 22.05 hectares of remnant vegetation will be required to be cleared.

Of this vegetation, approximately 0.36 hectares are listed as ‘endangered’ and 17 hectares are listed as ‘of concern’. The proponent will need to determine with DERM the nature and extent of offset areas that will need to be provided for impacts to threatened vegetation in the course of its application for permits to clear remnant vegetation.

A process is underway in the SGIC that may result in an approval for the clearing of remnant vegetation under the *Vegetation Management Act 1999* being held by the Coordinator-General. However should the timeframes of this process not align with the project’s construction schedule, the proponent will need to seek its operational works permits in the state development area direct with DERM.

I have provided conditions within this report for matters such as the management of road impacts, post-construction site rehabilitation, special area plans for works in sensitive locations, and requirements for the project’s environmental management plans. DERM has provided draft development approval conditions for the project’s Environmentally Relevant Activities, being 64 (water treatment) and 8 (chemical storage).

Further conditions placed by me in this report seek to minimise impacts to vegetation clearing and works in waterways and wetlands, including limiting works to occur during the dry season. I am satisfied that, by the application of its comprehensive EMP and conditioning herein, the project is able to manage impacts in these sensitive areas.

While no direct impacts to matters of national environmental significance is likely, works in the vicinity of habitat for the critically endangered yellow chat bird adjacent to the construction corridor will similarly be limited to occur outside of the breeding season. The proponent will also be required to contribute $50 000 in funding towards an existing research program for this species to help improve its outcomes. These and other matters are discussed in detail in this report.

Having regard to matters including the above, I consider that the EIS process conducted for the project has adequately addressed the environmental and other impacts of the project and meets the requirements of the Queensland Government for impact assessment in accordance with the provisions of Part 4 of the SDPWO Act and Part 5 of the *State Development and Public Works Organisation Regulation 1999* (the Regulation).

Therefore, I recommend that the Gladstone–Fitzroy Pipeline project, as described in detail in the EIS and summarised in section 2 of this report, can proceed, subject to the recommendations and conditions contained in Appendices 1–3 of this report and the project commitments made by GAWB contained in Appendix 4.

This report will be provided to the Commonwealth Minister for the Environment, Heritage and the Arts, pursuant to section 17(2) of the Regulation, to enable a decision on the controlled action for the project pursuant to section 133 of the EPBC Act.

……
Colin Jensen
Coordinator-General

Date: 2 February 2010

1. Introduction

This report has been prepared pursuant to section 35 of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and provides an evaluation of the environmental impact statement (EIS) process for the Gladstone–Fitzroy Pipeline project (GFPP) (the project). The EIS process was conducted by the proponent, the Gladstone Area Water Board (GAWB) and the EIS documentation was prepared on GAWB's behalf by its principal consultant, Arup.

An initial advice statement for the project (IAS) was lodged with the Coordinator-General on 6 June 2007. On 26 July 2007 the project was declared to be a "significant project for which an EIS is required" pursuant to section 26(1)(a) of the SDPWO Act.

On 11 July 2007, the Commonwealth Minister for the Environment, Heritage and the Arts determined that the project was a controlled action under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) (decision notice number EPBC 2007/3501) and therefore assessment by the Commonwealth Government Department of the Environment, Water, Heritage and the Arts (DEWHA) was required. The EIS process has been undertaken as per provisions of the bilateral agreement between the Queensland and Commonwealth Governments.

The objective of this report is to summarise the key issues associated with the potential impacts of the project on the physical, social and economic environments at the local, regional, state and national levels. It is not intended to record all the matters which were identified and subsequently settled. Instead, it concentrates on the substantive issues identified during the EIS process.

This report represents the conclusion of the Queensland Government's impact assessment process. Essentially, it is an evaluation of the project, based on information contained in the EIS and the supplementary report to the EIS (SEIS), submissions made on the EIS and SEIS, and information and advice from advisory agencies and other parties. The report states conditions and recommendations under which the project may proceed.

Following my approval, the report will be forwarded to the Commonwealth Minister for the Environment, Heritage and the Arts who will make a decision about the project based upon assessment of the controlled action, as per provisions of the EPBC Act.

2. Project description

2.1 The proponent

The proponent for the Gladstone–Fitzroy Pipeline project is the Gladstone Area Water Board (GAWB).

Pursuant to section 1084 of the *Water Act 2000*, GAWB has been recognised as a Category 1 Water Authority since 1 July 2000. GAWB is also a registered service provider under the *Water Act 2000* and the *Water Supply (Safety and Reliability) Act 2008* and operates as a commercialised statutory authority with the function of carrying out water activities. GAWB reports to the Minister for Natural Resources, Mines and Energy and Minister for Trade through a Board of Directors. As a government-owned business, the Queensland Competition Authority (QCA) has a regulatory role in relation to GAWB's pricing and investment in new infrastructure.

GAWB provides both treated and untreated water to municipal and industrial customers, including large industrial operations in the Gladstone area and in the Callide Valley. Supplies to industrial customers accounted for approximately 80 per cent of GAWB's total demand from Awoonga Dam in 2007–08, with supplies to its municipal customer, the Gladstone Regional Council, accounting for the remainder of supply.

GAWB owns and operates:

- Awoonga Dam on the Boyne River
- delivery pipelines for delivery of untreated water to treatment plants and industrial customers and for delivery of treated water to the Gladstone Regional Council (GRC) water reticulation systems and to other industrial consumers
- water treatment plants in the GRC area
- an untreated water pumping station at Awoonga
- treated water pumping stations at Benaraby, Calliope, Glen Eden, Boat Creek, Gladstone water treatment plant (high lift and low lift) and Yarwun water treatment plant
- untreated water reservoirs at Gladstone (Fitzsimmons Street) and Toolooa
- treated water reservoirs at Boyne Island, East End, Golegumma, Mt Miller and South Gladstone
- the Lake Awoonga recreation area adjacent to Awoonga Dam and Boynedale bush camp on the western shores of the Boyne River
- a fish hatchery in Gladstone city.

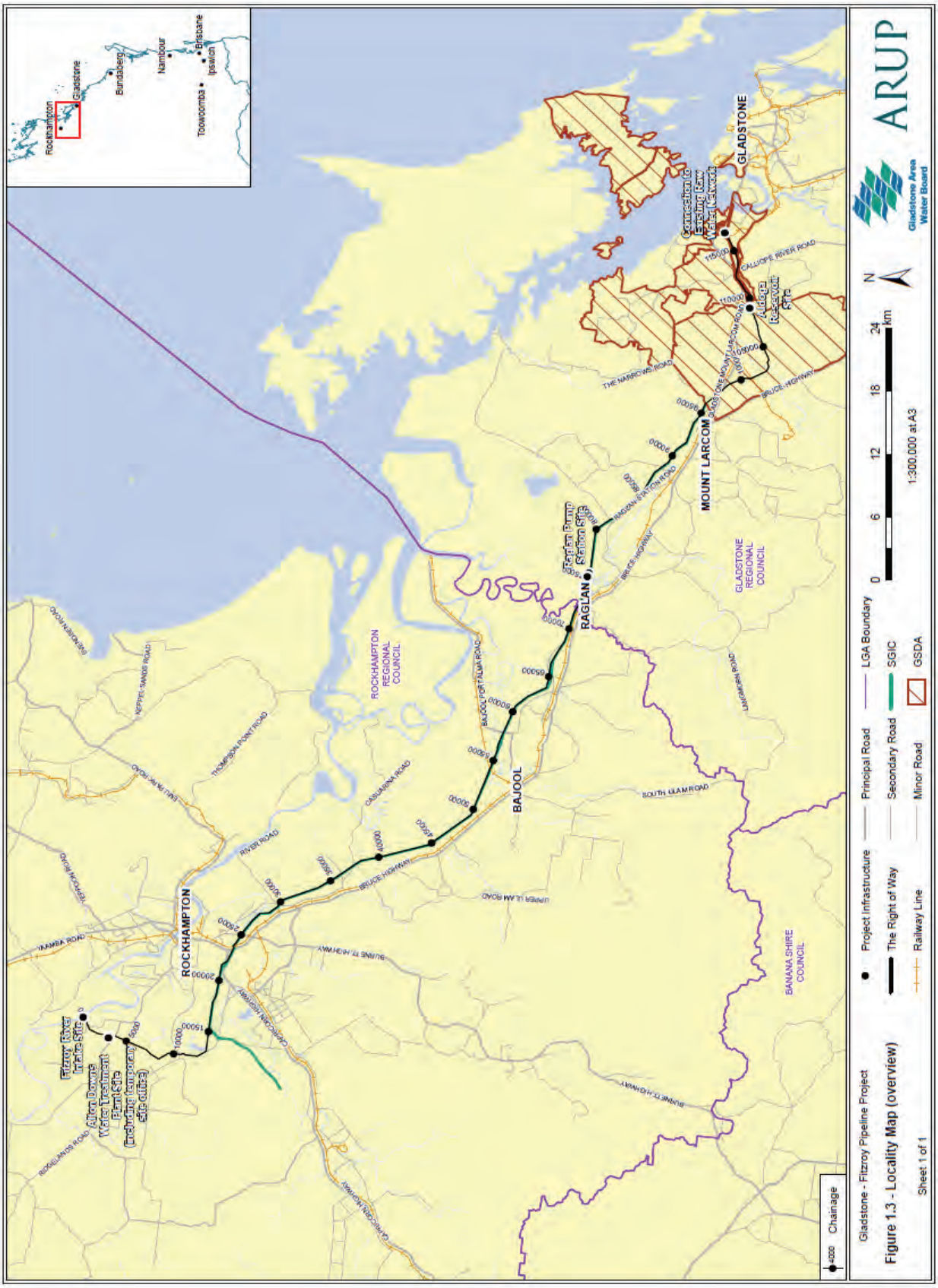
All references in this report to commitments made by GAWB, and recommendations and conditions applying to GAWB for this project, also apply to all parties engaged/assigned to construct and/or operate any part of the project and to any party to which GAWB may assign the GFPP.

2.2 Project elements

2.2.1 Overview

GAWB is proposing to build a 115 kilometre (km) pipeline to enable the transfer of 30 000 megalitres (ML) of water per annum from the lower Fitzroy River to Gladstone. A map of the project is included at Figure 1 below.

Figure 1: Gladstone–Fitzroy Pipeline project locality plan



The pipeline will provide water for current and future industrial and urban customers. The project comprises the following key elements:

- an intake on the southern bank of the Fitzroy River intake, approximately 17 km upstream of Rockhampton's Alexandra Bridge near Laurel Bank, and in the vicinity of an existing Sunwater pump station that supplies the Stanwell Energy Park
- a water treatment plant (WTP), at Alton Downs near the Fitzroy River, occupying approximately 11.5 hectares (ha)
- approximately 115 km of pipeline of 1067 millimetre (mm) in diameter, constructed within a right of way (ROW) corridor up to 30 metres (m) in width
- three pump stations — at the Fitzroy River water intake, at the Alton Downs water treatment plant, and near Raglan, each occupying an area of approximately one ha
- associated with each pump station there may be:
    - a single building (approximately 30m x 25m) housing the pumps complete with motors, controls and starters
    - a small substation depending on details of electricity supplies and
    - connection manifolds and valves
- a water storage tank of 10–15 ML at the Raglan booster pump
- a water storage tank of approximately 100 ML capacity at Aldoga.

The EIS describes the 'project area' as including the 30m wide ROW for the pipeline and land for all built infrastructure sites.

The project traverses the Rockhampton Regional Council (RRC) and Gladstone Regional Council (GRC). The pipeline is intended to run within the SGIC for the majority of its length and then connect with existing water infrastructure near Yarwun within the GSDA. Figure 1 shows where the various project elements are located relative to the council and state development areas.

Several components of the project are not within state development areas, namely the intake and WTP which are in the RRC area, and the Raglan booster pump and water storage tank located in the GRC area.

Capital investment was estimated in 2006 to be approximately $345 million, however this amount will change as detailed costing estimates are undertaken once the requirement for the project is triggered. The project is expected to directly create approximately 200 jobs during construction and 10 jobs during operation.

GAWB is carrying out preparations for the project to ensure that the pipeline and its associated infrastructure can be constructed within two years, as soon as increased demand or low dam levels triggers a requirement for the project to proceed.

Construction for the project will only commence once all approvals have been obtained and when one or both pre-defined triggers for demand or drought are met. The QCA is charged with considering a submission from GAWB on appropriate construction triggers for the project.

Storage located in the GSDA near Aldoga is intended to provide security of supply and operational control over the connection into the Gladstone raw water network. It is likely to be a cut/fill earth storage, although other storage types will also be considered. The storage is designed to have a capacity of approximately 100 ML, with the final size and type depending on hydraulic modelling and operational risk analyses, geotechnical and other investigations, and cost estimates.

Figure 2 shows a schematic of the project elements.

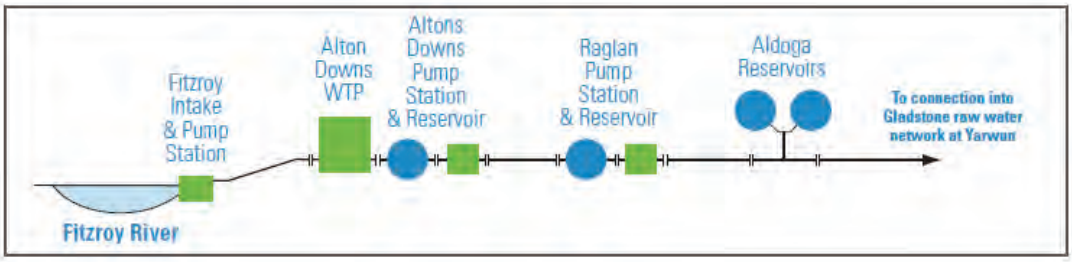


Figure 2: Project elements

2.2.2 Pipeline

The pipeline will be buried for its full length with a minimum cover of 750 mm. The depth of pipe will vary depending upon the pipe material, ground conditions and loading. For the majority of the route, the pipeline material will be mild steel cement lined (MSCL) pipe, which will require cathodic protection to ensure the pipe achieves its long-term design life specifications. In some locations the pipeline may be constructed using glass reinforced plastic (GRP). The pipeline will have an external diameter of approximately 1067 mm and will be constructed within a ROW which will generally be 30m wide. The ROW will allow room during construction for the pipeline trench, vegetation and soil stockpiles, a roadway with appropriate width for passing and the pipeline preparation area.

GAWB will acquire and manage easements for the pipeline corridor in the Alton Downs area, with, in most cases, land remaining available for use by the landowners under terms of an easement agreement.

The state government will acquire and manage easements for the SGIC, with GAWB's use of the land subject to a licence agreement with the state. Within the GSDA the pipeline is located on freehold land owned by the state (administered by DIP) and the Gladstone Ports Corporation. Within the GSDA, GAWB will require a licence to construct and operate the pipeline.

2.2.3 Fitzroy River intake

The intake and pump station will consist of a structure located in the river bank, with a separate plant room adjacent to the existing Sunwater pump station. The delivery pipe will be located within the approach embankment. Construction of the combined intake and pump station structure will require the temporary installation of a sheet piled coffer dam, extending into the river, to allow the foundation of the structure to be dewatered and excavated to the required design level. The construction of the combined structure will take place within the coffer dam.

The site will be accessed via Laurel Bank Road and Ski Gardens Road, using the existing point of access to the site from Ski Gardens Road.

The Fitzroy River intake location will be subject to a sublease agreement with Sunwater.

2.2.4 Alton Downs water treatment plant

The project requires a WTP at the northern end of the pipeline to improve the operating efficiency of the pipeline and to provide water of a similar quality to that already provided to existing GAWB customers from Awoonga Dam. The WTP will occupy an area of approximately 11.5 hectares and will comprise several buildings and structures including the control building, clarifier, residue dewatering (centrifuge) building, chemical dosing facility, a

reservoir and pump stations. Buildings will be fully enclosed, ventilated and the equipment acoustically attenuated to reduce noise. Post-construction, the site will be landscaped to improve the visual amenity of the new plant. The preferred site is partially cleared and is currently used for grazing purposes.

Access to the Alton Downs WTP will be via Ridgelands Road, and the point of access has been located away from residences. Waste residue from the sedimentation process will be transferred to a thickener, and then on to a centrifuge for dewatering to 30 per cent solids. It will be then taken to hoppers (silos) for storage, ready for transportation off-site. At the end of the process, the remaining residue will consist of approximately 70 per cent water (of the total quantity) and the remainder being coagulant and other solids removed from the raw water.

On average, the WTP will produce 133 tonnes of residue each day. Residue disposal will be determined in consultation with the relevant council authority and DERM.

GAWB will acquire and own land required for the Alton Downs WTP.

2.2.5 Raglan booster pump station

The Raglan pump station and reservoir site will be located mid-way along the pipeline to pump water to the Aldoga reservoir. The proposed location is a site of approximately six hectares in the GRC area immediately adjacent to the SGIC. The building will be fully enclosed, ventilated and acoustically rated. The reservoir will have a capacity of 15 ML.

GAWB will acquire and own land required for the Raglan pump station.

2.2.6 Aldoga reservoir

The Aldoga reservoir is to be located near Mt Larcom, with a storage capacity of about 100 ML. The land area of the site is approximately 10.5 ha. Due to the shape and size of the hilltop location, it is expected that the final design of the reservoir will be two separate structures. The site consists of rock (tuff) and will require a combination of drilling, blasting and/or mechanical removal. The EIS states that blasting will be completed by a certified operator under controlled conditions.

GAWB will acquire and own land required for the Aldoga reservoir.

2.3 Project rationale

2.3.1 Need for the project

GAWB considers that a prudent water supplier should have plans in place to supply reasonably expected demand growth. In the context of GAWB's uncertain and incremental demand environment, this involves either holding more spare capacity than will otherwise be required or having contingent supply plans in place to cope with large demand increments.

GAWB has identified three key drivers supporting the need to undertake detailed augmentation planning and investigations for the project:

- as a drought response and contingency measure
- in order to meet the likely sudden incremental increase in demand associated with new industrial developments in the Gladstone region
- to respond to lower expectations of the performance of Awoonga Dam in supplying required water allocations, which has impacts both in terms of drought and demand responses.

2.3.2 Relationship of GFPP to other projects and processes

Unallocated water

DERM regulates the planning and allocation of water in Queensland under the *Water Act 2000*. DERM identifies whether any unallocated water is available in Queensland catchments during its water resource planning process.

The Fitzroy Basin Water Resource Plan (1999) (WRP) identified water potentially available for allocation pending further investigations. As identified in the WRP, the balance remaining of the unallocated consumptive use resource over and above existing surface water entitlements comprises up to 300 000 ML of mean annual diversion from the Isaac/Connors and Lower Fitzroy River systems. The 'unallocated' water reflects a potential to take additional unsupplemented water without impact on the objectives of the WRP. It generally represents a low reliability resource and it is likely that useful access to this water will require significant new storage infrastructure (either in or off-stream).

Central Queensland Regional Water Supply Strategy

The Central Queensland Regional Water Supply Strategy (CQRWSS, issued by the former Department of Natural Resources and Water (NRW), December 2006) analysed supply and demand factors to meet urban, industrial and mining demands in the region. The strategy states that the Fitzroy Resource Operation Plan (ROP) may be amended to reserve (amongst others) up to 30,000 ML per annum of reliable water from the Lower Fitzroy for urban and industrial purposes for GAWB.

The raising of Eden Bann weir (stages one and two) and/or the construction of a new weir at Rookwood (stages one and two), both on the Fitzroy River, were identified during preliminary investigations for the CQRWSS as the preferred storage options in the Lower Fitzroy and initial studies and preliminary design have been completed.

The weirs were identified in the CQRWSS as being required to meet future demands for water in the region and to Gladstone, and it was recognised at the time that the allocation of water to GAWB for this project would likely be sourced from the development of the weirs. Whilst the project has linkages to the proposed weirs, the assessment of environmental impacts for the weirs is outside the scope of this project and will be undertaken by a separate process.

The Strategic Water Plan

In 2003, in response to a trend of declining rainfall and increasing demand for water, GAWB initiated a Strategic Water Planning project. The project's key report, *Securing the Gladstone Region's Future: Water, Final Report of GAWB's Strategic Planning Project,* was produced in November 2004. The report was a collaborative effort between GAWB, government, industry (including GAWB's customers) and the community, and became known as the Strategic Water Plan (SWP).

The SWP considered various options, including seawater desalination, further raising of Awoonga Dam, other new weirs and dams and demand management measures, before concluding that the preferred supplementary source of water was the lower Fitzroy River.

GAWB must be able to meet demand not only as it is expected to emerge, but where lead times are considerably shortened. To achieve this, GAWB has initiated a Contingent Supply Strategy (CSS). The CSS responds to these challenges by providing a 'least cost' effective risk mitigation strategy for customers, the state, the community and GAWB. GAWB states that the project is the major vehicle for the delivery of the CSS.

Future infrastructure plans

Given the various outcomes in terms of yield that different combinations of the above infrastructure options could realise, it was necessary to determine the appropriate sequencing of options to accord with demand projections. Based on preliminary assessments, GAWB determined that delivery of either the Eden Bann or Rookwood weirs options would meet

short to medium term urban and industrial demands. Both weirs may be required in the long-term, however detailed investigations will be undertaken to determine the staging or ordering of the two options.

Water allocations

A volume of unallocated water will be reserved for the future storage developments. Unallocated water is water that is technically possible to make available for future consumptive use by urban, rural or industrial sectors without compromising the environment or the security of supply of a water allocation to existing water users.

A water allocation is a licensed authority to take a specified quantity of water, granted under section 121 or 122 of the *Water Act 2000*. A water licence can only be issued under an approved ROP. For supplemented water (water supplied from a major water supply scheme such as the Lower Fitzroy — for example Eden Bann Weir or the proposed Rookwood Weir), a water licence may be specified in terms of the:

- nominal volume of water for the allocation
- location from which the water may be taken under the allocation
- purpose for which water may be taken under the allocation
- priority group to which the allocation belongs.

A high priority water allocation has a relatively high level of performance when compared to a medium priority water allocation. High priority water allocations are mostly used for urban and industrial purposes. Water allocations from future water supply schemes in the Fitzroy Basin will be managed in accordance with the Water Resource Plan (WRP) and the environmental flow objectives which are provided for through the resource operations plan (ROP).

The ROP includes rules for infrastructure operation and environmental management for the Lower Fitzroy Water Supply Scheme. This includes operating levels of storages and water holes, rules for releases of water from storages, and if applicable, a fishway management strategy.

In terms of water allocation for the project's use, DERM issued a revised Fitzroy Basin ROP in July 2009 that specifies the reservation of 30 000 ML of high reliability water for GAWB from the Fitzroy River. The ROP provides for the granting of a water allocation from this reserve subject to conditions, including that agreements are in place with the proponent for the additional infrastructure necessary to supply the water allocation.

Water sharing rules

The ROP also includes water sharing rules (that is, the distribution of allocated water between high and medium priority allocations). This includes the critical supply water sharing rule ('critical water supply' management arrangements and water sharing rules mean the management arrangements and rules in the ROP that apply during periods of low water availability).

The new allocation of 30 000 ML per annum as made to GAWB will be subject to rules such as the 'critical water supply rule' of the Fitzroy Basin ROP that will see the allocation restricted during periods of low flow in the river.

2.3.3 Alternatives

The project alternatives considered by GAWB in the EIS were based on the options identified as part of the SWP and subsequent development of the Plan. Since the release of the SWP, GAWB has undertaken further evaluation of water supply options, to expand upon the conclusions contained in the SWP.

The options considered by GAWB as alternatives to the project included:

- no action

- demand management — including consideration of seawater cooling of coastal industrial facilities and air cooling of inland power stations
- water use efficiency options — including a review of water trading, pricing and contract conditions to increase water efficiency
- reducing water losses — including assessing water losses throughout GAWB's raw and treated systems and identifying strategies to reduce these
- supply alternatives — including dam and weir construction, water recycling, ground water and desalination. GAWB has undertaken additional feasibility work on desalination to improve the reliability of cost estimates.

The project alternative assessment confirmed the project's priority as the key vehicle for delivery of the proponent's contingent supply strategy. GAWB confirms that from the assessment, a framework for its customers was developed which will present alternatives such as reducing demand and/or investing in water saving measures. It is acknowledged this would be a means to potentially defer delivery of the project.

3. Impact assessment process

DIP coordinated the impact assessment process for this project on behalf of the Coordinator-General in accordance with the SDPWO Act.

3.1 Significant project declaration and controlled action

An initial advice statement (IAS) was lodged with the Coordinator-General on 6 June 2007 and the project was declared to be a 'significant project for which an EIS is required', pursuant to section 26(1)(a) of the SDPWO Act, on 26 July 2007.

On 12 June 2007, the project was referred by GAWB to the Commonwealth Minister for the Environment, Heritage and the Arts to assess whether it was a 'controlled action' under the EPBC Act.

On 11 July 2007, DEWHA determined that the project was a controlled action under the EPBC Act for potential impacts on matters of National Environmental Significance (NES) (decision notice number EPBC 2007/3501).

Under a bilateral agreement between the Queensland and Commonwealth Governments, the EIS process conducted under the SDPWO Act satisfies the requirements of the Commonwealth Government EPBC Act, and the Coordinator-General's report on the EIS is used by the Commonwealth Minister for the Environment, Heritage and the Arts to make an assessment of a controlled action.

DEWHA advised that the controlling provision under the EPBC Act is listed species and communities (sections 18 and 18A), and for the purposes of this project include:

Fauna

- Birds
  - yellow chat (Dawson subspecies) (*Epthianura crocea macgregorii*)
  - squatter pigeon (*Geophaps scripta scripta*)
- Reptiles
  - brigalow scaly foot (*Paradelma orientalis*)
  - yakka skink (*Egernia rugosa*)

- ornamental snake (*Denisonia maculata*)

- Amphibians
  - Fitzroy tortoise (*Rheodytes leukops*)

Flora

- semi evergreen vine thickets of the brigalow belt
- brigalow (*Acacia harpophylla* dominant and co-dominant)
- whitewood (*Atalaya collina*)
- *Cycas megacarpa*
- *Cycas ophiolitica*
- *Quassia bidwillii*.

3.2 Review and refinement of the EIS terms of reference

Representatives of state government agencies[1] and local governments[2] were invited to act as advisory agencies for the EIS process. These included:

- Department of Communities
- Department of Emergency Services
- Department of Education, Training and the Arts
- Department of Mines and Energy
- Department of Employment and Industrial Relations
- Department of Housing
- Department of Local Government, Sport and Recreation
- Department of Main Roads
- Department of Natural Resources and Water
- Department of Primary Industries and Fisheries
- Department of the Premier and Cabinet
- Department of Tourism, Regional Development and Industry
- Queensland Transport
- Environmental Protection Agency
- Queensland Treasury

[1] See the note in chapter 10 of this report for the current names of state government departments following machinery of government changes that came into effect from 26 March 2009.

[2] Following Queensland local government amalgamations that took effect on 15 March 2008, the then Gladstone City, Calliope Shire and Miriam Vale Shire Councils merged to become the Gladstone Regional Council (GRC); and Fitzroy Shire Council, Livingstone Shire Council, Mount Morgan Shire Council and Rockhampton City Council merged to become Rockhampton Regional Council.

- Queensland Health
- Queensland Police Service
- Calliope Shire Council
- Fitzroy Shire Council
- Gladstone City Council.

Draft Terms of Reference (TOR) for the EIS were publicly advertised on 25 August 2007 in the Rockhampton Morning Bulletin, the Courier Mail and the Weekend Australian newspapers, with submissions invited until 24 September 2007.

An advisory agency briefing on the draft TOR was held in Rockhampton on 17 September 2007.

16 submissions on the draft TOR were received by DIP. 14 submissions were received from advisory agencies and two from the general public. Comments, where appropriate, were incorporated into a final TOR. Submissions were received from:

Advisory agencies:

- Department of Main Roads
- Department of Natural Resources and Water
- Department of Primary Industries and Fisheries
- Department of Housing
- Department of Communities
- Department of Emergency Services
- Queensland Transport
- Department of State Development
- Department of Premier and Cabinet
- Environmental Protection Agency
- Queensland Treasury
- Queensland Police Service
- Calliope Shire Council
- Fitzroy Shire Council
- Gladstone City Council.

General public:

- Capricorn Conservation Council Inc. (CCC)
- Gladstone Pacific Nickel Ltd (GPN).

The final TOR were issued to GAWB on 29 October 2007.

3.3 Public review of the EIS

GAWB submitted a draft EIS to the Coordinator-General on 3 July 2008. Subsequent to some minor amendments directed by DIP, the EIS was subsequently determined by the Coordinator-General to have substantially addressed the TOR.

The key issues dealt with by the EIS were mostly confined to local impacts associated with the Fitzroy River intake, the WTP at Alton Downs, booster pumping stations at Raglan, the pipeline ROW (corridor), and the storage reservoir at Aldoga. These issues included:

- location, design and operation of the Alton Downs WTP, including lighting, noise, traffic, and treatment and disposal of sediment residues
- visual, noise and traffic impacts of the exposed pipeline and associated above-ground facilities during construction and operation
- impacts to private properties, grazing and cropping leases, and other service providers that will be directly impacted by the project, including access restrictions
- soil disturbance, in particular the disturbance of potential acid sulfate soils and potentially contaminated land, and the loss of agricultural land
- vegetation clearing, rehabilitation and offsets
- effect of the project on the habitat of the critically endangered yellow chat bird (*Epthianura crocea macgregori*)
- impacts on watercourses, wetlands, water quality and aquatic fauna due to the construction of crossings and operational maintenance
- workforce issues, including local employment opportunities and accommodation.

The EIS was approved by the Coordinator-General for release and publicly advertised on 1 November 2008 in the Courier Mail, Rockhampton Morning Bulletin and the Gladstone Observer newspapers, inviting submissions until 15 December 2008 (a six week period).

The IAS, TOR and EIS executive summary were made publicly available on the DIP website on the significant projects page, which also linked to the full EIS report published on GAWB's project website, now located at www.gawb.qld.gov.au.

The EIS was displayed in hard copy format at:

- the Gladstone Regional Council library
- Rockhampton Regional Council library
- the Queensland Parliamentary library
- the Queensland State Library in Brisbane
- the Department of Premier and Cabinet library.

Advisory agency briefings on the EIS were held in Gladstone and Rockhampton on 18 November 2008 and in Brisbane on 19 November 2008.

27 properly made submissions on the EIS were received by DIP. 21 submissions were from advisory agencies and six were general public submissions. These were recorded by DIP and provided to GAWB for appropriate consideration and response.

Submissions were received from:

Advisory agencies:

- Department of Natural Resources and Water
- Environmental Protection Agency (Central Office)
- Department of Mines and Energy
- Department of Communities and Disability Services (regional and central offices)
- Department of Main Roads
- Department of Transport
- Department of Primary Industries and Fisheries

- Department of Housing
- Department of Tourism, Regional Development and Industry
- Queensland Treasury
- Department of Emergency Services
- Department of Infrastructure and Planning (Central Region Planning Group and State Development Areas)
- Rockhampton Regional Council
- Gladstone Regional Council
- Commonwealth Department of the Environment, Water, Heritage and the Arts.

General public:

- Powerlink
- Gladstone Ports Corporation
- Jemena East (Alinta)
- Capricorn Conservation Council Incorporated
- six private submissions.

The substantive issues raised in submissions that required additional attention by GAWB included:

- approvals and consistency with land use plans and development schemes
- potential impacts to yellow chat habitat
- workforce accommodation requirements
- vegetation clearing, offsets and revegetation
- interaction with mining leases, gas pipelines, transmission lines and rail projects
- traffic management
- watercourse crossings
- construction timing.

3.4 Supplementary EIS

Following the receipt and analysis of submissions made on the EIS, it was determined by DIP officers that a supplementary EIS (SEIS) was required and that unresolved issues could be directly negotiated by an exchange of information between GAWB and advisory agencies/public submitters. GAWB proceeded to correspond and liaise directly with advisory agencies/public submitters to resolve any outstanding issues.

GAWB submitted the SEIS to DIP on 2 June 2009. The Deputy Coordinator-General approved the SEIS be issued for review to those advisory agencies and general public submitters who had raised issues on the EIS which were then addressed in the SEIS. Comments were invited from 19 June until 17 July 2009.

Nine submissions were received by DIP on the SEIS. Wherever substantive issues required technical resolution, GAWB provided a written response to the SEIS submission.

Advisory agencies were then requested to provide confirmation in writing acknowledging that their issues had been satisfactorily addressed by GAWB or alternatively to provide possible recommendations and/or conditions that might allow the project to proceed.

4. Approvals for the project

4.1 Overview of approvals regime

The SDPWO Act establishes the framework for environmental assessment of declared significant projects in Queensland and, along with the *Sustainable Planning Act 2009* (SPA) and the *Sustainable Planning Regulation 2009* (SPR), is the controlling legislation for the project at the state level.

Table 1 below lists the approvals required for the construction and operational phases of the project.

Table 1: Summary of likely approvals required for the project [3]

Development Approval		
Legislation	**Approval**	**Approval agency**
• *State Development and Public Works Organisation Act 1971* and • *Sustainable Planning Regulation 2009*	• Material change of use (MCU) approval for the pipeline and ancillary facilities under the SGIC development scheme	• Department of Infrastructure and Planning (DIP/Coordinator-General (CG)
• *State Development and Public Works Organisation Act 1971* and • *Sustainable Planning Regulation 2009*	• MCU approval for the pipeline, Aldoga reservoir and ancillary facilities under the GSDA development scheme	• DIP/CG
• *Sustainable Planning Act 2009* or *Sustainable Planning Regulation 2009*	• Ministerial Designation of Land for Community Infrastructure for the Fitzroy River Intake, Alton Downs Water Treatment Plant, section of pipeline in a local government area, any temporary workers' accommodation (if required) and ancillary facilities **OR**	• Queensland Minister for Natural Resources, Mines and Energy and Minister for Trade
	• MCU approval for: – Raglan booster pump station and ancillary facilities under the Gladstone Regional Council (ex-Calliope Shire Council) planning scheme: impact assessable as Industry (rural) – (Note: project infrastructure located in the Rockhampton Regional Council area is exempt development being classified as 'public facility' for the supply of water)	• GRC
• *Environmental Protection Act 1994 (Environmental Protection Regulation 2008)* and • *Sustainable Planning Regulation 2009*	• MCU approval for Raglan booster pump station and ancillary facilities under the GRC (ex-Calliope Shire Council) planning scheme	• GRC

[3] EIS Appendix C, Table 1; SEIS Appendix C

Development Approval		
Legislation	**Approval**	**Approval agency**
Operational works approvals		
• *Environmental Protection Act 1994 (Environmental Protection Regulation 2008)* (EP Act) • *Sustainable Planning Regulation 2009*	• MCU approval for Environmentally Relevant Activities (ERAs): – ERA 64 – Water treatment – ERA 8 – Chemical storage	• DERM
• *Vegetation Management Act 1999* • *Sustainable Planning Regulation 2009*	• Operational works approval for clearing native vegetation	• DERM
• *Water Act 2000* • *Sustainable Planning Regulation 2009*	• Operational works approval for works in a watercourse (water intake in Fitzroy River)	• DERM
• *Water Act 2000* • *Sustainable Planning Regulation 2009*	• Operational works approval for removal of quarry material as a result of construction works	• DERM
• *Water Act 2000* • *Sustainable Planning Regulation 2009*	• Operational works approval for works required for directing overland flow of pipeline discharges	• DERM
• *Coastal Protection and Management Act 1995* • *Sustainable Planning Regulation 2009*	• Operational works in a Coastal Management District	• DERM
	• Operational works on or above tidal waters/ land	• GRC
• *Fisheries Act 1994* • *Sustainable Planning Regulation 2009*	• Operational works approval for disturbance of marine plants	• Department of Employment, Economic Development and Innovation (DEEDI)
	• Operational Works approval for building or raising waterway barrier works	
Other approvals		
• *Nature Conservation Act 1992*	• Permit for taking, using, keeping or interfering with a protected animal or plant. • Permit to be obtained if protected plants or animals are affected by the project.	• DERM
	• Fauna to be relocated in accordance with Fauna Management Plan.	
• *Aboriginal Cultural Heritage Act 2003*	• Duty of care to take all reasonable and practicable measures not to harm Aboriginal cultural heritage. • Aboriginal cultural heritage investigation and Cultural Heritage Management Plan to be prepared.	• DERM
• *Water Act 2000*	• Water Permit to take construction water from a watercourse, lake or spring, or groundwater	• DERM
• *Water Act 2000*	• Riverine Protection Permit to destroy vegetation, excavate and/or place fill within a watercourse, lake or spring.	• DERM

4.2 State development areas

Material change of use (MCU) development applications under the SDPWO Act are required for the pipeline and ancillary facilities (e.g. pipe laydown areas) within the SGIC development scheme. Within the SGIC, the development scheme for the state development area (SDA) replaces the planning scheme for the Rockhampton Regional Council (RRC) local government area.

MCU development applications under the SDPWO Act are required for the pipeline, Aldoga reservoir and ancillary facilities (pipe laydown areas) under the GSDA development scheme. Within the GSDA, the development scheme for the GSDA replaces the planning scheme for the Gladstone Regional Council (GRC) local government area.

In this report, I have stated conditions, included in Appendix 1, pursuant to section 9.5(5) of the development scheme for the SGIC and section 9.5(5) of the development scheme for the GSDA, relevant to the development approval for MCU within the SDAs.

MCU development approval within the SGIC and GSDA are granted by the assessment manager under the SDPWO Act, who is the Coordinator-General.

Certain SPR development approvals for all of the project that are not MCU (i.e. operational works, building works, etc.) are assessed under schedule 3, part 1 of SPR, by a local government assessment manager against the local government planning scheme.

All other SPR development approvals within the SDAs that are not MCU or assessed against a local government planning scheme (i.e. operational works, building works etc.) are assessed under SPR by the relevant assessment manager (SPR, schedule 6).

4.3 Regional council areas

Those parts of the project not within an SDA mainly traverse land under the jurisdiction of RRC. RRC has administered the former Fitzroy Shire Council's planning scheme since 15 March 2008 following amalgamation of the Fitzroy, Livingstone, and Mount Morgan Shire Councils and Rockhampton City Council into RRC.

RRC has confirmed that MCU approval is not required for the Fitzroy River water intake, Alton Downs water treatment plant, pipeline and ancillary facilities under RRC's (ex-Fitzroy Shire Council) planning scheme and the Rockhampton City Plan as the infrastructure is classified as 'public facility' in a rural zone for the supply of water.

Several hectares of the project area are within the GRC local government area. GRC has administered the former Calliope Shire planning scheme since the merger of Gladstone City and the Calliope and Miriam Vale Shire Councils in 2008.

MCU approval for the Raglan booster pump station and ancillary facilities would be required under the GRC (formerly the Calliope Shire Council) planning scheme. These works are in accordance with GRC's major infrastructure industry definition of the local government's planning scheme. Should a community infrastructure designation (discussed in the following section) be granted over this area, an MCU would not be required.

In addition, should the proponent in the future determine the need to establish temporary workers' accommodation for the project, MCU development approval may be required for this under either the RCC or GRC planning schemes if located in these areas. The development scheme for the GSDA does not permit workers' accommodation in this area.

4.4 Community infrastructure designation

In section 1.9.2.2 of the EIS (project approvals) GAWB signalled its intent to pursue a community infrastructure designation (CID) for “some or all” of the project under section 207 of SPA. Further to the EIS, GAWB has clarified its position defining “some or all” of the project:

> “some”, relates only to those aspect of the project outside of SDAs
>
> “all”, relates to aspects of the project outside and within the SDAs.

The key advantages for pursuing a CID for all of the project have been identified by GAWB as including the following:

- providing a useful mechanism for consolidating all of the general requirements for the project, rather than dividing these up arbitrarily at the boundary of the SDA
- avoiding a significant approval process, potentially delaying the delivery of the project as the environmental assessment and public consultation prerequisites will have already been fulfilled as part of the EIS process
- rendering the impact assessable components of development exempt from assessment by a local government and against the development schemes for the SGIC and GSDA.

GAWB also identified the following disadvantages for pursuing a CID for all of the project area:

- no express process for the amendment of conditions (called ‘requirements’), which may result in the need for a degree of environmental assessment to replace a condition
- the Minister has a unilateral power to repeal the CID and there is no appeal right against such a decision.

I find that there is no sound basis for a CID in the SDAs as the government, by declaring a SDA, has designated the land use of that area and prepared development schemes that govern development in these locations.

Therefore, I would not support an application for a CID relating to an area within a SDA for this project.

During the designation process (SPA, section 207), relevant local government and public sector entities will be consulted and have the opportunity to provide a submission stating their interests with the designation.

In the event that GAWB does request the Minister for Natural Resources, Mines and Energy and Minister for Trade to designate land for community infrastructure for some or all of the project, and the Minister then does pursue the designation, this report will provide recommendations and conditions for the project approval. The recommended conditions as provided in Appendix 2 are structured accordingly.

SPA section 207(3)(f) provides that if “the Coordinator-General has, under the SDPWO Act, section 35, prepared a report evaluating an EIS for, or including, development for the community infrastructure”, then the environmental assessment and public consultation requirements of the EIS are deemed to have satisfied those requirements for the designation process. Notwithstanding SPA section 207(3)(f), the designating Minister may require additional environmental assessment and public consultation to be undertaken.

4.5 Environmentally relevant activities

On 1 January 2009, the *Environmental Protection Regulation 2008* came into effect. The regulation included a revised set of environmentally relevant activities (ERAs) that could be associated with the construction and operation of infrastructure.

Two ERAs have been identified as required by the project:

- ERA 64: water treatment
- ERA 8: chemical storage

Waste will be required to be transported off-site from the Alton Downs WTP during operation of the facility, and will trigger the requirement for an ERA 57: Regulated waste transport authority. However, this will not be required to be held by the project's proponent as an independent service provider will be contracted by GAWB to transport the waste.

DERM will be the assessment manager for development approval for undertaking ERAs pursuant to the EP Act.

DERM has provided key conditions for ERAs 64 and 8 which are included at Appendix 3 of this report. GAWB will be required to consult with DERM prior to applying for its development approval for the ERAs so that further specific conditions relevant to the final location and design of the project can be formulated by DERM.

4.6 Other approvals

Certain SPR development approvals are required prior to construction which are not assessed under SPR by a local government assessment manager against its planning scheme. These include the provisions of SPR schedule 3: Assessable development, self-assessable development and type of assessment.

Table 1, included at the commencement of this section, provides details of these approvals and indicates the responsible agencies.

5. Key findings and management strategies of the EIS

The SDPWO Act defines 'environment' to include:

- ecosystems and their constituent parts, including people and communities
- all natural and physical resources
- the qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community
- the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned above.

'Environmental effects' means 'the effects of development on the environment, whether beneficial or detrimental'. These effects can be direct or indirect, of short, medium or long-term duration and cause local or regional impacts.

The key findings of the EIS, by key topic, include:

- terrestrial fauna — in particular the yellow chat (*Epthianura crocea macgregorii*)
    - the following three species listed as significant under the provisions of the Commonwealth and/or state legislation were recorded during surveys:
        - critically endangered – yellow chat (*Epthianura crocea macgregori*)
        - vulnerable – squatter pigeon (sth. subsp.) (*Geophaps scripta scripta*)
        - Vulnerable – ornamental snake (*Denisonia maculata*).

      A further seven threatened species were confirmed during field studies as having the potential to be present due to suitable habitat within the project area.
    - the project area has a relatively low habitat diversity and is highly disturbed by previous land uses
- terrestrial flora
    - no species listed as endangered or vulnerable under the *Nature Conservation Act 1994* (NC Act), and threatened under the EPBC Act, were found during surveys
    - no targeted rare or threatened plant species were observed during field surveys
    - some patches of remnant native vegetation were identified in the project area
- air quality
    - key potential air pollutants include nuisance dust, particles as PM_{10}, NO_x, CO, greenhouse gases and odour
    - temporary dust generation is likely to occur as a result of vegetation clearing, earthworks and other activities which will occur during construction
    - odour from the Alton Downs water treatment plant was assessed as being of negligible significance
- noise and vibration
    - the proposed pump stations and water treatment plant will be likely sources of operational noise
    - the Fitzroy River water intake and Raglan booster pump area will not be expected to exceed noise criteria at the nearest residence
- waste — sources identified include:
    - general construction wastes
    - WTP sediment residue will be produced at an average of 133 tonnes day, based on a consistency of approximately 30 per cent dry solids. This equates to approximately 14 heavy vehicle trips per day during operation of the Alton Downs WTP

- waste water from hydro testing and commissioning of the pipeline — large quantities will be disposed from scour outlets to land and local waterways (between 111 and 579 ML – primarily to Boat Creek or Larcom Creek)

- transport, traffic and access arrangements
  - the generation of construction traffic will create a short term increase in traffic volumes on the road network during the construction period — increases are expected to be relatively low and could be readily absorbed by the road network
  - traffic impacts during operation will comprise the transportation of residue (14 truck trips per day) from the WTP to an approved local government landfill nearby or to a local contractor in a similar proximity

- visual amenity
  - some visual modification of the landscape will occur during construction through vegetation removal and presence of machinery
  - final constructed forms will have some minor visual intrusion, particularly at the water intake, WTP, Raglan booster and Aldoga reservoir
  - pipeline will be buried for the majority of its length

- environmental management plans
  - the planning environmental management plan (EMP) as described in the EIS will form the precursor to the construction and operations EMPs
  - the planning EMP includes and builds on mitigation measures in each chapter
  - the planning EMP contains commitments for compliance by GAWB and its contractors
  - the planning EMP considers construction, operation, commissioning and decommissioning.

The key potential impacts identified in the EIS relate mainly to the following aspects of the project:

- clearing of the 30m construction width for the pipeline ROW, with some direct impacts to vegetation and associated habitat areas
- construction activity (for example clearing and trenching) in the ROW with the potential for temporary dust and noise generation, disruption to land uses and reduced visual amenity
- construction at creek crossings, with potential impacts to riparian vegetation, stream banks and water quality
- traffic generation during construction and operation and the potential impacts to roads in the project area
- operation of the Alton Downs WTP with the potential for noise generation, impacts to visual amenity and transport of waste residue
- generation of testing water during the commissioning of the Alton Downs WTP and pipeline and the disposal of this water to land or waterways.

Management of these potential impacts will be undertaken by the:

- EMP and associated plans, as described in section six of this report
- conditions of the draft development approval as described in Appendix 3 of this report
- Coordinator-General imposed conditions as described in Appendices 1 and 2 of this report
- proponent commitments (Appendix 4)

6. Environmental management plan

6.1 EMPs proposed by the proponent

A draft planning EMP has been prepared by GAWB for the project and is contained within Appendix F of the SEIS. The planning EMP draws on the findings and recommendations of the project's EIS and proposes environmental protection commitments to protect the environmental values potentially affected by the project. The scope of the planning EMP includes the pipeline and associated infrastructure and works areas (which includes the ROW), construction compounds, pipe lay down areas and access tracks.

The planning EMP will form the precursor to the:

- construction EMP, which will be developed by the construction contractor prior to commencing construction
- operations EMP, which will be developed by GAWB at the start of the operational phase of the project.

The planning EMP therefore contains actions relevant to both the construction and operational phases of the project. The planning EMP has been prepared with reference to the *Australian Pipeline Industry Association Code of Environmental Practice for Onshore Pipelines* (2005).

The planning EMP has been divided into different sections corresponding to different chapters of the EIS (where applicable). Within each section there are one or more control plans to manage specific environmental aspects (EIS, Table 20.1). These are shown in Table 2 of this report. The 23 control plans contain the following information:

- the environmental aspect requiring management consideration
- the potential impacts or key issues (summarised from the EIS)
- performance objectives
- performance criteria
- implementation actions
- monitoring actions
- responsibility
- reporting requirements
- corrective actions.

The planning EMP also includes the roles and responsibilities for implementation and reporting requirements.

Table 2: Index of EMP control plans*

EIS section number	Section name	EIS table number	Control plans
20.3.1	Project environment management	Table 20.2	Project environmental management
20.3.2	Climate	Table 20.3	Climate impacts
20.3.3	Land use and infrastructure	Table 20.4	Land use and infrastructure
20.3.4	Soils and contaminated land	Table 20.5	Erosion and sedimentation
		Table 20.6	Contaminated land
		Table 20.7	Acid sulfate soils
20.3.5	Flora and fauna	Table 20.8	Vegetation clearing
		Table 20.9	Introduced/pest fauna
		Table 20.10	Fauna management and protection
		Table 20.11	Weed management
20.3.6	Water resources and water quality	Table 20.12	Water resources and water quality
20.3.7	Air environment	Table 20.13	Air environment
20.3.8	Waste	Table 20.14	Waste management
		Table 20.15	Hydrotesting and commissioning
20.3.9	Noise and vibration	Table 20.16	Noise and vibration management
20.3.10	Transport and access arrangements	Table 20.17	Transport and access
20.3.11	Cultural heritage	Table 20.18	Cultural heritage
20.3.12	Social and economic environment	Table 20.19	Social and economic environment – complaints procedure
20.3.13	Hazard and risk	Table 20.20	Handling and storage of dangerous goods
		Table 20.21	Health and safety management
		Table 20.22	Emergency management
20.3.14	Landscape and visual assessment	Table 20.23	Landscape and visual amenity management

* Based on Table 20.1, EIS.

As part of developing, implementing and complying with a construction and/or operations EMP, a number of sub-plans will need to be prepared and implemented as identified in EIS Figure 20.2 and Table 3 of this report.

Table 3: EMP sub-plans*

Construction EMP sub-plans	Operations EMP sub-plans
Acid sulfate soils management plan	Acid sulfate soils management plan
Approved risk management plan	Approved risk management plan
Blasting operations plan	Blasting operations plan
Communications plan	Communications plan
Constructions plan	-
Construction safety plan	-
Cultural heritage management plans (Indigenous and Historic)	Cultural heritage management plan
Dangerous goods control plan	Dangerous goods control plan
Emergency management plan	Emergency management plan and emergency action plan
-	Operations safety plan
Ground water management plan	Ground water management plan
Site specific erosion and sedimentation control plans	Site specific erosion and sedimentation control plans
Special area plans	Special area plans
Traffic management plans	-
Waste management plan	Waste management plan
Weed management plan and weed specific surveys	Weed management plan and weed specific surveys

* Based on EIS table 20.2. This list may be updated during the preparation of the construction EMP and/or operations EMP.

Where site-specific mitigation/measurement measures will be required due to the nature or sensitivity of an area, special area plans (SAPs) may be prepared and implemented. The proponent has indicated that the SAPs identified in Table 4 below may be prepared.

Table 4: EMP special area plans (SAP)

Relevant control plan	SAP
Vegetation clearing	At key locations where site-specific mitigation measures have been identified in the EIS
Fauna management and protection	At key locations where site-specific mitigation measures have been identified in the EIS
Water resources and water quality	At all waterway crossings
Health and safety management	For the management of the Fitzroy River intake area

I have made provisions for requiring several SAPs in locations where I consider special circumstances in environmental management require specific measures. These include SAPs for the following:

- Gavial Creek
- Inkerman Creek
- Bob's Creek
- Horrigan Creek

- Raglan Creek
- Lion Creek
- Marble Creek
- Twelve Mile Creek
- Larcom Creek.

6.2 Proponent commitments

Appendix 4 of this report contains a list of commitments provided by GAWB, which is a list of GAWB's proposed actions as outlined in SEIS. The discussion of issues that follows has been based upon the assumption that these commitments are reflected in the planning EMP (Appendix F of the SEIS) that has been drafted for the project. Some commitments have been further developed and included as conditions in this report.

These commitments generally include actions beyond those required to meet statutory approvals, and their implementation would enhance the mitigation of potential adverse impacts that would result from the construction and/or operation of the project. I therefore accept the commitments made by GAWB as presented in Appendix 4.

6.3 Approval, implementation and review of the EMP

Various approval conditions will require GAWB to address a number of environmental issues such as water quality, air quality, noise and waste management. These are matters addressed by the EMP.

Consequently, a final detailed EMP is required to detail the specifics of the proposed management procedures. The appropriate time to prepare the final detailed EMP is during the detailed design stage when more accurate information is available to detail the specifics of the proposed management procedures.

The effective implementation of the EMP will satisfy the commitments made by GAWB in the SEIS and the requirements of conditions, and will ensure the effective management of environmental impacts of the project.

Also, the EMP is intended to be a dynamic document through ongoing consultation with state and local government agencies. Revisions will include, but not be limited to:

- inclusion of final organisational structures for construction and operational staff and the allocation of responsibilities in line with the organisational structure
- inclusion of relevant approval conditions arising from the project's approval and subsequent permits, authorities and/or licences
- review of the operations EMP at the end of the construction phase.

Additional revisions to the EMP can occur on an as-needs basis, including revisions to address items identified during incident investigations, inspections or audits, or to reflect knowledge gained during the course of the project's construction and operations. Any changes to the detailed EMP should be implemented in consultation with the relevant authorities where necessary.

In order to ensure that the planning EMP is carried forward to the preparation and implementation of construction and operations EMPs, I require that the following condition be made which sets minimum requirements for matters the EMPs must address.

The placing of this condition pertains to areas both within SDAs and within the RRC and GRC local government areas.

For the SGIC and GSDA, the condition is made in accordance with section 52 of the SDPWO Act, and pursuant to section 9.5(5) of the development schemes for the SDAs.

For areas within the RRC and GRC local government areas which may be subject to a CID should the proponent proceed with the making of an application, the condition is made in accordance with section 43 of the SDPWO Act. The condition also applies should a CID not be made.

Condition 1

Part A — Construction EMP

Within 60 business days of appointing a construction contractor for the project, and at least 30 business days prior to the commencement of any significant construction works on the project, the proponent and/or its contractor(s) shall finalise the Gladstone-Fitzroy Pipeline project construction EMP and submit it to the Coordinator-General for approval.

The construction EMP shall contain control plans for at least the following:

- **project environmental management**
- **climate impacts**
- **land use and infrastructure**
- **erosion and sedimentation**
- **contaminated land**
- **acid sulfate soils**
- **vegetation clearing**
- **introduced/pest fauna**
- **fauna management and protection**
- **weed management**
- **water resources and water quality**
- **air environment**
- **waste management**
- **hydrotesting and commissioning**
- **noise and vibration management**
- **transport and access**
- **rehabilitation and revegetation**
- **cultural heritage**
- **social and economic environment – complaints procedure**
- **handling and storage of dangerous goods**
- **health and safety management**

- **emergency management**
- **landscape and visual amenity management.**

In addition, the EMP shall contain special area plans (SAPs) for locations including for those specified in other conditions in this approval.

In finalising the construction EMP, the proponent must ensure that:

1) **all relevant project commitments included in Appendix 4 of the Coordinator-General's report for the Gladstone-Fitzroy Pipeline are included in the EMP**

2) **the Department of Environment and Resource Management (DERM), the Department of Transport and Main Roads (DTMR) and Queensland Primary Industries and Fisheries (QPIF) support the construction EMP for the project.**

The proponent must submit with the construction EMP a report detailing any consultation activities and evidence of the agencies' support.

Audits must be undertaken on a six monthly basis during construction by an independent and appropriately qualified person to determine whether the project's activities are in compliance with the construction EMP.

A report must be prepared by the independent and appropriately qualified person and provided to the Coordinator-General within 30 business days of the end of the monitoring period to which the audit relates. The report must include details of any non-compliance, corrective actions, revised practices and evidence to support the findings of the audit.

The audit period will begin on commencement of construction and end once all audit report corrective actions have been completed.

Part B – operations EMP

The proponent and/or its contractor(s) shall finalise the Gladstone-Fitzroy Pipeline project operations EMP and submit it to the Coordinator-General for approval at least 30 business days prior to the proposed operations commencement date.

The operations EMP shall contain control plans for at least the following:

- **project environmental management**
- **climate impacts**
- **land use and infrastructure**
- **erosion and sedimentation**
- **contaminated land**
- **acid sulfate soils**
- **vegetation clearing**
- **introduced/pest fauna**
- **fauna management and protection**
- **weed management**
- **water resources and water quality**

- **air environment**
- **waste management**
- **hydrotesting and commissioning**
- **noise and vibration management**
- **transport and access**
- **cultural heritage**
- **social and economic environment – complaints procedure**
- **handling and storage of dangerous goods**
- **health and safety management**
- **emergency management**
- **landscape and visual amenity management.**

In addition, the EMP shall contain SAPs for locations including those specified in other conditions in this approval.

In finalising the operations EMP, the proponent must ensure that:

1) **all relevant project commitments included in Appendix 4 of this report are included in the operations EMP**

2) **the Department of Environment and Resource Management (DERM), the Department of Transport and Main Roads (DTMR) and Queensland Primary Industries and Fisheries (QPIF) support the operations EMP for the project.**

The proponent must submit with the operations EMP a report detailing any consultation activities and evidence of the agencies' support.

The Coordinator-General, through the Department of Infrastructure and Planning (DIP), is the responsible agency for this condition.

7. Management of specific issues

7.1 Introduction

This section outlines the significant environmental impacts identified in the EIS, submissions on the EIS and consultation with advisory agencies and other key stakeholders.

Where appropriate, I have provided comment on these matters to explain the rationale supporting any conclusions that I have reached and, where necessary, I have stated conditions to mitigate any potential adverse impacts of the project that have been identified in the EIS.

7.2 Route and site selection

7.2.1 Overview

The predominant land uses in the project area are grazing and other agricultural uses. The project area is located along and adjacent to:

- predominantly freehold lots, with several leasehold areas, reserves, and state land located adjacent to the corridor
- infrastructure including roads, rail lines, powerlines, gas pipelines and a fibre optic line
- dams, pondage banks, fences and gates
- the Yarwun key resource area (KRA) — a regionally important quarry
- construction industries
- several areas of land where exploration permits for minerals are held
- the racecourse reserve at Raglan.

7.2.2 Issues of concern to landholders

Location of the proposed WTP site

A member of the public who made a submission on the EIS ('private submitter') raised an objection to the location of the proposed WTP site. The submitter stated that the location of the WTP at a point close to the inlet to the pipeline from the Fitzroy River is not necessary and the WTP could be located at a number of other locations to the south of the WTP and within the pipeline corridor, which would have less impact on grazing lands and grazing operations.

The submitter also disagreed with GAWB's statement that the location of the WTP close to the Fitzroy River will reduce the amount of cleaning of the pipeline. The submitter noted advice received from representatives from Sunwater (which has an intake in the vicinity) that there has been no additional cleaning of the Sunwater pipeline required by the pumping of water from the Fitzroy River direct to the Stanwell power station without the water being treated at a WTP similar to that proposed by GAWB.

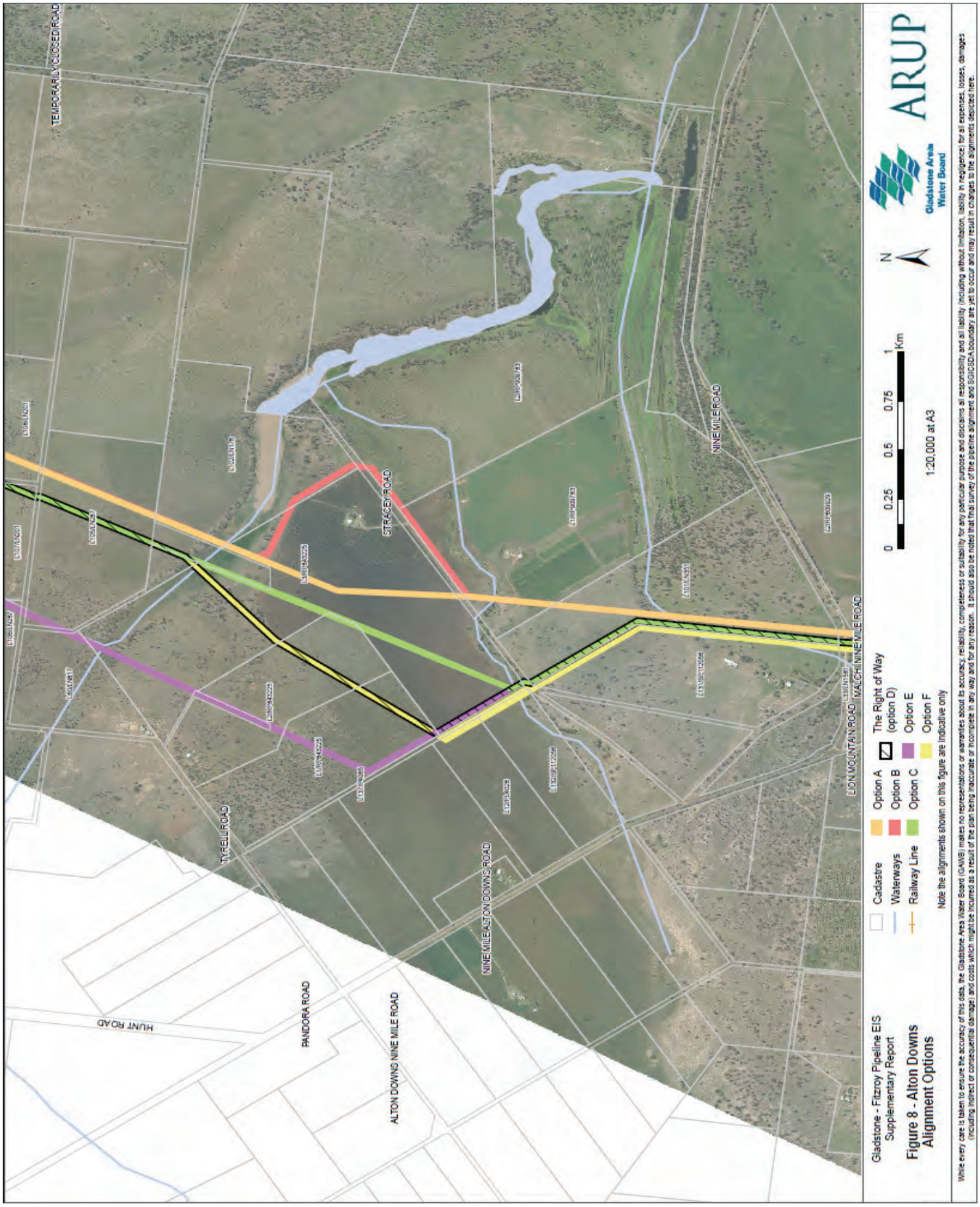
Size of the proposed WTP site

One private submitter contends that the footprint on which the Alton Downs WTP is to be constructed is larger than necessary for the reasonable operation of the WTP. The submitter queries the design of particular aspects of the WTP, such as the provision of space within the WTP for the future inclusion of sand filters, the distance between structures, and the use of a curved road for access to the WTP.

Northern pipeline

Three private submitters raised concerns about the proposed route alignment in the Stracey Road/Tyrell Road area of Alton Downs. Pipeline route options considered are shown in Figure 3.

Figure 3: Alton Downs route alignment options



Two private submitters also raised concerns about disruption and damage to their properties — in particular, the need for up to 12m wide trenching for the pipeline and the potential for related subsidence post-construction.

One private submitter recommended that, during construction, a system should be employed whereby the trench is backfilled in part to allow access of livestock to any areas otherwise severed by the open trench, thereby minimising adverse impacts on the grazing of livestock on land during construction.

7.2.3 Proponent's response

Location of the WTP site

WTP options in the region upstream of the Fitzroy barrage (including at Alton Downs) were considered in 2007 during the initial stages of development of the EIS. The following four areas were identified as potential sites for the WTP:

- the Glenmore WTP
- the area around Gracemere (two sites were considered – one at Kenrol and one at Scubby Creek)
- the Pink Lily area west of Rockhampton
- the Laurel Bank/Alton Downs area (near the existing Sunwater pump station).

GAWB conducted a closer investigation of the above possible sites in mid-2007, including a site visit and a more detailed desktop study. The desktop study included the consideration of the advantages and disadvantages of the sites and informed a quantitative assessment of the risks using weighted criteria.

GAWB found that the disadvantages and risks associated with the Glenmore WTP and Pink Lily options were more significant that the other options and these sites were therefore not considered further. The Kenrol, Scrubby Creek and Laurel Bank/Alton Downs options were found to have similar risk-based scores and therefore further investigation was required to differentiate between the sites.

An investigation into augmenting power supplies to each site revealed that it would require significantly more time and cost to supply power to either Kenrol or Scrubby Creek than to Laurel Bank/Alton Downs. The Laurel Bank/Alton Downs area was therefore selected for further detailed WTP site investigations, which considered a total of 19 potentially suitable sites.

GAWB states that the assessment of WTP site options used a range of criteria and also considered the input from landowners during the property scale investigations. Siting the WTP in close proximity to the intake was only one of the criteria used to select the final Alton Downs site. Other criteria used in the selection of the WTP site included, but were not limited to:

- the site being above the Q100[4] flood level
- the size of the site
- the slope of the land
- environmental considerations (e.g. the presence of regional ecosystems or wetlands).

In response to submissions made on the EIS on this issue, the SEIS identified that siting the WTP in close proximity to the intake has the advantage that it significantly reduces operational costs by reducing the need for pipe cleaning. Whilst Sunwater is able to transport water to the Stanwell energy park without treating the water, the SEIS notes that this requires pipe cleaning once or twice a year. Also, the provision of power to the site was found to be far more cost effective due to the existing power supply to the Sunwater site. Siting the WTP further from the intake would be further from the power supply substation and would require a longer power supply line, resulting in a significant cost increase.

[4] A one in 100 year flood event.

Size of the proposed WTP site

Section 4.22 of the SEIS reports that the design of the Alton Downs WTP was aimed at finding a solution that was cost effective, would provide operational flexibility, facilitate future expansion (within the site) and meet the required service life. Without flexibility, future increases in water demands could potentially require major upgrading of the plant or acquisition of more land for an alternative WTP.

Specifically, the SEIS states that the proposed footprint of the WTP is necessary for the following reasons:

- the design of the WTP allows for the duplication of the screening facility, clarifier and residue tanks for the future flexibility of the plant
- space within the WTP site for sand filters will enable future upgrades to improve water quality from the plant
- the proposed road layout at the WTP site has been designed to facilitate truck movements in accordance with several design requirements (such as noise and safety concerns) whilst minimising land requirements
- structures have been located with at least a 10m clear distance between them to aid construction, reduce work safety risks and allow for the alignment of various interconnecting pipelines required for the WTP
- the south-east corner of the site cannot be truncated as it would prevent the proposed planting of the vegetation screen of the southern side of the WTP and would add to the complexity and cost of management of storm water drainage.

GAWB notes that further discussions have been held with the private submitter regarding their request for a straight alignment of the access to the WTP from Rockhampton Ridgelands Road. Subject to obtaining necessary approvals, GAWB is seeking to acquire a strip of land adjacent to the Alton Downs WTP site for the access track. If such approvals are unable to be obtained, GAWB proposes an alternative alignment which would run parallel to property boundaries so reducing the area of land required.

Northern pipeline route

GAWB reports that the selection of pipeline route options in the Alton Downs area was an iterative and consultative process taking into account a range of factors, including landholder concerns, environmental issues, and engineering feasibility. The route was also dependant on the selection of the WTP site, and was therefore modified when the final WTP site was selected.

Table 5 provides a summary of the options considered during the process of route selection. Not all of these options were under consideration at the same time, but rather were identified at different times to address issues raised.

Table 5: Pipeline route options through Alton Downs

Route option	Description	Length (km)	Date identified	Reasons for the identification of the option	Reasons for the dismissal of the option
A	East side of Powerlink (direct)	14.41	June 2007	• This original route was selected considering constructability, property impacts, length of route and environmental considerations (wetlands and remnant vegetation) • Length of route (most direct route between the Fitzroy River intake pump station and the SGIC) • Located adjacent to existing Powerlink and Sunwater easements where possible to prevent additional severance impacts to landowners	• This option was modified as a result of the change to the WTP site and due to consultation with landowners including impacts to irrigated crops • Impacts on irrigated crops
B	East side of Powerlink (deviation)	14.95	20 May 2008	• To deviate around irrigated crops (responding to landowner concerns raised during consultation about option A)	• The change in the WTP site resulted in a change in the alignment to the west of the Powerlink easement • Objection by one landowner who considered he was more severely affected by this route as it impacted on areas close to potential house site
C	West side of Powerlink easement (direct)	14.79	June 2008	• Length of route (most direct route on west side of Powerlink easement	• Adverse impacts on the irrigated crop
D	West side of Powerlink easement (deviation). This is the proposed route	15.16	June 2008 (October 2008 – selected as preferred)	• To avoid irrigated crop on Lot 3 RP843225 which involves long runs of irrigation line, leucaena crop and fencing • Grazing land is likely to more quickly recover from pipeline construction than leucaena crop field • Newly affected properties under option D similar in size and character to other rural properties along the corridor	• Not applicable – Option D is the preferred route.
E	East side of Sunwater route (would follow the Sunwater easement from WTP)	15.26	June 2008	• Co-location with both the Sunwater easement and Powerlink easements were considered to reduce impacts to properties.	• Would require consultation with eight new landowners (compared with three for Option D) • Additional investigation required of the physical and environmental constraints of the route • Route alignment would not offer appreciable benefits that justified assessing this route • Impractical
F	West side of Powerlink easement (deviation in the south-west)	15.03	August 2008	• Suggested by landowner to minimise impacts to property affected by Option D	• Impact to three new properties • Manageable impacts from preferred option D, therefore not justifying the change • Aboriginal cultural heritage site (scar tree) may be located on this route

In October 2008 GAWB selected the proposed route alignment (Option D – see Figure 3) as its preferred route, for the following reasons:

- grazing land was assessed as being likely to more quickly recover from the trenching associated with constructing a pipeline than a leucaena crop field, as pasture grasses mature faster than revegetation of leucaena
- as specified in the Land Use and Infrastructure Control Plan contained within the planning EMP (Appendix F of the SEIS), impacts upon grazing land will be mitigated through rehabilitation of the pipeline easement to ensure that the area is promptly revegetated with grasses. This will enable grazing activities to continue as soon as possible following construction
- the affected properties are similar in size and character to other rural properties along the corridor and the impacts are expected to be similar
- there are additional construction costs to build an additional 375m of pipeline. However the compensation cost is likely to be less than for a direct route as the impact on the irrigated crop is reduced.

To minimise impacts to grazing land, GAWB has committed to minimising the width and depth of the pipeline trench whilst still having due regard to construction safety and workability. GAWB anticipates that the trench will generally be 2m deep and will vary from 1.7 to 8m in width, but for the majority of the pipeline, will be around 5m in width.

Rehabilitation will include backfilling and suitable measures to prevent subsidence, such as compaction. This will include monitoring and the re-instatement of any subsidence along the ROW and other associated works. Landowners will also be able to contact GAWB in the event that subsidence occurs on their land, with GAWB required to address issues raised.

7.2.4 Coordinator-General's conclusions

Location of the WTP site

I note that GAWB has conducted a thorough options analysis into appropriate sites for the WTP. This has included the consideration of a number of different options at a regional and local scale, including the detailed assessment of 19 potentially suitable sites within the Laurel Bank/Alton Downs area.

I note that discussions were held with a number of landowners in the area where land was under consideration for a WTP, and that the proposed WTP site was the subject of a public meeting held on 26 June 2008. I understand that the preferred WTP site at Alton Downs, approximately 3 km from the proposed intake, was selected on the basis of this process.

I accept that by locating the WTP in proximity to the Fitzroy River intake, the proposed site will result in a reduction in construction and operation costs by utilising the existing power supply to the Sunwater site, and a reduction in operational costs by reducing the need for pipe cleaning.

On balance, I therefore determine that the site selected at Alton Downs for the WTP is the preferred option.

Size of the proposed WTP site

I note that GAWB has explored several design options for the Alton Downs WTP which involved the consideration of a number of issues including cost effectiveness and future expansion of the site. I accept GAWB's reasons for the proposed footprint of the WTP and I find that the current size of the WTP is necessary, in particular for ensuring that future increases in water demand can be met.

I acknowledge the subsequent discussions held between GAWB and the private submitter regarding the request for a straight alignment of the WTP access, and I accept GAWB's proposed changes in response to the submission.

Northern pipeline

I acknowledge that the pipeline route selection is a matter of concern to potentially affected local landholders. GAWB has conducted a consultative options analysis for the selection of the pipeline route in the Alton Downs area, including the consideration of landholder concerns, environmental issues and engineering feasibility.

I have considered the private submissions and information provided by GAWB and I find that the landholder consultation process undertaken to identify the proposed pipeline route is both satisfactory and appropriate.

I accept that by deviating around irrigated crop land, the proposed route alignment will avoid adverse impacts on irrigation operations and the longer remediation time that may be required when compared to grazing lands.

To minimise impacts to grazing land, I note GAWB's commitment to minimise the width of the majority of the pipeline trench to 5m, and to the rehabilitation of the pipeline easement including backfilling and compaction to prevent subsidence and the prompt revegetation of the easement with grasses.

Given GAWB's rehabilitation commitments, and that 350m of pipeline is expected to be completed per day per work crew with two work crews operating concurrently, I find that impacts to grazing land will be of a short-term and temporary nature.

On balance, I therefore support that Option D is the preferred option for the pipeline route through the Alton Downs area.

7.3 Air quality during construction and operation

7.3.1 Issues of concern

Dust from Ski Gardens Road

Two private submitters raised specific concerns about dust and air pollution from the use of Ski Gardens Road in its current ungraded form, with both submitters asserting that the road will need upgrading to bitumen.

Ski Gardens Road is a gravel road that is approximately 5m wide. It provides access to a number of rural residences and farmland lots, as well as the Sunwater compound and the local ski club.

There are four residential properties located adjacent to Ski Gardens Road, with the closest property being located approximately 80m from Ski Gardens Road and approximately 50m from the ROW.

During construction, Ski Gardens Road will be used as an access road for:

- the centralised stockpile storage of all pipe valves and fittings at the Fitzroy River intake station (this is an assumed location for the purposes of the EIS, with the actual locations subject to negotiations based on landowner consultation and approval requirements)
- the construction of the Fitzroy River intake and sections of pipeline.

Table 6 presents a summary of the EIS estimates for likely construction traffic generation on Ski Gardens Road (excerpt from Table 13.18 of the EIS).

Table 6: Summary of construction traffic generation for Ski Gardens Road [5]

Maximum duration (weeks)	Construction personnel (light vehicles) per day	Materials delivery (heavy vehicles) per day	Peak total vehicles trips per day
35	42	110	152

During operations, a low level of operational traffic will use Ski Gardens Road for access to the intake. This is expected to consist of approximately one to two vehicles per week and one maintenance truck per month. Occasional access by an articulated truck (up to 19m in length) may be required for maintenance purposes. Access to the pipeline around Ski Gardens Road may also be required for pipeline maintenance purposes, however this is expected to result in a very low level of traffic.

Odour from Alton Downs WTP

One private submitter raised concerns about the potential for odour to be generated during the operation of the Alton Downs WTP. The submitter notes that whilst the EIS acknowledges that the generation of odours from the WTP is unlikely, GAWB is not able to state with certainty that odours will not emanate from the WTP, and the submitter contended that they should be entitled to a higher level of certainty.

7.3.2 Proponent's response

Dust from Ski Gardens Road

GAWB has not proposed to upgrade the Ski Gardens Road as the road is stated to be of a standard that is suitable for its predicted use during construction and operation.

The planning EMP (Appendix F of the SEIS) sets out GAWB's detailed management approach for controlling dust generated during construction. Key mitigation measures include (but are not limited to) — informing landowners likely to be directly affected prior to the commencement of activities that could potentially generate dust; implementing dust mitigation measures where wind speed is excessive and work is undertaken within 100m of sensitive receptors (e.g. residences); dampening access tracks where necessary; and storing, handling and transporting dusty materials appropriately.

If dust suppression methods fail to adequately prevent or suppress nuisance dust resulting in unacceptable impacts, GAWB has committed to suspending construction activities until conditions generating dust have subsided.

Odour from Alton Downs WTP

GAWB states that whilst it cannot provide a guarantee of no odour impacts from the Alton Downs WTP, odour impacts are considered unlikely for the following reasons:

- the Alton Downs WTP has been designed to reduce the risk of odour and the plant will be operated to prevent anaerobic conditions developing in the water treatment process, minimising the potential for odour to be generated
- the prevailing direction of strong winds in the Rockhampton area is easterly and the nearest residences to the west of the Alton Downs WTP are more than 500m away
- the closest sensitive receptor (residential) is located approximately 175m from the boundary of the Alton Downs WTP, providing some distance over which any odours from the WTP would dissipate.

[5] The EIS notes that this summary presents a worst-case analysis and that the duration of construction shown is the maximum duration considering the various elements of the project. This does not necessarily mean that the peak total vehicles will impact a section of road for the full duration shown.

In the event that odour develops during any of the WTP processes, GAWB has committed to undertaken regular checks to identify the source of the odour and implementing additional measures to manage the impact.

7.3.3 Coordinator-General's conclusions

Dust from Ski Gardens Road

I acknowledge that the generation of dust is a matter of concern to landholders in proximity to the project site.

I note GAWB's commitment to prepare and implement an air environment plan for the construction and operation of the project. The air environment plan will aim to minimise the air quality impacts arising from the project, with a particular focus on dust generation caused by construction activities. The project's planning EMP (Appendix F of the SEIS) also contains key mitigation measures to reduce dust generated by traffic and other works, such as pipeline trench excavation, during both the construction and operations phases of the project.

I also note GAWB's commitment to the preparation of traffic management plans (TMPs) prior to construction to address dust nuisance and other issues that have been identified in the EIS and from landholder submissions.

Nonetheless, I find that even with mitigation measures in place, the intensive use of the ungraded Ski Gardens Road during the construction of the project (involving up to 152 vehicle trips per day over a 35[6] week period) will have the potential to create dust nuisance to nearby residences.

I have therefore stated a condition (condition 3, Appendix 2) requiring the bitumen sealing of Ski Gardens Road from Laurel Bank Road to the proposed Fitzroy River Intake site. This bitumen sealing should be of a standard which provides a pavement life suitable for permanent light traffic after the pipeline construction is completed, and is be handed over to RRC in this condition after construction.

Odour from Alton Downs WTP

I note that the Alton Downs WTP has been designed to reduce the risk of odour and I accept the findings of the EIS that odour impacts resulting from the operation of the WTP are considered to be unlikely.

I also note that as the closest sensitive receptor is located approximately 175m south from the boundary of the Alton Downs WTP, this receptor is unlikely to be affected by the prevailing easterly winds which would have the potential to carry odours that could arise from the operation of the WTP.

Nonetheless, I accept that there is a risk that odours may develop as a result of anaerobic conditions during the water treatment process. To address the potential odour and other air quality impacts resulting from the construction and operation of the Alton Downs WTP, DERM has provided conditions A1 to A5 at Appendix 3 requiring the proponent to:

- prevent the release of noxious or offensive odours beyond the boundaries of the WTP
- prevent the release of dust and/or particulate matter from the WTP which would cause an environmental nuisance at any nuisance sensitive or commercial place
- perform general dust control measures.

Air quality criteria for dust deposition and particulates criteria have been included in the draft development approval condition A3 provided by DERM for the Alton Downs WTP. These conditions are included in the draft development approval contained in Appendix 3 of this report.

[6] maximum

7.4 Noise and vibration

Potential noise and vibration sources were identified by the proponent and noise monitoring was conducted during August 2007 at potential noise sensitive locations (e.g. residences) along the proposed project route. The prescribed noise limits in Queensland are outlined in the *Environment Protection (Noise) Policy 1997*, however the EIS notes that the *Ecoaccess: Planning for Noise Control Guideline* (2004) was used for the project as it is more specific to planning for noise control-related industrial developments.

7.4.1 Issues of concern

Noise from truck movements during construction

One private submitter raised concerns about truck noise in the vicinity of Laurel Bank Road and Ski Gardens road during construction of the project.

The EIS reports that measured noise levels in the Laurel Bank area are relatively low and the background noise can be described as typical for a rural setting.

It is estimated that up to a maximum of 16 heavy vehicles per day will use Laurel Bank Road and Ski Gardens Road to deliver construction materials to the intake for a period of 35 weeks. These construction materials are to comprise steelwork for the coffer dam, formwork and reinforcing steel.

In addition, during construction of the pipeline in the area around these two roads, it is estimated that over a 3.8 week construction period, an additional maximum of 40 loads (80 heavy vehicle movements) of pipe materials will traverse these roads.

Noise from truck movements during operation of the WTP

The Capricorn Conservation Council in its submission on the EIS raised concerns that the traffic generated to dispose of the Alton Downs WTP residue during operation poses a risk to nearby residents due to noise and traffic flow.

The Alton Downs WTP will be located approximately 33km from the Fitzroy River intake and approximately 175m from the nearest residence. It will be accessed from a newly formed access off Rockhampton Ridgelands Road. Rockhampton Ridgelands Road is a sealed, two-lane state controlled road, with a speed limit of 100km/hr except for the 33km section near Rockhampton where it reduces to 60km/hr.

GAWB anticipates that during operation of the WTP, waste residue will be transported by 14 truck trips per day to an approved local government landfill nearby or supplied to a local contractor in a similar proximity. The route to the site from the WTP will be along Rockhampton Ridgelands Road, Campbell Street, Bruce Highway (Albert Street to Capricorn Highway), and the Capricorn Highway towards Gracemere.

7.4.2 Proponent's response

As previously discussed, before project construction and operation, GAWB has committed to the preparation of construction and operation traffic management plans. These plans will take into consideration the relevant local public issues, such as management of noise and traffic risks. This will include truck noise in the vicinity of Laurel Bank Road and Ski Gardens Road during construction of the project, and truck noise resulting from the disposal of waste residue during the operation of the WTP.

GAWB has committed to managing the construction and operation of the pipeline in a way that minimises the impact of noise on the local community, and controlling noise generation to within the relevant noise standards, through the preparation and implementation of the construction and operations EMPs.

In particular, the following noise mitigation measures, as specified within the planning EMP (Appendix F of the SEIS), will be implemented by GAWB:

- management of construction activities to prevent audible noise at the nearest noise sensitive receptor on a business day or Saturday before 6.30am or after 6.30pm, or on any other day at any time
- monitoring of noise will be undertaken for construction activities that are expected to generate significant noise and/or vibration (e.g. blasting and work outside regulated work hours)
- residents will be kept informed about when they may be affected by the works, and the duration of the works
- the 1800 (free call) number for the project will remain active throughout the construction phase so that residents have an immediate point of contact when they have questions or concerns.

With respect to truck noise from the operation of the Alton Downs WTP, the EIS provides a road safety and traffic flow study was undertaken on Rockhampton Ridgelands Road (the road used for the Alton Downs WTP access) to determine the impacts during the operations phase. This was part of a detailed transport study undertaken as part of the EIS, which considered the traffic generation from construction and operation of the project and the impacts to local, regional and state roads.

In accordance with DTMR's requirements, the extent of impact caused by the project on the state-controlled road network has been determined by calculating the percentage of traffic increase caused by the project. The EIS confirms DTMR advice that it is generally accepted that impacts within five per cent are considered acceptable and do not require further consideration.

GAWB reports that the assessment of 14 trips per day on the Rockhampton Ridgelands Road during operation of the Alton Downs WTP represents less than a one per cent increase on the existing traffic loads and is therefore considered to be a negligible impact, which is defined as being 'no apparent delays or no reduction of average vehicle speeds and no decrease in safety to road users' in the EIS.

7.4.3 Coordinator-General's conclusions

I acknowledge that GAWB has committed to the preparation of traffic management plans (TMPs) prior to construction to address noise management and other issues that have been identified through the EIS and from landowner submissions and I have set a condition elsewhere in this report for the preparation, review and implementation of TMPs for various elements of the project (Condition 4, Appendices 1, 2).

I find that the intensive use of the ungraded Ski Gardens Road during the construction of the project (involving up to 152 vehicle trips per day over a 35[7] week period) will have the potential to create nuisance to nearby residential receptors. I have required elsewhere (Condition 3, Appendix 2) that Ski Gardens Road be sealed to reduce dust generation, and in this way also reduce traffic noise somewhat by improving the road surface, and also largely eliminating noise from the use of additional water trucks.

I accept GAWB's assessment that predicted traffic increase resulting from the disposal of waste residue during the operation of the Alton Downs WTP will be minor in relation to existing traffic levels, and I find that, as a consequence, will not adversely impact existing noise and vibration levels.

I am satisfied that through the development and implementation of the planning EMP, and the application of conditions N1 to N4 recommended by DERM and contained in Appendix 3, the proponent will either avoid noise and vibration impacts or mitigate such impacts so that they do not cause a noise and vibration nuisance to residences in the vicinity.

[7] maximum

7.5 Transport and traffic

7.5.1 Road impacts of significance

Construction

The project elements likely to generate traffic during construction include the Fitzroy River intake, Alton Downs WTP, Raglan pump station, Aldoga reservoir and works associated with the pipeline. As previously discussed, the generation of construction traffic will create a short-term increase in traffic volumes on the road network during the construction period. The EIS notes that the duration of this impact ranges from a few weeks to up to 16 months, depending on the road section under consideration. The construction of the pipeline will also require the crossing of road and rail corridors, which may result in disruption to traffic if surface construction methods are used for the pipeline.

One private submitter has raised various road safety concerns during construction, including potential impacts to the line of sight, school bus occupants and to horse riders.

Operation

During operation, the only element of the project that will generate regular traffic flows will be the Alton Downs WTP. As described in section 7.5.1, this will involve the transportation of waste residue by 14 truck trips per day to an approved local government landfill nearby or supplied to a local contractor. The route to the site from the WTP will be along Rockhampton Ridgelands Road, Campbell Street, Bruce Highway (Albert Street to Capricorn Highway), and the Capricorn Highway towards Gracemere.

Road infrastructure upgrades

Laurel Bank Road, which will provide access to the Fitzroy River intake and a short section of the pipeline corridor, is currently single lane bitumen for the first 2.3 km of its length from Rockhampton Ridgelands Road. Without appropriate mitigation measures, this section of the road is considered too narrow to allow acceptable traffic operation during the construction of the intake.

As indicated in section 7.4, two private submitters have raised specific concerns about the use of Ski Gardens Road in its current ungraded form, with both submitters asserting that the road will need upgrading to bitumen. One private submitter has also raised concerns about the widening of roads (specifically Laurel Bank Road and Ski Gardens Road) posing problems for numerous landowners who have underground water pipelines along the length of these roads.

Intersections in the project area were assessed in the EIS in line with the projected increases in traffic in relation to sight distances, need for turning lanes and condition of road surface. Without appropriate mitigation measures, the EIS indicates that the following intersections would have inadequate conditions to facilitate the construction of the project:

- Rockhampton Ridgelands Road/Laurel Bank Road intersection
- Capricorn Highway and Service Road intersection
- Bruce Highway/Roope Road intersection
- Bruce Highway/Casuarina Road intersection.

7.5.2 Proponent's response

Construction

Calculations undertaken as part of the EIS of potential maximum traffic flows and distribution on the road network shows that increases in traffic volumes during the construction period are relatively low and could be absorbed by the road network without undue road capacity problems.

With regards to pipeline construction, for roads which carry relatively low traffic volumes such as most local roads, GAWB proposes to use trenching methods to lay the pipeline. GAWB notes that this would cause some minor delays to the local traffic.

For other regionally significant roads, specifically the Bruce Highway and the Capricorn Highway, GAWB proposes to use a trenchless crossing method such as thrust boring. This method would result in limited disruption to traffic on these roads. GAWB has also committed to using trenchless methods for all railway line crossings, thus resulting in no disruption to rail services.

As stated in the planning EMP (Appendix F of the SEIS) and within Commitment C15 (Appendix 4 of this report), a TMP for relevant areas of the project will be developed to manage issues, including road safety, relating to construction and operational traffic prior to the commencement of works. The TMP will detail:

- the use of site accesses, including the provision of signage and traffic control during construction at site accesses and pipeline crossings
- temporary speed reductions as required at site accesses or on unsealed roads in the vicinity of sensitive receptors such as school bus routes
- temporary traffic control measures
- options for carpooling or use of buses by construction personnel to reduce traffic generation resulting from the project.

The TMP will incorporate requirements for all permits and approvals required under the *Transport Infrastructure Act 1994*, including approval for works within a state controlled road corridor and approval for works within a railway corridor.

The TMP will also address the maintenance of roads (particularly unsealed roads) during construction including traffic management measures or possible road/intersection improvements to enable safe access during construction of the project. As part of the TMP, GAWB has also committed to the rehabilitation of all temporary access roads and other areas of disturbance resulting from the construction of the pipeline to a state equivalent to or better than the pre-construction state (unless otherwise agreed with the landowner or relevant authority).

Operation

As indicated in section 7.5.2, GAWB reports that the assessment of 14 trips per day on Rockhampton Ridgelands Road during operation of the Alton Downs WTP represents less than a one percent increase on the existing traffic loads and is therefore considered to be a negligible impact, which is defined as being 'no apparent delays or no reduction of average vehicle speeds and no decrease in safety to road users' in the EIS. Other operational traffic will consist of only occasional access required for maintenance purposes.

Road infrastructure upgrades

GAWB has committed to widen the first 2.3 km section of Laurel Bank Road (from Rockhampton Ridgelands Road) so that it would be of a similar standard as the remaining wider section to Ski Gardens Road. This would allow opposing vehicles to pass each other without pulling over onto the gravel shoulder.

As conditioned by me in this report, Ski Gardens Road will be upgraded by the proponent in order to mitigate the impacts of project traffic.

GAWB has committed to discussing the potential impact of widening Laurel Bank Road over existing underground water pipes with the relevant landholders so that the impacts to this existing infrastructure can be avoided or minimised.

In addition to the upgrade of Laurel Bank Road, GAWB has committed to undertake road/intersection improvements at the following locations:

- Laurel Bank Road/Rockhampton Ridgelands Road intersection — upgrading to a basic right turn (BAR) treatment. During this phase a TMP will be implemented,

which would require a reduction in the speed limit to 80 km/h, advanced heavy vehicle turning warning signs, and general access construction warnings

- Rockhampton Ridgelands Road — the newly formed direct access for the Alton Downs WTP which is proposed to be constructed will require a BAR treatment to be implemented.

GAWB proposes to mitigate impacts at the Bruce Highway/Roope Road, Bruce Highway/Casuarina Road and Capricorn Highway/Service Road intersections via an appropriate TMP.

New accesses to the project from the road network will also be provided from several local roads as well as four points on state controlled roads. The state controlled roads that will be affected by new direct accesses include:

- Rockhampton Ridgelands Road – Alton Downs WTP
- Rockhampton Ridgelands Road – pipeline
- Bajool Port Alma Road – pipeline
- Gladstone Mt Larcom Road – pipeline.

These will be temporary accesses for construction traffic, then permanent accesses for occasional operational traffic.

7.5.3 Coordinator-General's conclusions

I accept that the assessment undertaken as part of the EIS finds the impact of project-related traffic on road safety and efficiency during construction and operation is not expected to be great. Nevertheless, I find that GAWB must undertake a road management plan to ensure proposals mitigate impacts by various means including infrastructure upgrades. If necessary, any infrastructure contributions may be developed for incorporation in an infrastructure agreement.

I acknowledge GAWB's commitment to develop TMPs during the detailed design phase to address site specific details for each element of the project. These plans will specify management of site accesses, including the provision of signage and traffic control during construction at site accesses and pipeline road and rail crossings. I also note GAWB's commitment to maintain (through a contractor) unsealed roads likely to be used to access the project during construction.

To ensure that transport related impacts associated with the construction and operation of the project are appropriately planned for and managed, I state the following conditions:

Condition 2

State-controlled roads

Within 90 business days of appointing a construction contractor for the project, and prior to the commencement of any significant construction works on the project, the proponent shall:

a) **prepare a road-use management plan (RMP) for all use of state-controlled and other roads for each phase of the project, developed from the transport and access control plan contained within the planning EMP. The RMP will detail traffic volumes, proposed transport routes, required road infrastructure maintenance and/or upgrades to mitigate road impacts, any necessary conditions about access/connection to public roads, transport scheduling, dust control and road safety. DTMR must approve the plan prior to implementation**

b) **enter into a road infrastructure agreement with DTMR to formalise contributions towards any necessary road maintenance and upgrades identified in the finalised RMP to ameliorate any adverse impacts of the road**

use by the project on the assets of DTMR. This shall include the proposed upgrade of Rockhampton Ridgelands Road (to provide direct access for the Alton Downs WTP) and the Laurel Banks Road/Rockhampton Ridgelands Road intersection.

If an infrastructure agreement between the proponent and DTMR is not concluded within six months of the submission of the road use management plan, either party may refer the matter to the Coordinator-General.

DTMR is the agency responsible for monitoring compliance with this condition.

Condition 3

Council-controlled roads

Within 90 business days of appointing a construction contractor for the project, and prior to the commencement of any significant construction works on the project, the proponent shall:

a) prepare road-use management plans (RMPs) for all use of RRC and GRC-controlled roads for each phase of the project, developed from the transport and access control plan contained within the planning environmental management plan. The respective RMP will detail traffic volumes, proposed transport routes, required road infrastructure maintenance and/or upgrades to mitigate road impacts, any necessary conditions about access/connection to public roads, transport scheduling, dust control and road safety. RRC or GRC must approve the respective plan prior to implementation

b) enter into road infrastructure agreements with RRC and/or GRC to formalise contributions towards any necessary road maintenance and upgrades identified in the finalised RMPs to ameliorate any adverse impacts of the road use by the project on the assets of RRC and GRC.

   This shall include the following actions, which are to be implemented prior to construction in the area commencing:

   - the proposed upgrade of a 2.3 kilometre section of Laurel Bank Road
   - bitumen sealing of Ski Gardens Road from Laurel Bank Road to the proposed Fitzroy River Intake site. This bitumen sealing should be of a standard which provides a pavement life suitable for permanent light traffic after the pipeline construction is completed, and be handed over to RRC in this condition.
   - two access points on Rockhampton-Ridgeland Road, one with proposed Basic Access Right (BAR) treatment, and another on Bajool Port Road.

If infrastructure agreements between the proponent and RRC and/or GRC are not concluded within six months of the submission of the road use management plan, either party may refer the matter to the Coordinator-General.

RRC and GRC are the agencies responsible for monitoring compliance with this condition within their respective jurisdictions.

Condition 4

Within 90 business days of appointing a construction contractor for the project, and prior to the commencement of any significant construction works on the project, the proponent shall prepare traffic management plans (TMP) for:

a) **access to all roads**
b) **all pipeline road and rail crossings**
c) **construction of all road infrastructure upgrades**

The proponent shall present the TMPs for review by DTMR, the Queensland Police Service, RRC, GRC and Queensland Rail, and take account of the reviews.

The proposed TMPs shall incorporate a provision that, prior to commencing any program of oversize transport movements that may be required for the construction of the project, the proponent will consult with DTMR, the Queensland Police Service and RRC and/or GRC.

The proponent shall implement the TMPs during construction and commissioning of the project and construction of any access road intersection.

DTMR is the agency responsible for monitoring compliance with this condition.

7.6 Vegetation management

7.6.1 Vegetation clearing requirements

The EIS indicates that approximately 110 km of the pipeline, from the Fitzroy River in the north to Yarwun in the south east of the project area, is located in the Brigalow belt and New England bioregion. The remaining approximately 5 km of the pipeline in the south eastern end of the project area from Yarwun to Gladstone is located within the South East Queensland (SEQ) bioregion.

The pipeline alignment has been designed to avoid or, where this has not been practicable due to factors such as topographic constraints, minimise impacts to areas of remnant vegetation. Therefore, the vast majority of the construction footprint traverses cleared, grazed and highly disturbed environments and avoids as many areas of regrowth native vegetation as possible.

The intended co-location of the majority of the pipeline in infrastructure corridors and in previously cleared or disturbed areas wherever possible will reduce the area required to be cleared.

The EIS identifies that there are 33 sites along the pipeline corridor that will require clearing of remnant vegetation. GAWB estimates that for the approximately 115 km length of the pipeline route, in the vicinity of 22.05 hectares of remnant vegetation will be required to be cleared. Table 7 below provides a summary of the vegetation impacts at the 33 sites.

Of the vegetation to be cleared, approximately 0.36 hectares are listed as ‘endangered’ and 17 hectares listed as ‘of concern’.

Table 7: Project corridor vegetation clearing areas

Vegetation clearing site number	RE label	Approximate area to be cleared (ha)
Areas outside of the SDAs (in RCC area)		
1	11.3.25 / 11.3.27c – *'not of concern'*	0.6963
2	11.3.3 / 11.3.4 – *'of concern'*	2.1742
3	11.3.27 – *'not of concern'*	0.0019
Areas inside the SGIC		
4	11.3.27 – *'not of concern'*	0.2037
5	11.3.25 / 11.3.27 – *'not of concern'*	0.2196
6	11.1.4 – *'not of concern'*	0.2942
7	11.11.16 / 11.3.26 – *'of concern' dominant*	2.3929
8	11.1.2 – *'not of concern'*	0.0045
9	11.1.4 / 11.3.4 – *'of concern' sub dominant*	0.1251
10	11.1.4 / 11.3.4 - *'of concern' sub dominant*	0.3610
11	11.1.4 / 11.3.4 - *'of concern' sub dominant*	0.4113
12	11.3.26 / 11.3.4 - *'of concern' sub dominant*	0.2604
13	11.3.26 / 11.3.4 - *'of concern' sub dominant*	2.5368
Areas inside the GSDA		
14	11.3.26 / 11.3.4 - *'of concern' sub dominant*	0.4221
15	11.11.15 – *not of concern'*	0.6198
16	11.3.26 / 11.11.4 / 11.3.4 – *'of concern' sub dominant*	0.4213
17	11.11.4 / 11.11.15 / 11.11.5 – *not of concern'*	1.4191
18	11.3.26 / 11.11.4 / 11.3.4 – *'of concern' sub dominant*	0.2343
19	11.3.26 / 11.11.4 / 11.3.4 – *'of concern' sub dominant*	0.6655
20	11.11.4 / 11.11.15 / 11.11.5 / 11.11.18 – *endangered sub dominant*	0.3685
21	11.3.25 – *'not of concern'*	0.9583
22	11.3.25 – *'not of concern'*	0.0674
23	11.3.25 – *'not of concern'*	0.2740
24	11.11.4 – *'not of concern'*	0.0001
25	11.3.4 – *'of concern'*	0.1997

Vegetation clearing site number	RE label	Approximate area to be cleared (ha)
(continued)		
26	12.11.6 / 12.11.14 – *'of concern' sub dominant*	3.0019
27	12.11.6 / 12.11.14 – *'of concern' sub dominant*	0.1585
28	12.11.14 – *'of concern'*	1.8428
29	12.11.6 / 12.11.14 – *'of concern' sub dominant*	1.2870
30	11.3.29 – *'not of concern'*	0.2174
31	11.3.29 – *'not of concern'*	0.0083
32	11.3.29 – *'not of concern'*	0.1014
33	12.11.6 / 12.11.14 – *'of concern' sub dominant*	0.1089
	Total area	**22.0592ha**

Given the project as linear infrastructure extends across multiple planning scheme jurisdictions, there are varied requirements under the *Vegetation Management Act 1999* (VMA) that will apply to any clearing of assessable vegetation depending on the particular requirements of each planning scheme. Table 7, above, indicates the location of the vegetation relevant to SDAs and council areas.

For the section of the pipeline in the GSDA, as confirmed by DERM in its submission on the EIS, SPR Schedule 24, Part 2 identifies that for clearing for 'urban purposes' in an 'urban area' on freehold land, clearing of remnant 'of concern' or 'not of concern' regional ecosystems is not assessable development under schedule 3 of the SPR, and therefore a clearing permit for these vegetation classifications is not required.

The land in the GSDA is currently being used for, and is planned for, large scale industrial development. It is considered an 'urban area' as it is shown on the planning scheme for the area as existing for urban purposes. Therefore, DERM has confirmed that clearing for 'urban purposes' in the GSDA does not require an application to be made under the VMA unless the clearing of remnant endangered regional ecosystems is required.

For the SGIC, multiple underground pipelines and associated infrastructure are to be located in the corridor by various proponents, including GAWB.

The infrastructure corridor traverses a number of areas of mapped remnant regional ecosystems as depicted on current certified mapping, including some areas mapped as endangered regrowth.

In order to assess the environmental impacts of the installation of multiple infrastructure projects, an investigation of the nature and displacement of remnant regional ecosystems and their component rare and threatened flora is to be undertaken. DIP, through its state development areas branch, will shortly commence the investigations with a view to producing detailed mapping.

Subject to the results of the mapping, the investigations may be extended to assess vegetation clearing requirements within the SGIC relative to the codes and policies of the VMA and the NC Act.

DIP would subsequently consider gaining any approval required for the clearing of vegetation within the SGIC in the name of the Coordinator-General. It is anticipated that any approval may involve a requirement by proponents for offset areas to be provided for the loss of threatened vegetation.

For areas outside the SDAs, GAWB will make an application to DERM for a permit for the clearing of remnant vegetation. For any clearing of 'endangered' and 'of concern' vegetation, GAWB will be required to establish offset areas for the loss of this vegetation. The nature and extent of the offset areas will be determined in consultation with DERM as a part of obtaining approval for these permits.

In addition to permits required under the VMA, clearing of any native plants for the pipeline will require a permit under the NC Act. Offsets will be required if clearing endangered, vulnerable or rare species and their habitats.

The EIS states that the construction EMP, which will be developed by the contractor prior to commencing construction, will contain the following sub-plans to manage impacts to terrestrial flora:

- site specific erosion and sedimentation control plans
- weed management plan, incorporating weed specific surveys
- vegetation clearing plan
- introduced/pest fauna management plan.

In addition, SAPs will be developed to manage construction works in sensitive areas to provide:

- that no unnecessary clearing of vegetation will be undertaken
- that, as far as reasonably practicable, construction activities will be limited to existing clearings
- that wherever reasonably practicable, damage to the edges of remnant communities will be minimised and erosion controls implemented
- a rehabilitation plan for each sensitive area impacted during construction, and
- development of a revegetation plan for each sensitive area that will experience clearing.

7.6.2 Coordinator-General's conclusions

As discussed in the project commitments at Appendix 4, the vegetation clearing plan will provide that impacted areas are to be rehabilitated to the 'state that was present prior to the project taking place (as close as reasonably practicable)'. I support this undertaking however I believe that a separate control plan of the EMP needs to be prepared to target the management of site rehabilitation and therefore I condition its undertaking with the following requirement.

Condition 5

The project's construction EMP is to include a rehabilitation and revegetation control plan which includes the following measures, to be undertaken progressively as works are staged:

- **recontouring and compaction**
- **topsoil replacement**
- **weed control**
- **erosion protection**
- **revegetation, consistent with surrounding conditions.**

The Coordinator-General, through DIP, is the responsible agency for this condition.

While the final vegetation clearing requirements for the project will be ascertained during detailed design, the estimated impacts on vegetation due to construction and operation of the project are relatively minimal, with approximately 22.05 hectares of remnant vegetation required to be removed along the 115 km pipeline route.

Of this vegetation, approximately 0.36 hectares are listed as 'endangered' and 17 hectares listed as 'of concern'. The proponent will need to determine with DERM the nature and extent of offset areas that will need to be provided for impacts to threatened vegetation in the course of its application for permits to clear remnant vegetation.

While a process is underway in the SGIC that may result in an approval for the clearing of remnant vegetation being held by the Coordinator-General, should the timeframes of this process not align with the project's construction schedule, the proponent will need to seek its operational works permits in the SDA direct with DERM.

I am satisfied that, with the strategies described in the EIS and SEIS and further conditions placed by me throughout this report, the project will be able to successfully manage and mitigate construction impacts to terrestrial and riparian vegetation.

7.7 Waterway crossings and wetlands

7.7.1 Waterway crossings

For waterway crossings, GAWB indicates that 43 minor creeks (ephemeral drainages, being waterways that flow during and immediately after rain events) and nine major creeks are located along the alignment and will require crossing to install the pipeline.

Major creek crossings are those where the waterway has flowing or standing water or significant riparian vegetation which could be adversely impacted by open trenching.

The EIS provides that the minor ephemeral drainages will generally be crossed by open trenching as this method is both cost effective and can be completed quickly, therefore reducing disturbance times.

Agency position
A submission made by QPIF in response to the SEIS provided the recommendation that at a minimum, microtunnelling or thrust boring should be undertaken as the crossing method for Inkerman, Twelve Mile, Horrigan, Raglan and Larcom creeks. It was further recommended that site evaluation of the entry and exit points for microtunnelling or thrust boring include considerations to ensure no impacts to riparian fringes or tidal lands associated with any waterway crossings.

EIS provisions
The EIS confirms that SAPs will be developed and implemented to manage activities at all waterway crossings.

Mitigation measures that GAWB states will be implemented in SAPs at waterway crossings include:

- construction will be undertaken during the dry season where possible to reduce the disturbance to aquatic ecology
- erosion and sediment control and weed management measures will be implemented during construction
- for microtunnelling works, the placement of tunnelling pits outside the riparian vegetation zone
- construction should be undertaken during the dry season (i.e. June to September) wherever possible

- for trenching, confining activities to already cleared or open areas wherever possible
- the sites will be rehabilitated after construction including stabilisation of stream banks and protection of the stream bed to prevent erosion over the pipe
- where there is riparian vegetation, clearing will be minimised by reducing the width of the ROW.

The EIS states that for these crossings an assessment was undertaken by GAWB to determine the most appropriate crossing method, taking into account the following factors:

- whether the waterway is ephemeral or perennial
- presence of riparian vegetation and its ecological value
- aquatic ecology values of the waterway and substrate type
- length of the crossing
- geotechnical considerations
- engineering feasibility
- cost of the crossing.

The nine major crossings, and the crossing method identified by GAWB in the EIS and SEIS are:

- Gavial Creek — microtunnelling
- Inkerman Creek — microtunnelling
- Bob's Creek — microtunnelling
- Horrigan Creek — microtunnelling
- Raglan Creek — microtunnelling
- Lion Creek — open trenching
- Marble Creek — open trenching
- Twelve Mile Creek — open trenching
- Larcom Creek — open trenching.

As discussed above, all of the creeks recommended by QPIF to be constructed with non-trenching methods, with the exception of Larcom and Twelve Mile creeks, will be microtunnelled. Table 13 of the SEIS provides the justification for not microtunnelling in these two locations, being:

Larcom Creek

- investigations found that riparian vegetation ranges from narrow and semi-continuous to patchy and very sparse
- canopy cover on both banks is less than five percent. Banks are highly unstable, due to lack of vegetation and ongoing stock and human usage. Site is surrounded by cleared pasture.

For Twelve Mile Creek, site investigations found:

- the creek is adjacent to known threatened yellow chat habitat
- the area was characterised by sparse and highly fragmented riparian vegetation
- the area was heavily disturbed by cattle
- the area was mostly cleared and not remnant
- both banks were slightly eroding due to lack of riparian vegetation and ongoing bank erosion due to stock usage of the creek.

SAPs will provide mitigation measures for works in Twelve Mile Creek and Larcom Creek, and will include the addition of limiting construction to occur between May and September for Twelve Mile Creek to avoid the yellow chat breeding period. While I have included provision for this in the following condition, as potential yellow chat impacts are a matter of national environmental significance (NES) the matter is also discussed in greater detail in chapter 8.

7.7.2 Coordinator-General conclusions

I support the findings and approaches provided by GAWB within the EIS and SEIS for construction in these sensitive areas.

While the proponent has noted 'construction should be undertaken during the dry season (i.e. June to September) in wetlands and waterways *wherever possible'* [my emphasis], I find, in consideration of advice including that provided by DERM in its submission and further information requested by me, that this needs to be rendered as a clear commitment to undertake works only during the dry season to minimise impacts to these sensitive areas.

I provide the following condition stating that SAPs must be developed and implemented describing the preferred construction method for major crossings in the project area and detailing particular considerations required for each of the areas, relating to matters such as the timing of works and minimising the construction footprint.

Condition 6

Part A

SAPs are to be included in the construction EMP which indicate that microtunnelling is the construction method at the following locations:

1. **Gavial Creek**
2. **Inkerman Creek**
3. **Bob's Creek**
4. **Horrigan Creek**
5. **Raglan Creek.**

The SAPs are to include provision that the tunnel entry and exit pits are to be located outside of the riparian zone for each of the crossings.

Part B

SAPs are to be developed and implemented for inclusion in the construction EMP for works at the following waterway crossings:

1. **Lion Creek**
2. **Larcom Creek.**

These SAPs are to indicate that:

- **where possible, existing riparian vegetation is to be avoided**
- **construction works are to be limited to no greater than 20 metres in width within riparian vegetation and the bed and banks of the crossings**
- **construction works are to be limited to occur between May to September, inclusive.**

Part C

For the following crossings:

1. **Inkerman Creek**

2. **Horrigan Creek**
3. **Raglan Creek**

- **The SAPs are to include provision that construction works are to be limited to occur between May to September, inclusive.**

Part D

For the following creek crossings:

1. **Marble Creek**
2. **Twelve Mile Creek**

SAPs are to be developed and implemented for inclusion in the Construction EMP that include provision for:

- **construction works within riparian vegetation and the bed and banks of the crossings is not to exceed 15 metres in width**
- **construction works are to be limited to occur between May to September, inclusive.**

The Coordinator-General, through DIP, is the responsible agency for this condition.

7.7.3 Tidal lands crossings

Agency position

QPIF noted in its submission on the EIS that under the *Fisheries Act 1994*, the definition of marine plants include plants within tidal lands (that is, below the level of highest astronomical tide). QPIF raised that it would be expected that where feasible, microtunnelling would extend beneath all tidal areas, and not just mangrove fringed waterways. QPIF further noted that any proposal to trench through tidal lands supporting marine plants will require approval from QPIF, and will require significant justification showing why alternative approaches are not feasible.

EIS provisions

The EIS confirms that there are two tidal creeks in the project area, being Inkerman and Raglan creeks. These mangrove-lined creeks provide a range of structurally complex habitats for fish and crustaceans, both of commercial and non-commercial significance. Regional ecosystem (RE) mapping, together with site visits, identified approximately 0.4ha of 'of concern' mangrove forest on Raglan Creek and approximately 1.3ha of 'not of concern' mangrove forest at Inkerman Creek located in the project area.

For both of these creeks, GAWB states in the EIS that microtunnelling has been selected as the preferred crossing method to reduce the impact to tidal lands and to the significant riparian vegetation, such as mangroves.

GAWB, in provision of further information to QPIF subsequent to the SEIS, has provided that microtunnelling across all tidal lands is not possible due to cost and construction feasibility.

The land adjacent to Inkerman and Raglan creeks is low lying; therefore the level of the highest astronomical tide (HAT) extends for some distance from the creek itself. For example at Raglan Creek, the route may traverse over 700m below HAT. Therefore, GAWB states the microtunnelling entry and exit pits for the creek crossings will be within tidal lands. Additionally, some trenching will occur in this area for interment of the pipe up to the microtunnelling point.

For Inkerman Creek which features 'not of concern' mangrove forest and saltbush, approximately 2000m of land is tidal land[8].

GAWB provides that the cost for microtunnelling would be approximately $12 000 per metre as opposed to $1000 per metre for trenching. If all tidal lands were to be microtunnelled, the associated costs of pipeline construction in these areas would increase over ten-fold.

The Planning EMP for the project (Appendix F of the SEIS) details the measures to be undertaken during construction to minimise the impacts associated with these areas including mitigation strategies for mangroves.

QPIF has confirmed that the complexity of mangrove systems is such that restoration in these areas after construction works have taken place is extremely challenging, such that some of GAWB's proposed mitigation strategies would be unlikely to be successful, such as replanting and/or mulching of mangroves.

GAWB will therefore, in the course of obtaining relevant approvals, need to discuss and develop with QPIF its proposed revegetation strategy for marine plants to ensure the success of revegetation is enhanced.

GAWB has acknowledged in the EIS that no vegetation removal of marine plants will occur until relevant approvals have been obtained. As part of the obtaining of approvals, GAWB will need to clarify its mitigation strategies such as revegetation and disposal of cleared material to QPIF's satisfaction.

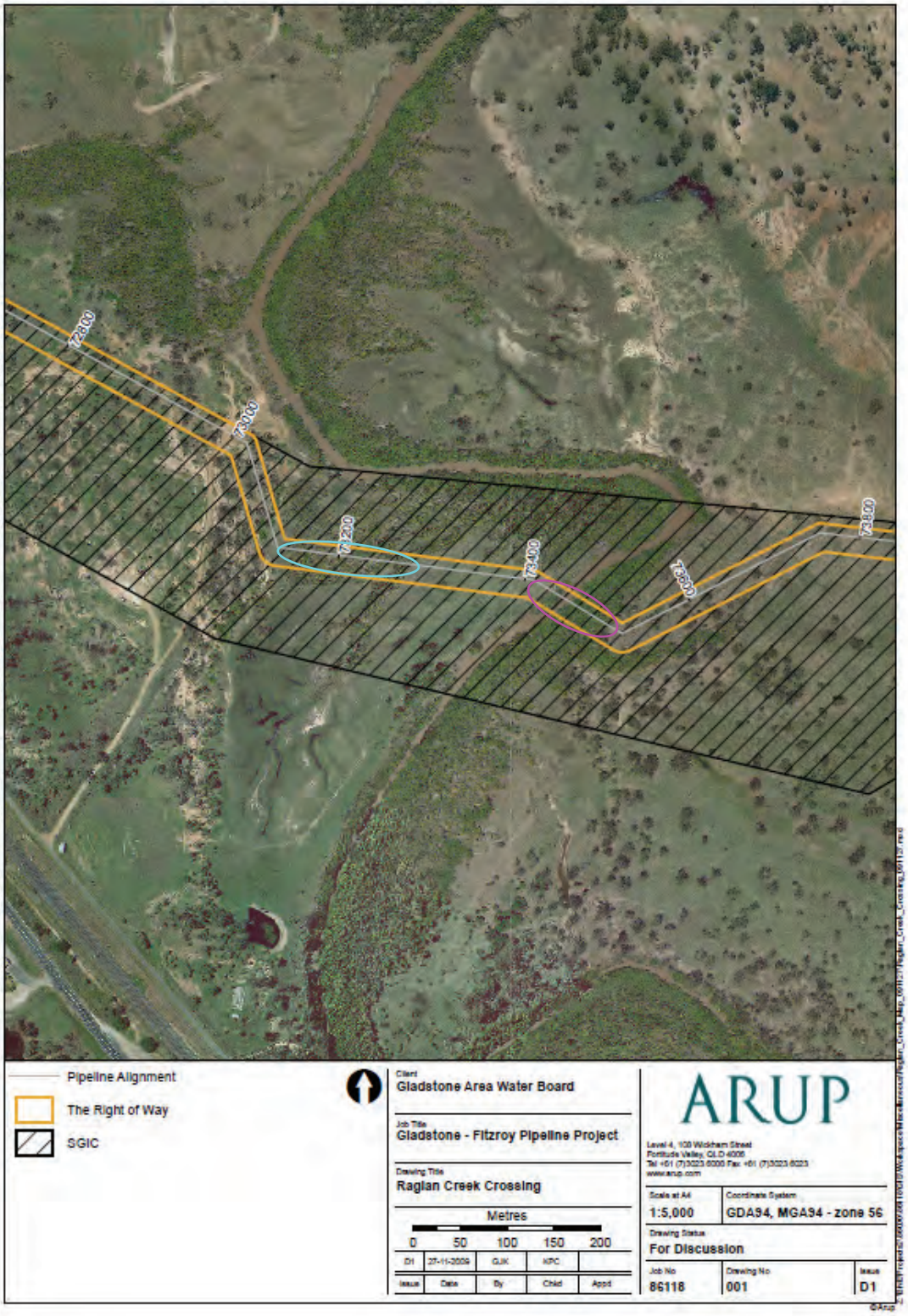
For construction at Raglan Creek, GAWB's intended pipeline route is indicated at Figure 4.

The area circled in blue indicates a section of approximately 150m of RE 11.3.4/11.1.4 'of concern' mangrove forest that GAWB has stated will require clearing for the project's 30 metre ROW. The area circled in pink indicates the area GAWB proposes to microtunnel across Raglan Creek.

In further discussion with QPIF on the matter, at my request GAWB has provided further information, stating that the pipeline's ROW (indicated in orange, with the intended pipeline positioning shown in grey) was chosen in order to minimise impacts to mangroves whilst still allowing sufficient space within the SGIC for other future utilities. Provision has been made by DIP for up to seven pipelines to be located in the SGIC to the south of the mangroves.

[8] GAWB provides that this estimate has been arrived at as according to the definition from QPIF, tidal land is land below HAT which has been calculated to be 3.1m Australian Height Datum (AHD) based on the Semidiurnal Planes data for Port Alma (Maritime Safety Queensland (2009)). Port Alma is 20km east of the corridor. When this level is used as the basis for defining HAT along the corridor, the calculation provides the above estimate.

Figure 4: Proposed crossing route - Raglan Creek



7.7.4 Coordinator-General's conclusions

There is an unavoidable crossing of Raglan Creek and associated mangroves in the area that due to pipeline construction activities, requires disturbance of the mangroves. In order to provide a solution to this, I require further detailed design of both construction activities and mangrove disturbance and regeneration plans to be undertaken by the proponent in consultation with QPIF. It is evident that there would be significant disturbance of sensitive vegetation at Raglan Creek which will be minimised by the proponent's decision to microtunnel under the creek.

While I note that the project works will create a disturbance of the mangroves ecosystem in the tidal area, I am reluctant at this stage to require microtunnelling of the affected 'of concern' vegetation beyond at the creek crossing due to the large cost involved. I find that more evidence is required to judge the balance between cost and benefit of undertaking such works in this area.

I require the proponent to make an application for operational works for disturbance of marine plants in tidal areas and to work with QPIF to minimise disturbances in the area and, if required, provide an offset. If this is unacceptable to both parties then the area may need to be microtunnelled, or a route change negotiated for the corridor through a Coordinator-General's change report process.

I acknowledge the possibility that as part of its future detailed design for the project, GAWB may determine that microtunnelling in this location of mangroves is the preferable option should offsetting impacts to this vegetation be too onerous. I believe that this is a commercial decision for the proponent to make.

Condition 7

Prior to submitting any application for operational works for disturbance of marine plants in the Raglan Creek area, the proponent is to work closely with QPIF to reduce mangrove disturbances and is to develop a SAP for works in mangrove areas for QPIF's consideration.

The approved SAP is to be included in the project's construction and operations EMPs.

The Coordinator-General, through DIP, is the agency responsible for this condition.

7.7.5 Wetlands

In terms of wetland areas located in the project area and in its immediate surroundings, there are two nationally important wetland areas listed under the Directory of Important Wetlands:

- the Fitzroy River floodplain wetlands
- the Fitzroy River delta wetlands.

In a submission made on the SEIS, DERM notes that in reference to construction in wetlands, this should be avoided wherever possible. However if activities in these areas are not able to be avoided, then as the EIS provides, works should be undertaken only during the dry season. For areas through wetlands in the SGIC, and adjacent to yellow chat breeding areas, as conditioned in this report and consistent with the SGIC planning scheme, construction will only occur between May and September.

Figure 8.5 of the EIS details the project's proximity to the nationally important wetlands and indicates that the pipeline corridor fringes the outskirts of these wetlands in two sections of the route.

Further detail on wetlands as defined in the *Regional Vegetation Management Code: Brigalow Belt and New England Tableland Regions* (NRW 2006) and the former EPA's Queensland Wetland Map are indicated in figure 4 of the SEIS. Figure 4 confirms the project route will traverse small areas that are mapped as wetlands on the edge of the Yeppen Floodplain.

While trenching is proposed for construction in the wetlands areas because of their ephemeral nature (and size, in some cases), the EIS provides that implementation of the following mitigation measures will minimise potential impacts:

- when trenching across part of the wetland, topsoil will be stockpiled, and replaced after works to enable ground layer species to re-establish
- wetlands will be restored.

DERM suggested in its submission on the EIS that the EIS's provisions on construction timing in wetlands should accord with provisions in the SGIC development scheme, to remove doubt as to when the construction works will occur.

7.7.6 Coordinator-General's conclusions

I support this recommendation and the mitigation measures indicated above for construction in wetland areas and have made provision in the following condition that these measures be included in the project's EMP. The condition's requirement for the timing of works aligns with provisions in the SGIC development scheme for construction in sensitive areas.

Where these measures are implemented, along with the requirements outlined in the Planning EMP, I am satisfied that impacts to environmental values in these sensitive areas will be managed.

Condition 8

The construction EMP is to include provision that construction in wetlands located within the project's pipeline corridor will occur only between May and September, inclusive.

The EMP is to further indicate that:

- **when trenching across part of a wetland, topsoil will be stockpiled, and replaced after works to enable ground layer species to re-establish**
- **wetlands will be restored post-construction.**

The Coordinator-General, through DIP, is the agency responsible for this condition.

7.8 Environmentally Relevant Activities

As discussed in section 4.5, two environmentally relevant activities (ERAs) have been identified as necessary approvals for the project to obtain:

- ERA 64: water treatment – treating 10 ML or more raw water in a day
- ERA 8: chemical storage – storing 200 tonnes or more of chemicals that are solids or gases; storing 200 tonnes or more of chemicals that are liquids.

DERM will be the assessment manager for development approvals for undertaking ERAs pursuant to the EP Act.

7.8.1 Water treatment plant waste

Issues raised in submissions

The EIS provides that the quantity of residue to be produced by the Alton Downs WTP is based on the water quality of the Fitzroy River, which varies depending on seasonal and catchment conditions. On average, the WTP may produce 133 tonnes of residue each day.

A number of submissions on the EIS made by a private submitter and agencies, including DERM and the Capricornia Conservation Council, raised issues or requested further information, on the proposed waste handling and disposal methods for the WTP's sediment residue.

One submission by a private submitter raised concerns that in the event that arrangements cannot be made for the residue from the WTP to be disposed of in accordance with local government regulations at a site other than the WTP, large volumes of the residue will be stored at the WTP. The submitter had concerns that contamination of surrounding land may occur in the event that residue escapes from the WTP. A concern with the toxicity of the waste was also raised.

The submitter also raised concerns about the release of contaminated stormwater from the WTP and queried the design of the stormwater retention basin on site.

EIS provisions

In response to submissions raised, the SEIS provided further detailed information on the proposed residue management strategy for the WTP waste. In summary, it confirmed:

- drainage from the site will be transferred to a general purpose pump station for recirculation to the head of the plant. A residue trap basin is included in the design to prevent overflow of residue to the surrounding environment.
- dewatered residue will be transferred by conveyors from the centrifuges to residue hoppers for transport off site. There would be two hoppers, each of 200 tonnes capacity. This will allow storage of residue for three days at an average production rate of 133 tonnes per day. The bins will discharge directly into road transport truck and trailer units for removal of the residue from site.
- While the design of the plant is based on a residue storage capacity of 400 tonnes, an emergency residue stockpile area of 2000 tonnes has also been included in the design, and is intended for use as additional storage during extended periods where transport from site is limited.

In addition to design being of sufficient capacity to ensure adequate temporary storage, the following measures will be in place at the site to prevent impacts to surrounding land from the storage of the residue:

- checks of the storage areas and emergency stockpile areas will occur, especially after heavy rainfall events to ensure that the residue does not enter the environment
- the entire residue area, including the emergency residue stockpile area, will be bunded and run-off will be directed to a sediment basin to prevent the residue produced from running off-site.

In terms of potential toxicity of the residue, table 16 of the SEIS provides further information on the estimated residue constituents, for example, lead, mercury and arsenic as measured against, in the absence of Queensland guidelines, South Australia Environmental Protection Agency guidelines. This confirms quantities of key elements in the residue will be extremely low.

The SEIS provides that DERM has advised the proponent that as the WTP is not treating municipal waste water, the residue is not considered a regulated waste under the *Environmental Protection Regulation 1998*.

As indicated in the EIS and conditioned by DERM at W3, Appendix 3, a waste management plan which details how waste will be effectively and appropriately managed will be required to be developed and implemented by the proponent as a condition of approval.

Following a review of information including that provided in the EIS and SEIS, DERM has provided key conditions for ERAs 64 and 8 which are included at Appendix 3 of this report. GAWB will be required to consult with DERM prior to applying for its development approvals for the ERAs so that further specific conditions relevant to the final location and design of the project can be formulated by DERM.

The transport of waste off-site during operation of the facility will trigger the requirement for an ERA 57: Regulated waste transport authority. However, this will not be required to be held by the project's proponent as an independent service provider will be contracted by GAWB to transport the waste.

The ERA 64 conditions made by DERM at W6 and 7, Appendix 3 do require GAWB to ensure that the waste transporter must have a regulated waste transport authority in order to take the waste from the site. The SEIS confirms GAWB, prior to start of the operations phase, will finalise arrangements for the residue handling and disposal in consultation with local and state authorities.

With regard to stormwater management, the SEIS indicates that stormwater retention at the WTP is a flood mitigation activity. The project's proposed stormwater retention basin (SRB) will collect all stormwater runoff from the WTP site and therefore no water would be discharged externally. All roof water will be captured on site and diverted for reuse to areas such as fire water tanks or redirected to the SRB. The SRB will have a capacity of approximately six ML and has been sized, together with its two dewatering pumps, to manage all runoff from a 72 hour one-in-20 year (Q20) rainfall event without any overflow.

GAWB intends to treat and transmit the stormwater as part of its supply to Gladstone, thereby substituting for the equivalent in draw down from the Fitzroy River during rainfall events.

I note that the return of this water to the screening facility (for subsequent transmission in the pipeline) would require approval from DERM in consideration of the Fitzroy Basin water resource plan. GAWB has provided in the SEIS that, if required by DERM, an alternative discharge of the pumped water from the SRB to the natural ground south of the Alton Downs WTP can be provided to maintain normal run-off conditions.

7.8.2 Coordinator-General's conclusions

I am satisfied that the information provided in the EIS and further clarified in the SEIS addresses concerns regarding the safe and efficient management of waste at the WTP. Conditions placed by DERM will further work to manage these issues. I am further satisfied that GAWB's WTP stormwater management strategy will address risk to surrounding properties by ensuring the adequate capture and re-use or redirection of the waters.

I recommend that the conditions included at Appendix 3, provided to me by DERM, should be applied to the development approval for the Alton Downs WTP for ERAs 64 and 8.

7.9 Cultural heritage and Native Title

7.9.1 Key issues

Indigenous cultural heritage

At the time of finalising this report, a Cultural Heritage Management Plan (CHMP) had not been completed. A CHMP is an agreement between a land user ('the sponsor') and a traditional owner ('the endorsed party') under the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Heritage Protection Act 1984* (Cwth) in place to ensure cultural heritage duty of care.

The potential exists for cultural and archaeological sites to be uncovered during construction activities within the project area. The potential cultural heritage impacts of the project are associated with the construction phase. Clearing or excavation works for grading and trenching may uncover burial of or damage shallow artefacts, subsurface material and significant vegetation just beneath the surface that has not previously recorded. The CHMP is the primary mechanism to ensure impacts are mitigated and ensure compliance with duty of care requirements.

An assessment of impacts on Aboriginal cultural heritage will be carried out within the proposed CHMP, which GAWB has committed to being in place prior to construction of the project.

Non-indigenous cultural heritage

A field survey conducted as part of the EIS identified two sites of low to moderate levels of non-indigenous cultural heritage significance within the project corridor:

Site	Description
Woolwash – Frogmore Pipeline site	Comprises an eroded cast iron pipe emerging out of the north bank of Woolwash lagoon and extending across the lagoon for approximately 30m. The pipe is partially supported by a wooden bridge structure extending approximately 50m across the lagoon. The pipe remains as evidence of a water pipeline which supplied steam locomotives with water from the nearby Gavial Creek.
Stone Culvert and Twelve Mile Road	The original Rockhampton to Gladstone Road which has been in use since at least 1904. The stone culvert is shown as "made crossing" on the survey plan and consists of several metamorphosed rocks constructing a dry stone wall that allows the Twelve Mile Creek to flow under the road surface.

Native Title

There are two existing Native Title claims within the project area: one by the Darumbal People for the area between the Fitzroy River and Raglan and one for the Port Curtis Coral Coast (PCCC) for the area between the vicinity of Raglan and Gladstone.

The EIS confirms that the Native Title process for the land affected by the project is being undertaken in accordance with all legislative requirements of the *Native Title Act 1993* (NTA), in full consultation with relevant Native Title claimants.

In the case of the Alton Downs WTP, Raglan pump station and Aldoga reservoir, Native Title has been extinguished through past land tenure grants. Native Title is still likely to exist at the intake and at some areas along the pipeline.

The EIS further provides that these areas are subject to processes under section 24HA and 24KA of the NTA. The pipeline meets the necessary criteria required under these sections of the NTA and in both cases, the non-extinguishment principle applies and any right that Native Title holders may have to compensation for the effect of the project on their Native Title rights is preserved under section 24KA and 24HA.

7.9.2 Proponent's response

Commitment C16 contained within Appendix 4 sets out GAWB's commitment to the preparation and implementation of a Cultural Heritage Plan for the construction and operation of the project, which is intended to minimise the impact of the project on Aboriginal and historic cultural heritage.

Approved CHMPs between GAWB and each of the PCCC and Darumbal people will be finalised prior to construction commencing in accordance with the requirements of the *Aboriginal Cultural Heritage Act 2003*. As part of the CHMP, an Aboriginal cultural heritage survey of the project area will be undertaken by representatives of the PCCC and Darumbal people.

With respect to historic cultural heritage, the plan will incorporate:

- a survey of the Woolwash – Frogmore pipeline, to determine the nature and extent of subsurface archaeological material within the project corridor prior to construction
- a basic level of photographic recording, which captures the nature of the item and its context within the cultural environment and within the project area, will be undertaken prior to works commencing in the area for both sites.

GAWB will be required to comply with the *Queensland Heritage Act 1992* requirements for ensuring cultural heritage values are managed during construction.

7.9.3 Coordinator-General's conclusions

Apart from the general duty of care provisions under the *Aboriginal Cultural Heritage Act 2003*, to ensure that activities do not harm Aboriginal cultural heritage, the proponent is required to develop a CHMP, through consultation and in partnership with all Traditional Owners before construction can commence. I acknowledge the proponent's commitment to prepare a CHMP and implement the agreed strategy described in the plan in full between the proponent and the Traditional Owners.

With respect to historic (non-indigenous) cultural heritage, I note GAWB's commitment to produce a cultural heritage plan which incorporates mitigation measures for the two sites of historic cultural heritage that are expected to be impacted as a result of the project.

I am satisfied that with the finalisation of both the CHMP and the (non-indigenous) cultural heritage plan, as defined in the planning EMP, cultural heritage impacts resulting from the construction and operation of the project will be managed.

7.10 Social and economic environment

7.10.1 Key issues

The key issues raised in submissions made by GRC, the Department of Communities and the Department of Housing in response to the social impact assessment section of the EIS relate to requests for more information on:

- potential cumulative adverse impacts on housing affordability and social amenity in the project region, and the provision of mitigation and management strategies to address the considerable housing stress in Gladstone and surrounding regions
- employment strategies for local residents, including members of Indigenous communities, to identify skills required for the project and initiate appropriate recruitment and training programs.

With respect to landholder consultation, two private submitters have raised concerns regarding inconsistencies in information provided during the consultation process. One private submitter also raised issues in relation to the terms of the easement and compensation arrangements.

7.10.2 Proponent's response

Local housing stress

Since the release of the EIS, GAWB has further developed the planning for worker accommodation for the project. As detailed in Table 8 (and Table 2 of the SEIS), GAWB is considering a 200-person housing camp for the Raglan area, if required. Whilst not yet confirmed, and dependant on the housing and employment conditions at the time of construction, this camp would reduce the pressure on existing housing in the project area.

Table 8: Construction crew accommodation arrangements

Construction crew	Approximate number of personnel	Description of accommodation
Fitzroy River intake and Pump Station	36	Local accommodation in Rockhampton, with a majority being local residents
Alton Downs WTP	110	Local accommodation in Rockhampton, with a majority being local residents
Northern Pipeline Team	145	It is expected that a majority of the 290 personnel will be local residents and therefore will not require accommodation at the construction camp. A maximum of 200 of the 290 personnel would be accommodation in the 200-person capacity construction camp at Raglan (if the camp is required)
Southern Pipeline Team	145	
Raglan Pump Station and Reservoir	56	A majority of the workers will be local residents, however a proportion may wish to stay at the camp due to travel distance
Aldoga Reservoir	85	Local accommodation in Gladstone
Project office	32	Local accommodation in Rockhampton

In addition, GAWB expects that a majority of the construction personnel for the Alton Downs WTP, intake and pipeline will be local residents, reducing the strain on the housing rental market. However, GAWB acknowledges that there will be a requirement for some specialist personnel for the project to be sourced from outside the region. In considering this information, GAWB notes that they do not believe there will be considerable pressure arising from the project on local accommodation.

Employment strategies for local residents

GAWB has committed to adopting policies and strategies to utilise and train local workforce and resources, including GAWB's traineeship and graduate programs. Its employment strategy (EIS, Section 16) includes recruitment and skills initiatives for local labour and to assist people with on the job training, targeting particular groups, e.g. unemployed, those with a disability, and indigenous people.

As specified in the Planning EMP (Appendix F of the SEIS), GAWB will ensure compliance with the *Queensland Government Building and Construction Contracts Structured Training Policy* (the '10 per cent policy') through the following:

- GAWB will include a requirement to comply with the policy in the construction contract agreement
- as the project value is greater than $100 million, the contractor will develop a skills development plan and engage a training coordinator as required by the policy
- a minimum of 10 per cent of the total labour hours on the project will be carried out by apprentices, trainees or cadets or used to increase the skill levels of current employees.

Consultation

GAWB states that consultation with landowners commenced in June 2007 at a time when the project was being developed, investigations were commencing and early design was being formulated. As design work progressed, the design was refined for the changes in project parameters and for the findings and evaluations completed for the technical and other investigations.

Throughout this period and as the project developed, GAWB continued consultation with landowners, supplying updated and additional information to individual landowners and other relevant stakeholders. GAWB acknowledges that due to negotiations with a private submitter, the siting for the WTP changed and the design of the plant had several revisions.

GAWB has advised that concerns from a private submitter regarding the terms of the easement and compensation arrangements are being dealt with during the negotiations on the acquisition of easements.

To build on the significant communications activity already undertaken, GAWB has committed (commitment C.17a of Appendix 4, and Table 20.19 of the planning EMP) to preparing and implementing a community and stakeholder engagement plan.

This plan is intended to directly inform affected landowners, the community and other stakeholders about project planning, and provide contact details and processes for queries and complaints. It will be prepared and updated as the project progresses and will describe the community engagement methodology, report on measures that have been undertaken, and also assess the engagement methodology against the indices and milestones within the plan.

In addition, GAWB has committed to preparing and implementing a complaints procedure plan (commitment C.17b of Appendix 4 and Table 20.19 of the planning EMP) to appropriately address complaints from the community that may arise as a result of environmental or social incidents during construction or operation of the project. The plan will establish a complaints response management system that provides for the receipt, recording and timely investigation and response to complaints, including the implementation of preventative or corrective actions and communication with the person who made the complaint to inform them of the actions undertaken.

7.10.3 Coordinator-General's conclusions

I am satisfied that the workforce accommodation strategy pursued by GAWB is sufficient to address the construction and operational workforce accommodation requirements for the project.

Any proposals for temporary workers' accommodation located within either the RRC or GRC local government areas, will be assessed by the local government for a material change of use development approval against its planning scheme under the *Sustainable Planning Regulation 2009*. I state that the development of new permanent or temporary residential accommodation within SDAs is inconsistent with the development schemes for the SDAs.

Furthermore, I am satisfied that the workforce and employment and skills policies and strategies that GAWB has committed to are sufficient to ensure the engagement of local residents, both indigenous and non-indigenous, for training programs and recruitment opportunities.

I acknowledge GAWB's consultation program undertaken to date involving landowners and other stakeholders since the early design and investigative phases of the project. Due to the iterative nature of this consultation involving changes to the project resulting from consultation and/or technical investigations, I find in this context, the provision of differing information to landowners to be consequential and entirely acceptable.

I note GAWB's commitment (and inclusion within the planning EMP) to prepare and implement a community and stakeholder engagement plan and complaints procedure plan. I am satisfied that the preparation and implementation of these plans will ensure that consultation continues in an acceptable manner during the construction and operational phases of the project.

8. Matters of National Environmental Significance

8.1 Project referral and controlling provisions

On 12 June 2007, the project was referred by GAWB to the Commonwealth Minister for the Environment, Heritage and the Arts to assess whether it was a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

On 11 July 2007, the Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA) determined that the project was a controlled action for potential impacts on matters of national environmental significance (NES) (reference number: EPBC 2007/3501). As such, the project requires the approval of the Commonwealth Minister or a delegate before it may proceed.

The Commonwealth Government has accredited the EIS process, as conducted under the *State Development and Public Works Organisation Act 1971* (SDPWO Act), under a bilateral agreement between the Commonwealth and Queensland Governments. This enables the EIS to meet the impact assessment requirements under both federal and state legislation.

The controlled actions for a proposed project may be considered under section 133 of the EPBC Act by the Commonwealth Minister, who has regard to the Coordinator-General's EIS evaluation report arising from the EIS process prepared under section 35 of the SDPWO Act.

The controlling provision for the Gladstone–Fitzroy Pipeline Project (GFPP) under the EPBC Act is listed species and communities (sections 18 and 18A). This includes the following species:

Fauna

- Birds
    - yellow chat (Dawson subspecies) (*Epthianura crocea macgregorii*) — listed as critically endangered under the EPBC Act
    - squatter pigeon (*Geophaps scripta scripta*) (vulnerable under the EPBC Act)
    - painted snipe * (*Rostratula benghalensis*) (vulnerable, migratory)
    - red goshawk * (*Erythrotriorchis radiatus*) (vulnerable, migratory)
- Reptiles
    - brigalow scaly foot (*Paradelma orientalis*) (vulnerable)
    - yakka skink (*Egernia rugosa*) (vulnerable)
    - collared delma * (*Delma torquata*) (vulnerable)
    - ornamental snake *(Denisonia maculata)*
    - fitzroy tortoise (*Rheodytes leukops*) (vulnerable)
- Other
    - grey-headed flying-fox * (*Pteropus poliocephalus*) (vulnerable)
    - greater long-eared bat * (*Nyctophilus timoriensis*) (vulnerable)

* Note – these species were not identified as target species for the controlling provisions however were identified during the EIS process as having the potential to be located in the project area.

Flora

    - whitewood (*Atalaya collina*) (endangered)

- *Cycas megacarpa* (endangered)
- *Cycas ophiolitica* (endangered)
- *Quassia bidwillii* (vulnerable)

Endangered ecological communities:

- semi evergreen vine thickets of the brigalow belt
- brigalow (*Acacia harpophylla* dominant and co-dominant).

In a general sense, potential impacts of the project on NES matters may arise from the construction and operation of the pipeline and other associated infrastructure, resulting in subsequent potential harm to plant or animal species listed as the controlling provisions.

Information has been presented in the EIS and SEIS relating to both the existing values of threatened flora species and communities and threatened fauna species, and the potential impacts of the project on those values, and is assessed here as an interim evaluation of the potential impacts of the project on the NES.

Water supply

For water allocation to be available, the project relies on delivery of the Lower Fitzroy River Infrastructure Project, being the proposal for additional infrastructure to be developed in the Fitzroy River, with the raising of the Eden Bann Weir and construction of the Rookwood Weir. These projects will be subject to a separate environmental assessment process.

The Department of Environment and Resource Management (DERM) regulates water resource planning and the allocation of water in Queensland under the *Water Act 2000.* DERM issued a revised Fitzroy Basin resource operations plan (ROP) in July 2009 that specifies the reservation of 30 000 ML of high reliability water for GAWB from the Fitzroy River. The ROP provides for the granting of a water allocation from this reserve subject to conditions, including that agreements are in place with the proponent for the additional infrastructure necessary to supply the water allocation.

The new allocation of 30 000 ML per annum as made to GAWB will be subject to rules such as the 'critical water supply rule' of the Fitzroy Basin ROP that will see the allocation restricted during periods of low flow in the river.

Allocation of the water within a catchment is a separate statutory process to the approval for specific infrastructure to extract a water allocation. The *Water Act 2000* requires the preparation of a water resource plan (WRP) and ROP under a process designed to ensure that water is equitably managed to preserve the balance between human consumptive demands and the needs of the environment.

To inform this process, an independent technical advisory panel provide advice to DERM on the potential flow-related environmental impacts of taking water from the Fitzroy Basin. The environmental assessments undertaken by the technical advisory panel are used to develop the environmental flow objectives (EFOs) of the WRP, and consists of three main phases:

- a current condition assessment of the existing environment
- development of an environmental flow assessment framework
- assessment of the likely environmental implications of possible future water resource management scenarios.

The technical advisory panel assessed the implications of full water resource development in the Fitzroy Basin (the full development scenario) to the current use scenario. This advice was a key input into the formulation of the outcomes and objectives of the WRP, including the EFOs which are included in the WRP. These EFOs seek to protect environmental assets of the Fitzroy Basin, including the yellow chat and the fitzroy turtle and other matters of NES.

The technical advisory panel recommended the suite of performance indicators to be used in the Fitzroy Basin WRP, as they were considered to best represent key attributes of the flow regime, including low, medium and high flows and flow seasonality. These EFOs established in the WRP seek to minimise changes to important characteristics of the flow regime, including flow variability and seasonality and have been set in accordance with precautionary principles.

In terms of potential impacts on matters of NES due to the project's water sourcing and supply strategy, this matter was discussed by DIP and GAWB with DEWHA in 2007 during the proponent's referral of the project to DEWHA for its initial assessment under the EPBC Act to ascertain whether the project attracted controlling provisions.

At the time, it was noted that the project would not include any assessment of impacts resulting from extraction of water from the Fitzroy River. It was agreed that the potential impacts associated with the extraction of water would be addressed within the environment approvals process for the associated water infrastructure, that is, the Lower Fitzroy River Infrastructure Project, being works independent of the GFPP.

Accordingly, the GFPP's Terms of Reference (ToR) for the EIS did not make any specific mention of the need for the EIS to consider the potential impacts of extracting 30 000 ML per annum from the Fitzroy River on matters of NES. The EIS did examine in detail the potential effects of the project during construction and operation on matters of NES, which are herein assessed in this report.

8.2 Impacts on matters of national environmental significance

As provided in Appendix G of the EIS, activities associated with the construction of the project that have the potential to impact upon EPBC Act listed threatened species and threatened ecological communities include:

- vegetation clearing and habitat disturbance
- habitat fragmentation and disturbance to wildlife movement corridors
- disturbance to wetlands and waterways
- introduced fauna and flora.

The following provides an overview of the impacts and how GAWB proposes to manage these.

8.2.1 Vegetation clearing

In terms of fauna habitat impacts resulting from project works, the EIS provides that the pipeline alignment has been selected to avoid or, where this has not been practicable (for example, due to topographical constraints), minimise impacts to areas of remnant vegetation. Therefore, the majority of the construction footprint traverses cleared and highly disturbed environments (characterised by agriculture and grazing) and avoids native vegetation regrowth areas where possible.

Approximately 22.05 hectares of remnant vegetation will be required to be cleared. Of this vegetation, approximately 0.36 hectares are listed as 'endangered' and 17 hectares listed as 'of concern'. Further detail on the vegetation is included at Table 7 'project corridor vegetation clearing areas' in section 7.6 of this report.

In terms of essential habitat in which a rare or threatened species is known to occur, the EIS provides that there are no areas of essential habitat mapped within or adjacent to the project

area. There are two areas of essential habitat located within 20 km of the project area. These are upstream of the project, with the closest located 10km to the west of the project area and the other located 4km south of Bouldercombe. GAWB provides the state mapping does not identify the species the essential habitat relates to.

The EIS confirms that a significant threat to a number of fauna species due to vegetation clearing is the potential loss of hollow-bearing trees which may be used for shelter and breeding.

Measures to help mitigate potential impacts to fauna due to vegetation clearing include:

- all mature hollow-bearing trees are to be retained and protected wherever practicable. Where this cannot be achieved, hollow limbs and/or trunks should be left on the ground adjacent to the ROW (or relocated to within areas of remnant vegetation) to provide habitat for ground-dwelling fauna
- refine the ultimate pipeline alignment during final surveying to avoid or minimise the clearing of mature hollow-bearing trees. An experienced botanist/ecologist is to assist
- vegetation clearing will be limited to within the construction footprint. Construction equipment and personnel will not be permitted outside the surveyed areas. Impact to vegetation outside the ROW will be avoided
- cleared vegetation is to be stockpiled so as not to impede wildlife, surface drainage and avoid damage to adjacent live vegetation
- clearance of ground cover vegetation shall be restricted to the construction easement.

These measures are included in the management strategies of the EMPs, in particular the:

- vegetation clearing control plan
- fauna management and protection control plan.

Specific mitigation measures for species listed under the EPBC Act are discussed further in section 8.2.4 of this chapter.

8.2.2 Habitat fragmentation

Key actions described in the EIS and documented in the EMP and associated control plans, will reduce and manage potential impacts to habitat and wildlife movement. These include:

- constraining corridor clearing widths to the minimum necessary to allow construction of infrastructure (i.e. the minimum required to safely construct the infrastructure and fulfil environmental management requirements, e.g. erosion control)
- avoiding additional clearing of remnant vegetation for construction vehicle access tracks and extra workspaces
- logs and fallen vegetation will be pulled back over the alignment to provide habitat for native fauna
- where required, trees adjacent to working areas are to be lopped, with complete-to-ground clearing being avoided
- avoid construction of separate crossings for access tracks, as access would be able to be gained to the crossing area from both sides of all creeks
- any fencing necessary along the outer ROW boundary should allow passage of fauna from either side of such fencing

- refine the ultimate pipeline alignment during final surveying to further minimise impacts to wetland and riparian habitats
- an experienced botanist/ecologist is to assist where any alignment refinements are proposed during final surveying of wetland or riparian crossings. Monitoring of vegetation reestablishment is to be conducted by a suitably experienced ecologist
- water quality protection measures (e.g. sediment and pollutant controls) are to be installed prior to the main construction works (i.e. trenching and pipeline instatement)
- disturbance to habitat values have been minimised where possible through trenchless construction methods
- the construction corridor and the clearing of wetland vegetation cover (native or introduced) is to be kept to the minimum required to safely construct the pipeline and comply with other environmental management safeguards (e.g. erosion control, pollutant controls, spoil storage, etc.)
- surface drainage is to be returned to pre-construction patterns
- areas disturbed by constructing activities are to be rehabilitated to closely reflect preconstruction vegetation floristics and structure.

8.2.3 Wetlands and waterways disturbance

With the exception of habitats associated with Eight Mile/Inkerman Creek and Twelve Mile Creek Reserve, the EIS finds that natural wetlands throughout the project area have been highly modified by a combination of earth works and native vegetation clearing.

Despite these disturbances, a variety of these wetlands support habitat values for a wide variety of waterbirds and waders, including rare and migratory species. As a result of the findings of the field survey program, wetland habitats were identified and the pipeline route adjusted to avoid these whenever possible. In several instances where this was not possible, trenchless crossing methods will be used in sensitive areas to reduce the impact to flora and fauna habitat values.

Where complete avoidance or trenchless construction methods are not possible, mitigation measures, including the following, will be adopted that will aim to minimise disturbance to these areas:

- refine the ultimate pipeline alignment during final surveying to further minimise impacts to wetland and riparian habitats
- an experienced botanist/ecologist is to assist where any alignment refinements are proposed during final surveying of wetland or riparian crossings
- water quality protection measures (e.g. sediment and pollutant controls) are to be installed prior to the main construction works (i.e. trenching and pipeline instatement)
- the construction corridor and the clearing of wetland vegetation cover (native or introduced) is to be kept to the minimum required to safely construct the pipeline and comply with other environmental management safeguards (e.g. erosion control, pollutant controls, spoil storage, etc.)
- surface drainage is to be returned to pre-construction patterns
- areas disturbed by constructing activities are to be rehabilitated to closely reflect preconstruction vegetation floristics and structure
- monitoring of vegetation reestablishment is to be conducted by a suitably experienced ecologist.

Conditions imposed by me within this report (Appendices 1-2), such as limiting construction times to be undertaken only during the dry season (May to September, inclusive) and corridor widths in sensitive areas will work to further reduce impacts on these sensitive areas.

8.2.4 Introduced fauna and flora

The EIS provides that the proposed development will not deliberately introduce any invasive species. The EMP provides the following actions as mitigation measures for this issue:

- companion animals are to be banned from all pipeline construction activities to ensure that no pest species are introduced
- implementation of a program to ensure strict litter control throughout the construction site. This is to be supported by: site-wide signage; an adequate number of litter bins (which by design exclude birds and vermin); bin clearance on a regular basis; daily maintenance of crib rooms to ensure cleanliness; educational signage within crib rooms on the linkage between poor waste management practices
- increases in pest animal populations and subsequent impacts to native fauna
- feral animal control strategies will be developed and implemented under a feral animal control plan.

For weeds, a weed management plan will be implemented during construction. The weed management plan will include the following management measures:

- equipment and material introduced to the region, especially those from interstate, will be screened for pest species
- workers undertaking the following tasks will be required to fulfil all washdown requirements: surveying; fencing/gating; clearing and grading; and reinstating. The remainder of the workforce will be required to stay on project approved roads or on the construction corridor, where they will not come into contact with weeds
- ensure all vehicles and machinery that will access the ROW are free from soil/organic matter prior arrival on site.
- identify on drawings and to personnel, entry and exit points to the ROW at which hygiene protocols become effective
- establish and maintain weed wash down bays at designated entry and exit points
- clean down of machinery when moving from disturbed areas to undisturbed areas during clear, grade and rehabilitation
- no soil or vegetation material is to be taken beyond one kilometre from the point of original clearing or extraction.

Tables 20.9 and 20.11 of the planning EMP identify the monitoring measures in place for introduced and pest fauna and for weeds. These include:

- a weed survey of the construction area prior to construction commencement
- routine daily visual observance by all construction personnel during construction to identify weed infestations
- environmental site checks undertaken by the environmental officer, to include the following:
    - identification of non-conformances from the procedures outlined above
    - monitoring of weeds present in the project area and any instances of new infestations
    - mapping (i.e. GIS locations) of weed infestation
    - a photographic record of weeds and weed management
    - inspections of wash-down areas and procedures

- external environmental audits by GAWB's environmental officer during construction to be carried out every six months or as determined by GAWB
- environmental checks undertaken during operation will include weed monitoring and control as required
- weed inspections of the entire project route will be undertaken by a suitably qualified person as required during operation to monitor the effectiveness of the weed management plan and to maintain a record of weed status in the project area
- weed monitoring will be undertaken as part of the regular ROW surveillance program.

8.3 Listed threatened terrestrial fauna

The EIS provides that existing environmental values in the project's study area were described based upon a combination of desktop and field surveys to determine the threatened fauna species likely to occur in the project area.

Based on the findings of the desktop surveys where it was indicated that a number of species of conservation significance may use habitats in the project area and surrounding lands, the field survey program and habitat assessments were designed to target these species. Table 3 of Appendix G of the EIS provides a list of these target species.

The EIS provides that the field survey program, initiated in April 2007, was comprised of the following survey events:

- a preliminary biodiversity investigation undertaken between 1 and 5 April 2007
- a series of monthly surveys to monitor known and potential habitat areas for the EPBC Act listed threatened yellow chat (*Epthianura crocea macgregori*), from June 2007 to December 2007
- a spring-season avifauna survey conducted on 2–6, 27 and 28 September 2007
- a target species and biodiversity survey undertaken between 18 and 31 November 2007.

In terms of survey constraints, it is noted that the survey period was conducted at a time when the region was in a period of extended drought (of greater than five years) which likely influenced the poor representation of several native fauna groups. Additionally, several of the target species, particularly the reptiles, were described as cryptic and difficult to detect. The EIS concedes that it is likely additional species would be detected during wetter periods when species would be more prevalent and active.

Fauna habitat values in the project area have been strongly influenced by a history of cattle grazing and agriculture, resulting in large cleared areas with small nodes that support native vegetation, with these characterised by a poor recruitment of shrubs and trees, and an absence or rarity in native vegetation of tree hollows. Cattle access has also further simplified the fauna habitat structure by, for example, interference with ground microhabitat such as native grasses, leaf litter and fallen timber, required by a wide variety of ground-dwelling fauna.

The EIS states that desktop studies indicated a total of 22 terrestrial and aquatic fauna species listed as threatened under the EPBC Act may occur in the project area.

In terms of ground truthing the presence of species in the study area, for the Fitzroy to Bajool section of the project area, 185 vertebrate fauna species were recorded within the project corridor and one km on either side of the project area. Of these species, two EPBC Act listed threatened fauna species were observed:

- ornamental snake (*Denisonia maculata*) (vulnerable)
- squatter pigeon (sth. subsp.) (*Geophaps scripta scripta*) (vulnerable).

For the Bajool to Gladstone section of the pipeline, field investigations provided 245 terrestrial vertebrate fauna species within the corridor and one km either side. The squatter pigeon, also sighted in the Fitzroy to Bajool section of the pipeline, was confirmed. One further listed threatened fauna species was also sighted:

- yellow chat (*Epthianura crocea macgregori*) (critically endangered).

A further seven threatened species were confirmed during field studies as having the potential to be present due to suitable habitat within the project area. Eight maps included at figures 7.3 and 7.4 of the EIS show the location of rare and threatened fauna and habitat along the pipeline route.

The following section details how impacts to the ten threatened listed species either confirmed or with potential to be in the project area will be managed.

In terms of listed threatened fauna either confirmed during study events or likely to be present due to suitable habitat in the area, assessments conducted by GAWB in the EIS and SEIS on matters of NES was prepared using the significant impact guidelines formulated by DEWHA, which outline criteria to assess whether a project action is likely to have a significant impact on these matters. The criteria include various considerations of likely risk of disturbance or detriment to ecological communities due to project actions.

From this assessment, described in Table 11 of Appendix G of the EIS, GAWB provides that none of the significant impact criteria risks will be triggered as a result of the project works. The EIS confirms that the as per the terms of the assessment criteria, the project works will result in negligible impact to habitat which, overall, is considered to be of negligible ecological value; and effects on species, habitats or resources of value are likely to be imperceptible.

As part of this assessment, the potential for residual impacts due to project works was also assessed, and for the ten threatened species, the impact upon each EPBC Act listed threatened fauna species (both aquatic and terrestrial) is considered to be negligible to minor.

The following provides information from the EIS on specific management and mitigation measures for the threatened target species that were not confirmed during studies, but that have the potential to be located in the project area.

- grey-headed flying-fox (*Pteropus poliocephalus*) (vulnerable):
  minimise tree clearing and impacts to remnant woodlands and forest.
- greater long-eared bat (*Nyctophilus timoriensis*) (vulnerable):
  minimise impacts to remnant vegetation communities (especially those with a shrubby understorey), microtunneling or restricted clearing widths through riparian communities, protection of hollow-bearing trees, and post-construction habitat rehabilitation.
- the collared delma (*Delma torquata*), the brigalow scaly-foot (*Paradelma orientalis*) and the yakka skink (*Egernia rugosa*) (all vulnerable):
  minimise impacts to remnant woodland and open forest communities (especially those with rocky outcrops at the southern end of the project area), and post-construction habitat rehabilitation. Trench fall rescue protocols will also be implemented and will include minimising periods that trenches will be left open, inspecting trenches before morning works commence and leaving trench ends open outside working hours with an incline to allow fauna to escape. These protocols will be included in the project's EMPs.
- The distribution of the red goshawk (*Erythrotriorchis radiatus*) (vulnerable, migratory) was deemed to be uncertain in the region as the raptors require a very large home

range. Mitigation strategies include minimising impacts to remnant woodland and forest (particularly larger patches in southern sector of project area), and post-construction habitat rehabilitation.

- The painted snipe (*Rostratula benghalensis*) (vulnerable, migratory): while not recorded in the area, the EIS provides that should it be present its movements are unpredictable, with individuals seldom remaining long in wetlands at any locality. GAWB provides that impacts will be minimised by managing works in wetland areas, using minimal clearing paths, and undertaking responsive post-construction habitat rehabilitation.

For the three listed threatened fauna species confirmed as having a presence in the project area, the EIS provides that the squatter pigeon (sth. subsp.) (*Geophaps scripta scripta*) (listed as vulnerable) was recorded at a variety of locations, though mainly within the central sector of the project area. The species is known to occur in highly disturbed cleared landscapes.

Mitigation measures proposed in the EIS include to minimise impacts to drier eucalypt woodland areas and areas where native grasses predominate, and habitat rehabilitation post-construction. Feral animal and weed control strategies as described in the EMP and relevant control plans will also manage impacts. I am satisfied that the likely impacts on this species due to project works will be minor, and management practices to be contained in the EMP will manage impacts.

For the ornamental snake (*Denisonia maculata*) (listed as vulnerable), this species was recorded in woodland adjacent to wetlands near the south of Midgee (Figure 7.3, page 3 of 4, EIS). The EIS confirms the species may occur in similar habitats to the north and south of this area, especially patches on heavier, cracking clay soils that are in association with waterbodies.

Proposed mitigation measures to reduce potential impacts to this species include to minimise impacts to wetland areas through using minimal clearing paths, open trench exclusion fencing, utilising trench fall rescue protocols, and post-construction habitat rehabilitation.

I provide the following condition to further manage impacts to this species during construction works.

Condition 9

The project's construction EMP is to contain a SAP to apply to the vicinity of Casuarina Road where the presence of the ornamental snake was confirmed during the EIS process. The SAP is to detail species-specific awareness, management (including management of animals captured by the trench) and site rehabilitation strategies.

During a seven month monitoring program, the critically endangered yellow chat (*Epthianura crocea macgregori*) was confirmed at five locations within one kilometre of the project area, but was not recorded within adjacent areas along the ROW. Suitable habitat for the species at a number of locations adjacent to the corridor has been confirmed.

The EIS provides that a precautionary approach was adopted in relation to considerations of the pipeline alignment and potential yellow chat habitat.

In August 2008, a recovery plan for the yellow chat was released by the Commonwealth and Queensland governments. The recovery plan lists the following as threats to the species:

1. Lack of knowledge regarding key aspects of Capricorn yellow chat ecology and habitat requirements.
2. Construction of barriers such as extensive levee banks for ponded pasture development or road works within tidal areas.
3. Construction of impoundments (weirs and dams or ponded pastures) upstream of areas supporting yellow chats.

4. Spread of exotic pasture grasses, particularly aleman grass and olive hymenachne.
5. Increase in cattle stocking densities where the species currently occurs.
6. Uncontrolled fire.

The EIS confirms that project works do not trigger points 2, 3 and 5. Points 4 and 6 will be managed by construction practices described in fire and weed control plans to be contained within the project's EMP.

In relation to the recovery plan's point 1, I acknowledge GAWB's statement that survey work undertaken during the EIS will contribute to the understanding of yellow chat occurrence and habitat usage in the area. Additionally, GAWB has provided an undertaking in the SEIS to provide up to $50 000 in funding to support an existing, long-term research initiative by the Central Queensland University which aims to evaluate the dependence on habitat inundation to support the species' breeding regime.

The study complements the recovery plan's following recovery actions:

- 2.8 – Undertake research and monitoring of chat ecology
- 2.10 – Research genetic structure, demographics and dispersal of the chat; identify linkages between breeding and productivity including key food requirements.

I commend this undertaking and make provision for it in the following condition.

Condition 10

Should, in his assessment of the controlling provisions of the project under the EPBC Act, the Commonwealth Minister for the Environment, Heritage and the Arts determine that the project may proceed, the proponent will make available $50 000 AUD for the funding of a research initiative into the critically endangered yellow chat.

Within four months of the Commonwealth's decision, the proponent is required to provide advice to DERM of its contracting for the undertaking of studies to evaluate the dependence on habitat inundation to support the species' breeding regime.

In its submission on the EIS, DEWHA identified that a key threat to the yellow chat is possible changes to the area's hydrological regime due to construction activities. DEWHA stated that activities associated with pipeline construction and maintenance have the potential to interfere with surface water flow upon which productivity of the wetland system and therefore the species, is dependant.

GAWB has confirmed that, for each of the creek crossings that are adjacent to yellow chat habitat, being Raglan, Horrigan, Twelve Mile and Inkerman creeks, all with the exception of Twelve Mile Creek will be microtunnelled in order to minimise construction impacts in these areas of significant environmental value. This matter is conditioned by me at Condition 6, section 7 of this report.

Twelve Mile Creek, while adjacent to yellow chat breeding areas, is proposed by GAWB to be trenched as the crossing has sparse and fragmented riparian values. Further discussion on works in this location is included at section 7.7.1 of this report. I have conditioned in Condition 6, section 7, that construction works at this creek are to be undertaken only during May to September, being outside of the species' breeding season, and that works are to be limited to a maximum of 15m in width.

The SEIS confirms that any dewatering required during trenching works at Twelve Mile Creek may impact groundwater conditions. To avoid impacts, the proponent will undertake backfilling and returning the excavation zone to pre-construction conditions by using the original material compacted to the initial density.

For all areas in proximity to yellow chat habitat, environmental impacts during construction will be managed through use of a SAP for the area which takes into account its sensitivity as a

location in proximity to yellow chat habitat. The SAPs will be included within the project's EMPs.

Table 19 of the SEIS provides information on potential impacts to surface water flows and the proposed mitigation measures to ensure impacts are managed during construction. Further information has also been provided on detail of these measures. For crossings close to yellow chat habitat, specific strategies, to be included in the SAPs, include:

- width of disturbance for each crossing will be reduced to approximately 15m
- trenched crossings will be completed within one week
- creek water levels will be monitored during creek crossing construction to allow early identification of changed water levels that may affect yellow chat habitat
- water from the coffer dam will be pumped downstream so that downstream flows are not reduced
- permanent construction roads will not be built across creeks
- pre- and post-works surveys of the creek and vertical soil profiles will be undertaken to ensure the creek profile is restored.

The DEWHA, in its response to the SEIS, noted that the SEIS adequately addressed the department's concerns relating to matters of concern including potential changes to the hydrological scheme and impacts due to microtunnelling.

In terms of construction timing in locations adjacent to the yellow chat, DERM has suggested a cautious approach on how large an area should be considered as 'adjacent' given the location of nesting sites is variable and data is scarce. A footprint of one km within RE 11.1.2, an RE which corresponds to the habitat type where the species has been observed to nest, was suggested as should be avoided during the breeding season. GAWB has confirmed in the SEIS at Figure 4 that this accords with an area of approximately 18 km in length between Port Alma Railway and Horrigan Creek, and has provided that construction in this area will be limited to occur within May to September.

I support these undertakings as working towards reducing potential impacts on this critically endangered species. I state that these measures are to be incorporated into a special area plan for yellow chat areas as per the following condition.

Condition 11

A SAP for areas in proximity to confirmed yellow chat habitat, that is, construction works in areas along the pipeline alignment between the Port Alma Railway and Horrigan Creek, is to be created and included in the project's EMP.

The SAP is to include the following practices:

- **construction works are to be undertaken during the period between May and September inclusive**
- **for those crossings not being microtunnelled, width of disturbance for each watercourse crossing is to be reduced to 15 metres**
- **works will be programmed to ensure that trenched crossings will be completed and stabilised within one week**
- **creek water levels will be monitored during creek crossing construction to allow early identification of changed water levels that may affect yellow chat habitat and appropriate corrective action to be undertaken**
- **water from the coffer dam will be pumped downstream so that downstream flows are not reduced**
- **permanent construction roads will not be built across creeks or wetlands**
- **pre- and post-works surveys of the creek and vertical soil profiles will be undertaken to ensure the creek profile is restored.**

Groundwater at waterway crossings

The SEIS provides that microtunnelling at the creeks will be at an approximate maximum depth of between 8m to 13.5m. The depth of groundwater varies from 10-20m in the Bajool to Gladstone area and five to nine metres in the Fitzroy to Bajool area. In the vicinity of the creek crossings, the aquifers are isolated from the surface by eight to 10m of thick, medium/high plasticity clays (Fitzroy to Raglan).

Given these depths, the SEIS confirms it is possible construction of Inkerman, Horrigan and Raglan creeks will have some impact to the groundwater regime as the microtunnelling would occur below the groundwater table and within aquifers. However, further investigations will be undertaken prior to construction to identify the thickness of the clay layer overlying the aquifer and groundwater levels at the crossing sites.

For construction within the clay layer, impacts to groundwater are not expected as it is anticipated that river seepage into the works will not occur. However, should dewatering of the works be required, the expected impact on groundwater will most likely be limited to temporary lowering of pressure and altering groundwater flow patterns in the immediate vicinity of the site.

The dewatered groundwater, depending on its quantity and quality, may require a special disposal strategy. GAWB has confirmed that a groundwater management plan (GMP) will be developed for the project and will be incorporated into the EMP. The GMP will include detail on disposal methods.

Should acid sulfate soils (ASS) be encountered, the EMP's ASS control plan will ensure management of the materials to avoid impacts to groundwater.

To avoid long-term impacts to groundwater due to contamination from corrosion, the pipe will be coated with polyethylene consistent with Australian Standards and will be treated with cathodic protection to prevent corrosion.

I am satisfied with the further information provided by GAWB within the SEIS which provides that impacts to groundwater are minimal, and with the practices described to be included in EMPs and associated sub-plans, manageable. Impacts will not be long-term as the tunnelling works are localised and the duration of construction will be brief. These methods will work to avoid indirect impacts to threatened species such as the yellow chat.

Aquatic fauna

In terms of aquatic fauna, I note the EIS's findings that with the exception of the translocated populations of some fish species such as the Mary River cod (*Maccullochella peelii*) no species of aquatic invertebrates or freshwater fish listed as threatened under the EPBC Act are known to occur in the project area.

Other listed species known from catchments encompassing the project area include the Fitzroy River turtle (*Rheodytes leukops*), which is endemic in the Fitzroy River catchment. The project area does not represent optimal habitat for this species. Within the project area, the Fitzroy River at the intake point, and possibly Gavial Creek and the two off-stream lagoons (Lagoons 1 and 2), represent potential but low quality (i.e. not typically fast flowing or clear waters) habitat for this species. The larger freshwater waterbodies (Twelve Mile Creek and Larcom Creek) represent only marginal habitat for this species as their waters are typically not clear or fast flowing.

8.4 Listed threatened terrestrial flora

The EIS confirms that no targeted EPBC Act listed threatened plant species, including those that are the controlling provisions for the project, were observed during surveys of the corridor. One non-target species was observed, however it was a sterile specimen and absolute confirmation of its species was not possible. This was a vulnerable species found at Marble Creek which was possibly an individual ooline (*Cadellia pentastylis*).

Almost all of the species listed as threatened under the EPBC Act are scrub species (that is, species typically found in scrub). These species were assumed to be most likely to occur within remnant patches of softwood scrub or vine thicket, so targeted surveys for these species was restricted to these remnant patches. Partially cleared, or regrowth, areas of scrub were also surveyed as part of the vegetation surveys. None of the listed scrub species were found during the surveys.

In terms of flora species included in the controlling provisions of the project, four of the species, being whitewood (*Atalaya collina*), Cycas megacarpa, Cycas ophiolitica and Quassia bidwillii were assessed as having a 'fair' likelihood of occurrence in the project corridor. The EIS states that due to the species diversity within scrub remnants, it is not possible to assess the relative likelihood of impact to specific scrub species, without exact knowledge of the proposed location of the pipeline (for example, within a few metres), and extensive survey of all scrub species along that line.

The EIS provides that it is considered unlikely that mature scrub species will be disturbed in the pipeline ROW. Scrub at Marble Creek had the greatest likelihood of impact, but the crossing point was surveyed, and no rare or threatened species were observed at that point. There are areas of scrub regrowth within the corridor that will be cleared, but these species are not advanced in growth (that is, generally less than one metre high).

An analysis of the significant impact criteria for impacts to threatened flora indicates that there will not be a significant impact on matters of NES as a result of the project works, however the reduction in area of a low-growing patch of brigalow may occur. This matter is further discussed below.

In terms of areas where threatened flora was confirmed, or may be located in the project area, the EIS provided the following:

- The presence of semi-evergreen vine thickets of the Brigalow Belt (north and south) and Nandewar bioregions, as defined in the EPBC Act *Protected Matters Report* as a critically endangered ecological community.

  A small, unmapped patch of this scrub was observed on Nine Mile Road. In addition, there is the possible presence of whitewood (*Atalaya collina,* endangered) in this scrub. This scrub remnant may also contain the listed scrub species *Quassia bidwillii,* cossinia *(Cossinia australiana), Cupaniopsis shirleyana* and *Denhamia parvifolia.*

  Partial clearing of the semi-evergreen vine thickets at this site would only occur if the right of way (ROW) was extended across the existing road. If the corridor is located on the other side of the road which is the proponent's current intention, no scrub will be impacted.

- There is the possibility whitewood *(Atalaya collina*, endangered) may occur in the patch of scrub at a site on Twelve Mile Creek Road, close to Yarwun. The site is approximately 200m to the northeast of the corridor, so a search for this species was made for at least 2 km either side of that patch along the corridor in likely areas of habitat. A simultaneous search was made for the EPBC Act-listed scrub species *Quassia bidwillii,* Cossinia *(Cossinia Australiana), Cupaniopsis shirleyana* and *Denhamia parvifolia.*

- The forest communities east of Yarwun, dominated by spotted gum (*Corymbia citriodora)* and narrow-leafed ironbark (*Eucalyptus crebra)*, had *Macrozamia* sp. in the understorey in places. Young endangered cycads *Cycas megacarpa* or *Cycas ophiolitica* could appear to be *Macrozamia* spp.

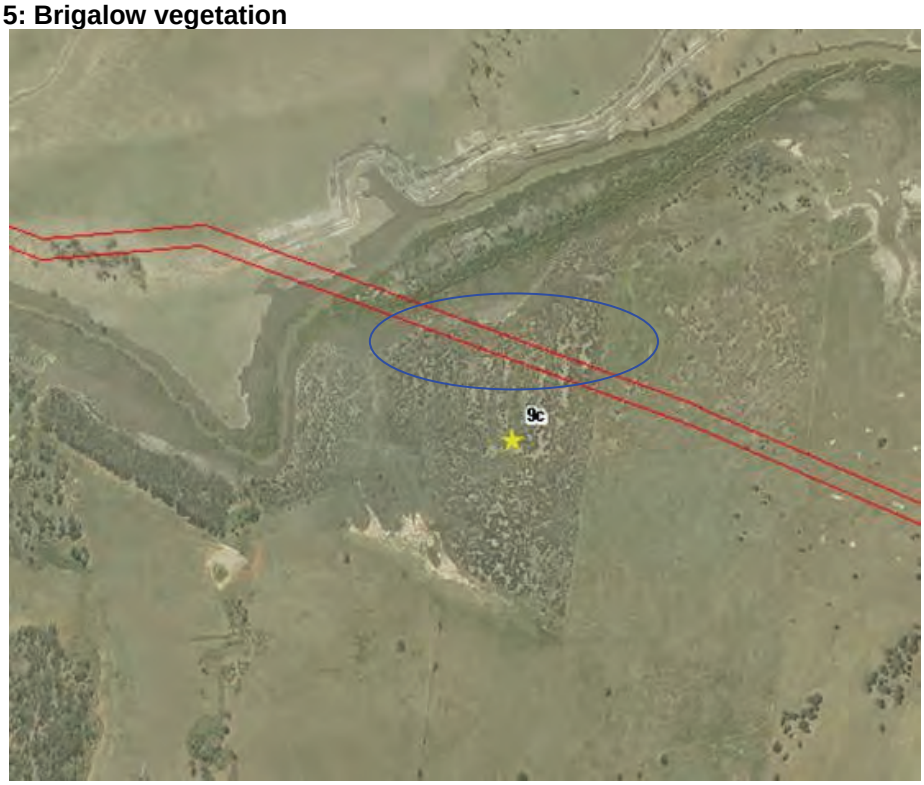
- Riverine crossings along the corridor may possibly have black ironbox *(Eucalyptus raveretiana)* in places, which is listed as vulnerable under the EPBC Act. All river crossings within the ROW (approximately 12 crossings from the extraction point to Yarwun) were inspected for this species where access was granted. This species was not observed in the ROW, but could possibly occur within the corridor.

- A 200 metre stretch of low-growing brigalow (*Acacia harpophylla*) with extensive gilgai (a high density of small waterholes or pools, each ranging from about five to ten metres in diameter) was observed on the south side of Inkerman Creek on Lot 68 DS141. This patch of vegetation occurred between the tidal interface of Inkerman Creek, and the taller brigalow further east towards the Toonda Port Alma Road. Brigalow (*Acacia harpophylla*) is an endangered ecological community under the EPBC Act.

  However, the height of the community on-site averaged approximately three metres, which GAWB states does not meet the structural requirements for the definition of remnant Brigalow (11–15m) under the VMA and the EPBC Act. Regrowth can be considered as remnant if it reaches 70 per cent of the height of its remnant height defined under the VMA, but the three metre height of this Brigalow was too short for this.

An aerial photo of the brigalow vegetation is included below at Figure 5. The red line indicates the pipeline corridor, with the blue circle showing the brigalow in the vicinity.

Figure 5: Brigalow vegetation



Given that the project will only be constructed when a drought or demand trigger requires its commencement, the status of this vegetation may have changed. Therefore, the proponent will need to confirm closer to construction if the vegetation is then of relevant height and structure to be classifiable as assessable vegetation under the VMA. Should that be the case, the legislative provisions relating to the vegetation will apply.

The brigalow is in the vicinity of microtunnelling works to be undertaken at Inkerman Creek to avoid sensitive riparian vegetation at this location. GAWB provides that as part of mitigation works for the brigalow vegetation, clearing for works will be kept to a maximum of 15m. I support this undertaking and make provision for it in the following condition.

Condition 12

A SAP is to be created and included in the project's EMP which provides that:

For the section of the pipeline works located at site 9c (as named in the project's EIS) to the south of Inkerman Creek, clearing of the brigalow vegetation is not to exceed 15 metres in width. Boundaries are to be clearly marked with high visibility fencing.

In terms of general mitigation measures that will be implemented to minimise the potential impact to threatened listed scrub species, the EIS provides that these include:

- a pre-construction survey of all scrub communities will be undertaken at the time the ROW is surveyed and will focus on the identification of threatened species along the proposed ROW
- vegetation clearing mitigation strategies as detailed in the EMP and discussed in section six of this report, will be utilised
- areas of remnant vegetation impacted by the alignment will be highlighted on all drawings and clearly marked in the field
- where possible, minor realignment of the ROW (i.e. a few metres to go around trees or shrubs)
- clearing boundaries will be clearly delineated on all drawings and in the field to define the extent of authorised clearing, with the boundaries not exceeding the construction area.

In assessment of the impacts on threatened listed scrub species, the EIS concludes that where these mitigation measures are implemented, along with the requirements to be included in the project's EMP, there is likely to be a negligible impact to scrub species along the corridor.

In terms of wetlands, these areas potentially provide habitat for threatened wetland species and are likely to be impacted in small part by the construction of the proposed pipeline. While trenching is proposed for wetlands because of their ephemeral nature (and size, in some cases), the implementation of the following mitigation measures will minimise the potential impacts:

- when trenching across part of the wetland, topsoil will be stockpiled, and replaced after works to enable ground layer species to re-establish
- wetlands will be restored to their former condition, post-construction.

Where these mitigation measures are implemented, along with the requirements outlined in the EMP, GAWB assesses that there is likely to be a negligible impact to threatened wetland species as a result of project works. To further address potential impacts in these areas, I have conditioned within section 7.7.6 of this report that construction in wetlands across the pipeline route is to occur only between May to September, inclusive.

While it is considered unlikely that rare and threatened species along the corridor will be impacted by the proposed project, GAWB confirms in the EIS that pre-construction surveys will be conducted. When any rare or threatened individuals remain within the construction footprint, these can be translocated (or replacements planted, depending on species) in consultation with DERM, resulting in a negligible residual impact.

To further mitigate impacts to threatened species that are confirmed in the field and will be impacted by project works, I require the following condition to be met.

Condition 13

The proponent is to prepare a threatened species translocation and propagation plan for inclusion in the project's EMP.

The translocation and propagation plan will demonstrate how a 'no net loss outcome' for these species will be achieved. The proponent is to consult with DERM in development of the plan.

8.6 Coordinator-General's conclusions on MNES

I am satisfied that based on the results of studies for threatened flora and fauna species in the project area and the low rate of confirmation of the species in the vicinity, and with the mitigation measures provided in the EIS and SEIS to minimise impacts to vegetation that may be suitable habitat for threatened species, it is unlikely the project will have a significant impact on matters of national environmental significance.

In addition, conditions placed by me in this report have been placed in order to further manage impacts to threatened species. For all conditions that I have stated require SAPs, these are to be included in the project's construction and operations EMPs. As provided in condition 1 of this report, approval of these plans, and the EMPs, by agencies such as DERM and QPIF is required prior to the EMPs being provided to me for final approval.

After considering information provided in the EIS and SEIS, I am satisfied that the impacts on matters of NES have been adequately addressed.

As previously discussed, this report will be provided to the Commonwealth Minister to enable a decision on approval of the controlled action for the project pursuant to section 133 of the EPBC Act.

Within this decision, should the Commonwealth find the project is able to proceed, appropriate conditioning of the project will be applied by the Commonwealth to provide for best practices to ensure protection of species of national environmental significance.

In providing conditions at Appendices 1 and 2, I have included conditions which seek to address any project impacts on matters of NES.

However, I respect that nothing within the conditions I have made limits the Commonwealth from providing otherwise with regard to matters that are protected within the EPBC Act.

9. Conclusion

Having regard to the documentation provided during the EIS process for the Gladstone to Fitzroy Pipeline project, I am satisfied that the requirements of the Queensland Government for impact assessment in accordance with the provisions of Part 4 of the SDPWO Act have been met.

The EIS process has provided sufficient information to all stakeholders to allow an informed evaluation of potential environmental impacts which could be attributed to the project. Careful management of the key construction and operational activities should ensure that any potential environmental impacts will be minimised or avoided.

GAWB has made project commitments throughout the EIS, compiled in Table 21.1 of the EIS. Furthermore, subsequent to the public and advisory agency review of the EIS, GAWB has made additional project commitments to satisfy the requirements of advisory agencies, which, along with the commitments of the EIS, are listed in Appendix 4 of this report. These commitments include actions beyond those required to meet statutory approvals, and their implementation will enhance the mitigation of potential adverse environmental impacts of the project. In addition, GAWB has developed a planning EMP to address specific environmental issues identified during the EIS process associated with each element of the project. This EMP will provide the basis for the construction EMP and operations EMP to be developed prior to the commencement of each stage.

In reaching a conclusion on the acceptability or otherwise of the management of potential impacts of the project, I have considered these project commitments and EMPs. Where necessary, I have extended particular commitments or components of the EMP and set

specific conditions and made recommendations that GAWB is to implement in accordance with best practice environmental management.

I consider that, on balance, there is strong positive net advantages to be derived from the project that will benefit Gladstone and the Central Queensland region.

Therefore, I recommend that the Gladstone-Fitzroy Pipeline project, as described in detail in the EIS and summarised in section 2.2 of this report, can proceed, subject to the conditions contained in Appendices 1-3 of this report and the project commitments made by GAWB contained in Appendix 4.

Despite the above, in the event of any inconsistency with the project as described in the EIS, SEIS and the Coordinator-General's conditions, the conditions shall prevail. GAWB and its agents, lessees, successors and assigns, as the case may be, must implement the conditions and recommendations of this report and all commitments presented in the EIS, SEIS and EMPs.

It is the responsibility of the proponent to ensure the project is carried out in accordance with the EIS and as modified by the SEIS and that full compliance with all imposed conditions is achieved. Since the principal condition of management imposed by this report is the EMP it is important for the Coordinator-General to be aware of when the project might commence and therefore when the EMP is likely to be finalised prior to construction. This may be indicated when the project reaches its major commitment milestones by the proponent. I therefore propose that this be reflected in a condition requiring the proponent to notify the Coordinator-General of such milestones.

Condition 14

The proponent shall notify the Coordinator-General when the set of approvals has been received that would allow the Gladstone-Fitzroy Pipeline Project to proceed. This includes acceptance by the Queensland Competition Authority, and commitment by the proponent's governing board for the financial implementation of the project.

Copies of this report will now be issued to:

- GAWB, in accordance with section 35(5)(a) of the SDPWO Act and its shareholding Minister
- DERM, in accordance with sections 43 and 53 of the SDPWO Act, with respect to:
  - recommended conditions to be attached to a development approval for ERAs under the EP Act
  - as assessment manager for development approval for operational works pursuant to the *Sustainable Planning Regulation 2009*, VMA and *Water Act 2000*
  - recommended conditions to apply to a community infrastructure designation for the project area if made
- DEEDI (particularly, QPIF), as assessment manager for development approval for operational works pursuant to the *Sustainable Planning Regulation 2009* and *Fisheries Act 1994*
- RRC and GRC, as assessment managers for development approval for any aspects of development within the local government areas, pursuant to the *Sustainable Planning Regulation 2009*
- DTMR, to approve the EMP prior to implementation, and with regard to permits required under the *Transport Infrastructure Act 1994*.

Other advisory agencies and private submitters who participated in the EIS process will also be provided with a copy of this report. In accordance with section 35(5)(b) of the SDPWO Act, a copy of this report will also be made publicly available on DIP's website at www.dip.qld.gov.au

10. Abbreviations and acronyms

The following acronyms have been used in this report:

ACH Act	*Aboriginal Cultural Heritage Act 2003*
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment Conservation Council
AS	Australian Standard
ASS	Acid sulfate soils (under SPP 2/02)
CCRCMP	Curtis Coast Regional Coastal Management Plan (under the CPMA)
CEMP	Construction Environmental Management Plan
CG	The Coordinator-General of the State of Queensland
CHMP	Cultural Heritage Management Plan (under the ACH Act)
CLR	Contaminated Land Register
CQRWSS	Central Queensland Regional Water Supply Strategy
CQU	Central Queensland University
CSS	(GAWB's) Contingent Supply Strategy
DEEDI	Department of Employment, Economic Development and Innovation
DERM	Department of Environment and Resource Management
DES	Department of Emergency Services
DEWHA	(Commonwealth) Department of the Environment, Water, Heritage and the Arts
DIP	Department of Infrastructure and Planning
DME	Department of Mines and Energy
DMR	Department of Main Roads
DPI&F	Department of Primary Industries and Fisheries
DTMR	Department of Transport and Main Roads
EAP	Emergency Access Plan
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMP (construction)	Construction Environmental Management Plan
EMP (operations)	Operations Environmental Management Plan
EMP (planning)	Planning Environmental Management Plan
EMR	Environmental Management Register
EPA	Environmental Protection Agency
EP Act	*Environmental Protection Act 1994*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
EPP	Environmental Protection Policy
EPP (Air)	*Environmental Protection (Air) Policy 1997*
EPP (Noise)	*Environmental Protection (Noise) Policy 1997*
EPP (Water)	*Environmental Protection (Water) Policy 1997*
EPP (Waste)	*Environmental Protection (Waste) Policy 2000*
EP Reg	*Environmental Protection Regulation 1998*
ERA	Environmentally Relevant Activity (under the EP Act)
EVR	Endangered, vulnerable and/or rare species (under the NC Act)
FHA	Fish Habitat Area (under the *Fisheries Act 1994*)
GAWB	Gladstone Area Water Board ("the proponent")
GQAL	Good quality agricultural land (under SPP 1/92)
GRC	Gladstone Regional Council
GSDA	Gladstone State Development Area
HAT	Highest Astronomical Tide
IAS	Initial Advice Statement
IDAS	Integrated Development Assessment System (SPA section 230)
IPA	*Integrated Planning Act 1997*
MCU	Material change of use (under SPA)
ML	Megalitres (one million litres)
GFPP	Gladstone–Fitzroy Pipeline project ("the project")
NC Act	*Nature Conservation Act 1994*

NC Regulation	*Nature Conservation (Wildlife) Regulation 1994*
NES	Matters of National Environmental Significance (under the EPBC Act)
NRW	Department of Natural Resources and Water
OEMP	Operational Environmental Management Plan
QCA	Queensland Competition Authority
QH	Queensland Health
QPIF	Queensland Primary Industries and Fisheries (within DEEDI)
QT	Queensland Transport
RCC	Rockhampton Regional Council
RE	Regional Ecosystem
RL	Relative level (elevation)
ROP	Water Resources Operation Plan (*Water Act 2000*)
ROW	(Pipeline) right of way (i.e. corridor width)
SDA	State Development Area
SDPWO Act	*State Development and Public Works Organisation Act 1971*
SEIS	Supplementary Environmental Impact Statement
SEVT	Semi-evergreen vine thicket
SGIC	Stanwell-Gladstone Infrastructure Corridor State Development Area
SPA	*Sustainable Planning Act 2009*
SPP	State Planning Policy
SPR	*Sustainable Planning Regulation 2009*
SWP	(GAWB's) Strategic Water Plan
TDS	Total dissolved solids
TIA	*Transport Infrastructure Act 1994*
TOR	Terms of Reference
VM Act	*Vegetation Management Act 1999*
WQO	Water Quality Objective
WRP	Water Resource Plan (under the *Water Act 2000*)

Notes:
Due to Machinery of Government changes initiated on 26 March 2009 (see Public Service Department Arrangements Notice (No.2) 2009), the following changes to Queensland Government departments referred to in this report occurred (in summary):

New Department (as of 26 March 2009)	**Previous Department/s**
Department of Employment, Economic Development and Innovation – DEEDI	• Department of Primary Industries and Fisheries (DPI&F)
Department of Environment and Resource Management – DERM	• Environmental Protection Agency (EPA) • Department of Natural Resources and Water (NRW
Department of Transport and Main Roads – DTMR	• Department of Main Roads (DMR) • Queensland Transport (QT)
Department of Community Safety	• Department of Emergency Services (DES)

Appendix 1: Coordinator-General's conditions for the Gladstone–Fitzroy Pipeline project – State Development Areas

Aspects of development

Material change of use (MCU) made assessable development under the Stanwell–Gladstone Infrastructure Corridor (SGIC) State Development Area development scheme.

MCU made assessable development under the Gladstone State Development Area (GSDA) development scheme.

Conditions provided by the Coordinator-General (CG), in accordance with section 52 of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and pursuant to section 9.5(5) of the development scheme for the SGIC to be attached to any development approval for MCU within the SGIC if granted by the assessment manager under the SDPWO Act.

Conditions provided by the CG, in accordance with section 52 of the SDPWO Act and pursuant to section 9.5(5) of the development scheme for the GSDA, to be attached to any development approval for MCU within the GSDA if granted by the assessment manager under the SDPWO Act.

As Coordinator-General, I will be the assessment manager for MCU development approvals required for the Gladstone–Fitzroy Pipeline project for components located within the SGIC and the GSDA.

Condition 1

Part A – construction EMP

Within 60 business days of appointing a construction contractor for the project, and at least 30 business days prior to the commencement of any significant construction works on the project, the proponent and/or its contractor(s) shall finalise the Gladstone-Fitzroy Pipeline project construction EMP and submit to the Coordinator-General for approval.

The construction EMP shall contain control plans for at least the following:

- project environmental management
- climate impacts
- land use and infrastructure
- erosion and sedimentation
- contaminated land
- acid sulfate soils
- vegetation clearing
- introduced/pest fauna
- fauna management and protection

- rehabilitation and revegetation
- weed management
- water resources and water quality
- air environment
- waste management
- hydrotesting and commissioning
- noise and vibration management
- transport and access
- cultural heritage
- social and economic environment – complaints procedure
- handling and storage of dangerous goods
- health and safety management
- emergency ,management
- landscape and visual amenity management

In addition, the EMP shall contain special area plans (SAPs) for locations including those specified in other conditions in this approval.

In finalising the construction EMP, the proponent must ensure that:

1) all relevant project commitments included in Appendix 4 of the Coordinator-General's report for the Gladstone-Fitzroy Pipeline are included in the EMP

2) the Department of Environment and Resource Management (DERM), the Department of Transport and Main Roads (DTMR) and Queensland Primary Industries and Fisheries (QPIF) support the construction EMP for the project.

The proponent must submit with the construction EMP a report detailing any consultation activities and evidence of the agencies' support.

Audits must be undertaken on a six monthly basis during construction by an independent and appropriately qualified person to determine whether the project's activities are in compliance with the construction EMP. A report must be prepared by the independent and appropriately qualified person and provided to the Coordinator-General within 30 business days of the end of the monitoring period to which the audit relates. The report must include details of any non-compliance, corrective actions, revised practices and evidence to support the findings of the audit.

The audit period will begin on commencement of construction and end once all audit report corrective actions have been completed.

Part B – operations EMP

The proponent and/or its contractor(s) shall finalise the Gladstone-Fitzroy Pipeline project operations EMP and submit to the Coordinator-General for approval at least 30 business days prior to the proposed operations commencement date.

The operations EMP shall contain control plans for at least the following:

- project environmental management
- climate impacts

- land use and infrastructure
- erosion and sedimentation
- contaminated land
- acid sulfate soils
- vegetation clearing
- introduced/pest fauna
- fauna management and protection
- weed management
- water resources and water quality
- air environment
- waste management
- hydrotesting and commissioning
- noise and vibration management
- transport and access
- cultural heritage
- social and economic environment – complaints procedure
- handling and storage of dangerous goods
- health and safety management
- emergency management
- landscape and visual amenity management

In addition, the EMP shall contain Special Area Plans for locations including those specified in other conditions in this approval.

In finalising the operations EMP, the proponent must ensure that:

1) all relevant project commitments included in Appendix 4 of this report are included in the operations EMP

2) DERM, DTMR and QPIF support the operations EMP for the project

The proponent must submit with the operations EMP a report detailing any consultation activities and evidence of the agencies' support.

The Coordinator-General, through the Department of Infrastructure and Planning (DIP), is the responsible agency for this condition.

Condition 2

State-controlled roads

Within 90 business days of appointing a construction contractor for the project, and prior to the commencement of any significant construction works on the project, the proponent shall:

a) prepare a road use management plan (RMP) for all use of state-controlled and other roads for each phase of the project, developed from the transport and access control

plan contained within the planning EMP. The RMP will detail traffic volumes, proposed transport routes, required road infrastructure maintenance and/or upgrades to mitigate road impacts, any necessary conditions about access/connection to public roads, transport scheduling, dust control and road safety. DTMR must approve the plan prior to implementation

b) enter into a road infrastructure agreement with DTMR to formalise contributions towards any necessary road maintenance and upgrades identified in the finalised RMP to ameliorate any adverse impacts of the road use by the project on the assets of DTMR. This shall include the proposed upgrade of Rockhampton Ridgelands Road (to provide direct access for the Alton Downs WTP) and the Laurel Banks Road/Rockhampton Ridgelands Road intersection.

If an infrastructure agreement between the proponent and DTMR is not concluded within six months of the submission of the road use management plan, either party may refer the matter to the Coordinator-General.

DTMR is the agency responsible for monitoring compliance with this condition.

Condition 3

Council-controlled roads

Within 90 business days of appointing a construction contractor for the project, and prior to the commencement of any significant construction works on the project, the proponent shall:

a) prepare road-use management plans (RMP) for all use of Rockhampton Regional Council (RRC) and Gladstone Regional Council (GRC)-controlled roads for each phase of the project, developed from the transport and access control plan contained within the planning EMP. The respective RMP will detail traffic volumes, proposed transport routes, required road infrastructure maintenance and/or upgrades to mitigate road impacts, any necessary conditions about access/connection to public roads, transport scheduling, dust control and road safety. RRC or GRC must approve the respective plan prior to implementation

b) enter into road infrastructure agreements with RRC and/or GRC to formalise contributions towards any necessary road maintenance and upgrades identified in the finalised RMPs to ameliorate any adverse impacts of the road use by the project on the assets of RRC and GRC.

   This shall include the following actions, which are to be implemented prior to construction in the area commencing:

   - the proposed upgrade of a 2.3 kilometre section of Laurel Bank Road
   - bitumen sealing of Ski Gardens Road from Laurel Bank Road to the proposed Fitzroy River Intake site. This bitumen sealing should be of a standard which provides a pavement life suitable for permanent light traffic after the pipeline construction is completed, and be handed over to RRC in this condition
   - two access points on Rockhampton-Ridgeland Road, one with proposed Basic Access Right (BAR) treatment, and another on Bajool Port Road.

If infrastructure agreements between the proponent and RRC and/or GRC are not concluded within six months of the submission of the RMP, either party may refer the matter to the Coordinator-General.

RRC and GRC are the agencies responsible for monitoring compliance with this condition within their respective jurisdictions.

Condition 4

Within 90 business days of appointing a construction contractor for the project, and prior to the commencement of any significant construction works on the project, the proponent shall prepare traffic management plans (TMP) for:

a) access to all roads
b) all pipeline road and rail crossings
c) construction of all road infrastructure upgrades.

The proponent shall present the TMPs for review by DTMR, the Queensland Police Service, RRC, GRC and Queensland Rail, and take account of the reviews.

The proposed plans shall incorporate a provision that, prior to commencing any program of oversize transport movements that may be required for the construction of the project, the proponent will consult with DTMR, the Queensland Police Service and RRC and/or GRC.

The proponent shall implement the TMPs during construction and commissioning of the project and construction of any access road intersection.

DTMR is the agency responsible for monitoring compliance with this condition.

Condition 5

The project's construction EMP is to include a rehabilitation and revegetation control plan which includes the following measures, to be undertaken progressively as works are staged:

- recontouring and compaction
- topsoil replacement
- weed control
- erosion protection
- revegetation, consistent with surrounding conditions.

The Coordinator-General, through DIP, is the responsible agency for this condition.

Condition 6

Part A

SAPs are to be included in the construction EMP which indicate that microtunnelling is the construction method at the following locations:

1. Gavial Creek
2. Inkerman Creek
3. Bob's Creek
4. Horrigan Creek
5. Raglan Creek

The SAPs are to include provision that the tunnel entry and exit pits are to be located outside of the riparian zone for each of the crossings.

Part B

SAPs are to be developed and implemented for inclusion in the construction EMP for works at the following waterway crossings:

1. Lion Creek
2. Larcom Creek.

These SAPs are to indicate that:

- where possible, existing riparian vegetation is to be avoided
- construction works are to be limited to no greater than 20 metres in width within riparian vegetation and the bed and banks of the crossings
- construction works are to be limited to occur between May to September, inclusive.

Part C

For the following crossings:

1. Inkerman Creek
2. Horrigan Creek
3. Raglan Creek

- The SAPs are to include provision that construction works are to be limited to occur between May to September, inclusive.

Part D

For the following creek crossings:

1. Marble Creek
2. Twelve Mile Creek

SAPs are to be developed and implemented for inclusion in the Construction EMP that include provision for:

- construction works within riparian vegetation and the bed and banks of the crossings is not to exceed 15 metres in width
- construction works are to be limited to occur between May to September, inclusive.

The Coordinator-General, through DIP, is the responsible agency for this condition.

Condition 7

Prior to submitting any application for operational works for disturbance of marine plants in the Raglan Creek area, the proponent is to work closely with QPIF to reduce mangrove disturbances and is to develop a SAP for works in mangrove areas for QPIF's consideration.

The approved SAP is to be included in the project's construction and operations EMPs.

The Coordinator-General, through DIP, is the agency responsible for this condition.

Condition 8

The construction EMP is to include provision that construction in wetlands located within the project's pipeline corridor will occur only between May and September, inclusive.

The EMP is to further indicate that:

- when trenching across part of a wetland, topsoil will be stockpiled, and replaced after works to enable ground layer species to re-establish
- wetlands will be restored post-construction.

The Coordinator-General, through DIP, is the agency responsible for this condition.

Condition 9

The project's construction EMP is to contain a SAP to apply to the vicinity of Casuarina Road where the presence of the ornamental snake was confirmed during the EIS process. The SAP is to detail species-specific awareness, management (including management of animals captured by the trench) and site rehabilitation strategies.

Condition 10

Should, in his assessment of the controlling provisions of the project under the EPBC Act, the Commonwealth Minister for the Environment, Heritage and the Arts determine that the project may proceed, the proponent will make available $50 000 AUD for the funding of a research initiative into the critically endangered yellow chat.

Within four months of the Commonwealth's decision, the proponent is required to provide advice to DERM of its contracting for the undertaking of studies to evaluate the dependence on habitat inundation to support the species' breeding regime.

Condition 11

A SAP for areas in proximity to confirmed yellow chat habitat, that is, construction works in areas along the pipeline alignment between the Port Alma Railway and Horrigan Creek, is to be created and included in the project's EMP.

The SAP is to include the following practices:

- construction works are to be undertaken during the period between May and September inclusive
- for those crossings not being microtunnelled, width of disturbance for each watercourse crossing is to be reduced to 15 metres
- works will be programmed to ensure that trenched crossings will be completed and stabilised within one week
- creek water levels will be monitored during creek crossing construction to allow early identification of changed water levels that may affect yellow chat habitat and appropriate corrective action to be undertaken
- water from the coffer dam will be pumped downstream so that downstream flows are not reduced
- permanent construction roads will not be built across creeks or wetlands
- pre- and post-works surveys of the creek and vertical soil profiles will be undertaken to ensure the creek profile is restored.

Condition 12

A SAP is to be created and included in the project's EMP which provides that:

For the section of the pipeline works located at site 9c (as named in the project's EIS) to the south of Inkerman Creek, clearing of the brigalow vegetation is not to exceed 15 metres in width. Boundaries are to be clearly marked with high visibility fencing.

Condition 13

The proponent is to prepare a threatened species translocation and propagation plan for inclusion in the project's EMP.

The translocation and propagation plan will demonstrate how a 'no net loss outcome' for these species will be achieved. The proponent is to consult with DERM in development of the plan.

Condition 14

The proponent shall notify the Coordinator-General when the set of approvals has been received that would allow the Gladstone-Fitzroy Pipeline Project to proceed. This includes acceptance by the Queensland Competition Authority, and commitment by the proponent's governing board for the financial implementation of the project.

Appendix 2: Coordinator-General's recommended conditions for the Gladstone–Fitzroy Pipeline project – requirements for attachment to a Designation of Land for Community Infrastructure

In the event that GAWB requests the relevant Minister to designate land for community infrastructure for some or all of the project, and the Minister then does pursue the designation, this appendix, in accordance with section 43 of the SDPWO Act, provides recommended conditions for the project approval.

Similarly, if a designation of land for community infrastructure does not eventuate, the conditions provided within this appendix shall apply to any Material Change of Use (MCU) approvals required within the council areas, in accordance with the *Sustainable Planning Act 2009.*

If the works are exempt from MCUs, the conditions prevail as the Coordinator-General's imposed conditions.

Condition 1

Part A – construction EMP

Within 60 business days of appointing a construction contractor for the project, and at least 30 business days prior to the commencement of any significant construction works on the project, the proponent and/or its contractor(s) shall finalise the Gladstone-Fitzroy Pipeline project construction EMP and submit to the Coordinator-General for approval.

The construction EMP shall contain control plans for at least the following:

- project environmental management
- climate impacts
- land use and infrastructure
- erosion and sedimentation
- contaminated land
- acid sulfate soils
- vegetation clearing
- introduced/pest fauna
- fauna management and protection
- weed management
- rehabilitation and revegetation
- water resources and water quality

- air environment
- waste management
- hydrotesting and commissioning
- noise and vibration management
- transport and access
- cultural heritage
- social and economic environment – complaints procedure
- handling and storage of dangerous goods
- health and safety management
- emergency management
- landscape and visual amenity management

In addition, the EMP shall contain special area plans (SAPs) for locations including those specified in other conditions in this approval.

In finalising the construction EMP, the proponent must ensure that:

1) all relevant project commitments included in Appendix 4 of the Coordinator-General's report for the Gladstone-Fitzroy Pipeline are included in the EMP

2) the Department of Environment and Resource Management (DERM), the Department of Transport and Main Roads (DTMR) and Queensland Primary Industries and Fisheries (QPIF) support the construction EMP for the project.

The proponent must submit with the construction EMP a report detailing any consultation activities and evidence of the agencies' support.

Audits must be undertaken on a six monthly basis during construction by an independent and appropriately qualified person to determine whether the project's activities are in compliance with the construction EMP. A report must be prepared by the independent and appropriately qualified person and provided to the Coordinator-General within 30 business days of the end of the monitoring period to which the audit relates. The report must include details of any non-compliance, corrective actions, revised practices and evidence to support the findings of the audit.

The audit period will begin on commencement of construction and end once all audit report corrective actions have been completed.

Part B – operations EMP

The proponent and/or its contractor(s) shall finalise the Gladstone-Fitzroy Pipeline project operations EMP and submit to the Coordinator-General for approval at least 30 business days prior to the proposed operations commencement date.

The operations EMP shall contain control plans for at least the following:

- project environmental management
- climate impacts
- land use and infrastructure
- erosion and sedimentation

- contaminated land
- acid sulfate soils
- vegetation clearing
- introduced/pest fauna
- fauna management and protection
- weed management
- water resources and water quality
- air environment
- waste management
- hydrotesting and commissioning
- noise and vibration management
- transport and access
- cultural heritage
- social and economic environment – complaints procedure
- handling and storage of dangerous goods
- health and safety management
- emergency management
- landscape and visual amenity management

In addition, the EMP shall contain SAPs for locations including those specified in other conditions in this approval.

In finalising the operations EMP, the proponent must ensure that:

1) all relevant project commitments included in Appendix 4 of this report are included in the operations EMP

2) DERM, DTMR and QPIF support the operations EMP for the project

The proponent must submit with the operations EMP a report detailing any consultation activities and evidence of the agencies' support.

The Coordinator-General, through DIP, is the responsible agency for this condition.

Condition 2

State-controlled roads

Within 90 business days of appointing a construction contractor for the project, and prior to the commencement of any significant construction works on the project, the proponent shall:

a) prepare a RMP for all use of state-controlled and other roads for each phase of the project, developed from the Transport and Access Control Plan contained within the planning EMP. The RMP will detail traffic volumes, proposed transport routes, required road infrastructure maintenance and/or upgrades to mitigate road impacts, any necessary conditions about access/connection to public roads, transport

scheduling, dust control and road safety. DTMR must approve the plan prior to implementation

b) enter into a road infrastructure agreement with DTMR to formalise contributions towards any necessary road maintenance and upgrades identified in the finalised RMP to ameliorate any adverse impacts of the road use by the project on the assets of DTMR. This shall include the proposed upgrade of Rockhampton Ridgelands Road (to provide direct access for the Alton Downs WTP) and the Laurel Banks Road / Rockhampton Ridgelands Road intersection.

If an infrastructure agreement between the proponent and DTMR is not concluded within six months of the submission of the road use management plan, either party may refer the matter to the Coordinator-General.

DTMR is the agency responsible for monitoring compliance with this condition.

Condition 3

Council-controlled roads

Within 90 business days of appointing a construction contractor for the project, and prior to the commencement of any significant construction works on the project, the proponent shall:

a) prepare road-use management plans (RMP) for all use of RRC and GRC-controlled roads for each phase of the project, developed from the transport and access control plan contained within the planning EMP. The respective RMP will detail traffic volumes, proposed transport routes, required road infrastructure maintenance and/or upgrades to mitigate road impacts, any necessary conditions about access/connection to public roads, transport scheduling, dust control and road safety. RRC or GRC must approve the respective plan prior to implementation.

b) enter into a road infrastructure agreement with RRC and/or GRC to formalise contributions towards any necessary road maintenance and upgrades identified in the finalised RMPs to ameliorate any adverse impacts of the road use by the project on the assets of RRC and GRC.

   This shall include the following actions, which are to be implemented prior to construction in the area commencing:

   - the proposed upgrade of a 2.3 kilometre section of Laurel Bank Road
   - bitumen sealing of Ski Gardens Road from Laurel Bank Road to the proposed Fitzroy River Intake site. This bitumen sealing should be of a standard which provides a pavement life suitable for permanent light traffic after the pipeline construction is completed, and be handed over to RRC in this condition.
   - two access points on Rockhampton-Ridgeland Road, one with proposed Basic Access Right (BAR) treatment, and another on Bajool Port Road.

If infrastructure agreements between the proponent and RRC and/or GRC are not concluded within six months of the submission of the RMP, either party may refer the matter to the Coordinator-General.

RRC and GRC are the agencies responsible for monitoring compliance with this condition within their respective jurisdictions.

Condition 4

Within 90 business days of appointing a construction contractor for the project, and prior to the commencement of any significant construction works on the project, the proponent shall prepare traffic management plans (TMP) for:

a) access to all roads
b) all pipeline road and rail crossings
c) construction of all road infrastructure upgrades.

The proponent shall present the TMPs for review by DTMR, the Queensland Police Service, RRC, GRC and Queensland Rail, and take account of the reviews.

The proposed plans shall incorporate a provision that, prior to commencing any program of oversize transport movements that may be required for the construction of the project, the proponent will consult with DTMR, the Queensland Police Service and RRC and/or GRC.

The proponent shall implement the TMPs during construction and commissioning of the project and construction of any access road intersection.

DTMR is the agency responsible for monitoring compliance with this condition.

Condition 5

The project's construction EMP is to include a rehabilitation and revegetation control plan which includes the following measures, to be undertaken progressively as works are staged:

- recontouring and compaction
- topsoil replacement
- weed control
- erosion protection
- revegetation, consistent with surrounding conditions.

The Coordinator-General, through DIP, is the responsible agency for this condition.

Condition 6

Part A

SAPs are to be included in the construction EMP which indicate that microtunnelling is the construction method at the following locations:

1. Gavial Creek
2. Inkerman Creek
3. Bob's Creek
4. Horrigan Creek
5. Raglan Creek

The SAPs are to include provision that the tunnel entry and exit pits are to be located outside of the riparian zone for each of the crossings.

Part B

SAPs are to be developed and implemented for inclusion in the Construction EMP for works at the following waterway crossings:

1. Lion Creek
2. Larcom Creek.

These SAPs are to indicate that:

- where possible, existing riparian vegetation is to be avoided
- construction works are to be limited to no greater than 20 metres in width within riparian vegetation and the bed and banks of the crossings
- construction works are to be limited to occur between May to September, inclusive.

Part C

For the following crossings:

1. Inkerman Creek
2. Horrigan Creek
3. Raglan Creek

- The SAPs are to include provision that construction works are to be limited to occur between May to September, inclusive.

Part D

For the following creek crossings:

1. Marble Creek
2. Twelve Mile Creek

SAPs are to be developed and implemented for inclusion in the construction EMP that include provision for:

- construction works within riparian vegetation and the bed and banks of the crossings is not to exceed 15 metres in width
- construction works are to be limited to occur between May to September, inclusive.

The Coordinator-General, through DIP, is the responsible agency for this condition.

Condition 7

The proponent is to prepare a threatened species translocation and propagation plan for inclusion in the project's EMP.

The translocation and propagation plan will demonstrate how a 'no net loss outcome' for these species will be achieved. The proponent is to consult with DERM in development of the plan.

Condition 8

The construction EMP is to include provision that construction in wetlands located within the project's pipeline corridor will occur only between May and September, inclusive.

The EMP is to further indicate that:

- when trenching across part of a wetland, topsoil will be stockpiled, and replaced after works to enable ground layer species to re-establish
- wetlands will be restored post-construction.

The Coordinator-General, through DIP, is the agency responsible for this condition.

Appendix 3: Draft development approval

Construction and operation of the Alton Downs Water Treatment Plant

Sustainable Planning Act 2009

DERM Permit[9] number: **xxxxxxxxxxxx**

EPA Permit[1] number:	xxxxxxxxxxxx
Assessment Manager reference:	316990
Date application received by EPA:	xx-xxx-xx
Permit[1] Type:	Development Approval involving an ERA
Date of Decision:	xx-xxx-xx
Decision:	Conditions that must attach to any development approval
Relevant Laws and Policies:	*Environmental Protection Act 1994* and any related statutory instruments and subordinate legislation
Jurisdiction(s):	Material change of use of premises – For an environmentally relevant activity. *Sustainable Planning Regulation 2009*, Schedule 3, Part 1, Table 2, item 1.

Development description

Property	Lot/Plan	Aspect of development
Alton Downs Water Treatment Plant	To be provided	ERA 64 (3) Water treatment – treating 10ML or more raw water in a day ERA 8 (4) (5) Chemical Storage – Storing 200t or more of chemicals that are solids or gases; storing 200t or more of chemicals that are liquids.

Additional information for applicants

Reason(s) for inclusion of conditions

In accordance with section 289 of the *Sustainable Planning Act 2009*, the reason(s) for inclusion of conditions stated in this permit required by the concurrence agency response for the application are as follows.

The conditions are included pursuant to section 73B of the *Environmental Protection Act 1994.*

Contaminated Land

It is a requirement of the *Environmental Protection Act 1994* that if an owner or occupier of

[9] Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Department of Environment and Resource Management and Queensland Parks and Wildlife.

land becomes aware a Notifiable Activity (as defined by Schedule 3 of the *Environmental Protection Act 1994* is being carried out on the land or that the land has been affected by a hazardous contaminant, they must, within 30 days after becoming so aware, give notice to the Department of Environment and Resource Management.

Environmentally Relevant Activities
The aforementioned description of any environmentally relevant activity (ERA) for which this permit is issued is simply a restatement of the ERA as prescribed in the legislation at the time of issuing this permit. Where there is any conflict between the abovementioned description of the ERA for which this permit is issued and the conditions specified herein as to the scale, intensity or manner of carrying out of the ERA, then such conditions prevail to the extent of the inconsistency.

This permit authorises the ERA. It does not authorise environmental harm unless a condition within this permit explicitly authorises that harm. Where there is no such condition, or the permit is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

In addition to this permit, the person to carry out the ERA must be a registered operator under the *Environmental Protection Act 1994*. For the person to become a registered operator, they must apply for a registration certificate under section 73F of the *Environmental Protection Act 1994*.

CONDITIONS OF APPROVAL

Agency interest: General

G1 **Prevent and/or minimise likelihood of environmental harm**
In carrying out an ERA to which this approval relates, all reasonable and practicable measures must be taken to prevent and / or to minimise the likelihood of environmental harm being caused.

G2 **Maintenance of measures, plant and equipment**
The operator of an ERA to which this approval relates must:
(a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this approval
(b) maintain such measures, plant and equipment in a proper and efficient condition
(c) operate such measures, plant and equipment in a proper and efficient manner.

In this development condition, “plant and equipment” includes:

(i) plant and equipment used to prevent and/or minimise the likelihood of environmental harm being caused
(ii) devices and structures to contain foreseeable escapes of contaminants and waste
(iii) devices and structures used to store handle, treat and dispose of waste
(iv) monitoring equipment and associated alarms
(v) backup systems that act in the event of failure of a primary system

G3 **Site based management plan**
From commencement of an ERA to which this approval relates, a site based management plan (SBMP) must be implemented. The SBMP must identify all sources of environmental harm, including but not limited to the actual and potential release of all contaminants, the potential impact of these sources and what actions will be taken to prevent the likelihood of environmental harm being caused. The SBMP must also provide for the review and 'continual improvement' in the overall environmental performance of all ERAs that are carried out.

The SBMP must address the following matters:
(a) environmental commitments - a commitment by senior management to achieve specified and relevant environmental goals
b) identification of environmental issues and potential impacts

(c) control measures for routine operations to minimise likelihood of environmental harm
(d) contingency plans and emergency procedures for non-routine situations
(e) organisational structure and responsibility
(f) effective communication
(g) monitoring of contaminant releases
(h) conducting environmental impact assessments
(i) staff training
(j) record keeping
(k) periodic review of environmental performance and continual improvement.

G4 The site based management plan must not be implemented or amended in a way that contravenes any condition of this approval.

G5 The site based management plan must be kept in a location readily accessible to personnel carrying out the activity and must be provided to the administering authority along with any amendments.

G6 **Third party environmental auditing**

Compliance with the conditions of this approval must be audited within 28 days of commencement of the activity.

G7 The audit detailed in condition [G6] must be conducted by a suitably qualified third party auditor, nominated by the approval holder and accepted by the administering authority.

G8 In relation to the audit required by condition [G6], the auditor must submit a final version of the auditor's report to the administering authority within 28 days of completing the audit.

G9 This condition applies to the site based management plan required by condition [G3]. A suitably qualified third party auditor must certify in writing that the site based management plan has been prepared:

(a) by a suitably qualified person with at least 5 years experience in the relevant area

(b) in a manner that is consistent with the requirements of condition [G3]

(c) by having regard to, and appropriately applying, the relevant guidelines (being those applicable on a national, state or a regional basis) which the third party auditor considers should be applied in undertaking the site based management plan including relevant Environment Australia, ANZECC and EPA/DERM guidelines where published.

G10 The total financial cost of the audit(s) will be the responsibility of the holder of this approval.

G11 **Alterations**
No change, replacement or operation of any plant or equipment is permitted if the change, replacement or operation of the plant or equipment increases, or is likely to substantially increase, the risk of environmental harm above that expressly provided by this development approval.

G12 **Trained operators**

All persons engaged in the conduct of the activity, including but not limited to employees and contract staff, must be:

(a) trained in the procedures and practices necessary to
    (i) comply with the conditions of this development approval
    (ii) prevent environmental harm during normal operation and emergencies or
(b) under the close supervision of such as trained person.

G13 **Records**
Record, compile and keep all monitoring results required by this approval and present this information to the administering authority when requested.

G14 **Monitoring**
A competent person(s) must conduct any monitoring required by this approval.

G15 **Equipment calibration**
All instruments, equipment and measuring devices used for measuring or monitoring in accordance with any condition of this approval must be calibrated, and appropriately operated and maintained.

G16 **Spill kit**
An appropriate spill kit, personal protective equipment and relevant operator instructions/emergency procedure guides for the management of wastes and chemicals associated with the ERA must be kept at the site, and in each vehicle used if the activity is a mobile ERA.

G17 **Spill kit training**
Anyone operating under this approval must be trained in the use of the spill kit.

G18 **Notification**
The operator of an ERA to which this approval relates must contact the administering authority as soon as practicable after becoming aware of any release of contaminants not in accordance with the conditions of this approval.

G19 A written notice detailing the following information must be provided to the administering authority within 14 days of any advice provided in accordance with condition [G18]:

(a) the name of the operator, including their approval/registration number

(b) the name and telephone number of a designated contact person

(c) quantity and substance released

(d) vehicle and registration details

(e) person/s involved (driver and any others)

(f) the location and time of the release

(g) the suspected cause of the release

(h) a description of the effects of the release

(i) the results of any sampling performed in relation to the release

(j) actions taken to mitigate any environmental harm caused by the release

(k) proposed actions to prevent a recurrence of the release.

G20 **Emergency Response Plan.**

The operator of an ERA to which this approval relates must develop and implement an Emergency Response Plan to manage the environmental impacts of any uncontrolled release of contaminants to the environment.

G21 The Emergency Response Plan must address at least the following matters

(a) response procedures to be implemented to reduce the likelihood of any release of contaminants to the environment
(b) response procedures to prevent any further release or if such is not practicable, minimise the extent and duration of any release to the greatest practicable extent
(c) the practice and procedures to be employed to restore the environment, or if such is not practicable, mitigate any environmental impacts of the release
(d) a description of the resources to be used in response to such a release
(e) the training of staff that will be called upon to respond to a release
(f) procedures to investigate the cause of any release, and where necessary, implement remedial actions to reduce the likelihood of recurrence of a similar event
(g) the provision and availability of documented procedures to staff attending any release to enable them to effectively respond
(h) timely and accurate reporting of the circumstance and nature of release events to the administering authority.

G22 A copy of the Emergency Response Plan and any subsequent amendment of the Emergency Response Plan must be kept at the approved place and be available for examination by Emergency Services Personnel or an authorised person on request.

G23 **Overfill protection**

The fill point to any bulk storage tank must be fitted with an overfill-protection device.

G24 **Alarm/Isolation system**

An integrated alarm and fuel closure system must be fitted and activated in the following situations:

(a) when any emergency stop device is activated and/or
(b) when any leak or loss of plant integrity is detected.

G25 **Environmental impact analysis reporting**

The holder of this development approval must arrange for the monitoring data gathered in accordance with this development approval to be analysed and interpreted to assess the nature and extent of any environmental impact of the environmentally relevant activity. The data, analysis and assessment must be submitted to the administering authority with each annual return.

Agency interest: Air

A1 **Noxious or offensive odours**

Notwithstanding any other condition of this environmental authority no release of contaminants from the licensed place is to cause a noxious or offensive odour beyond the boundaries of the licensed place.

A2 **Dust nuisance**

The release of dust and/or particulate matter resulting from the ERA must not cause an environmental nuisance at any nuisance sensitive or commercial place.

A3 Dust and particulate matter must not exceed any of the following levels when measured at any nuisance sensitive or commercial place:

(a) dust deposition of 120 milligrams per square metre per day over a 30 day averaging period, when monitored in accordance with Australian Standard AS/NZS 3580.10.1:2003 : Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method (or more recent editions)
(b) a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (um) (PM10) suspended in the atmosphere of 50 micrograms per cubic metre (with five days exceedances allowed in any one year period). These 5 days exceedances per year are based on the natural events such as bushfires and dust storms.

When monitored in accordance with:

(i) Australian Standard AS 3580.9.6 of 2003 (or more recent editions) 'Ambient air – Particulate matter – Determination of suspended particulate PM10 high-volume sampler with size-selective inlet – Gravimetric method' or

(ii) Any alternative method of monitoring PM10 which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.

A4 When requested by the administering authority, dust and particulate monitoring must be undertaken to investigate any complaint of environmental nuisance caused by dust and/or particulate matter, and the results notified within 14 days to the administering authority following completion of monitoring. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place and at upwind control sites and must include:

(a) for a complaint alleging dust nuisance, dust deposition

(b) for a complaint alleging adverse health effects caused by dust, the concentration per cubic metre of particulate matter with an aerodynamic diameter of less than 10 micrometre (um) (PM10) suspended in the atmosphere over a 24 hour averaging time.

A5 **General dust control**
For the purpose of avoiding any release of dust or particulate matter from the approved place which could cause an environmental nuisance, the following measures must be taken:

(a) stockpiles must be maintained using all reasonable and practicable measures to minimise the release of wind blown dust or particulate matter to the atmosphere. Reasonable and practicable measures may include, but are not limited to, anemometer switching systems which trigger operation of effective water spray systems during winds likely to generate such releases; use of approved dust suppressant; shielding and storage in bunkers

(b) trafficable areas must be maintained using all reasonable and practicable measures to minimise the release of windblown dust or traffic generated dust to the atmosphere. Reasonable and practicable measures may include, but are not limited to, sealing with bitumen or other suitable material; keeping surfaces clean; use of water sprays; adoption and adherence to speed limits; use of approved dust suppressants; and wind breaks

(c) raw material preparation plants and external transfer conveyors must be operated and maintained using all reasonable and practicable measures to minimise the release of wind blown dust or particulate matter to the atmosphere. Reasonable and practicable measures may include, but are not limited to, transfer of materials in a moist state; enclosure or sealing of conveyors; use of water sprays at transfer points; shielding; and wind breaks.

Agency Interest: Land

L1 **Preventing contaminant release to land**
Contaminants must not be released to land.

L2 **Cleaning and spillages**

Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable. Such spillages must not be cleaned up by hosing, sweeping or otherwise releasing such wastes, contaminants or material to any stormwater drainage system, roadside gutter or waters.

L3 Spillage of all chemicals and fuels must be contained within an on-site containment system and controlled in a manner that prevents environmental harm.
NOTE: All chemical and fuel storage's facilities must be designed, constructed and maintained in accordance with the following Australian Standards as relevant –

- AS 1940 - Storage and Handling of Flammable and Combustible Liquids
- AS4326 Storage and Handling of Oxidising Substances and
- AS3780 – The Storage and Handling of Corrosive Substances.

L4 **Bunding**
All loading/unloading areas must be designed and maintained with an effective spill containment system with a capacity sufficient to contain 100% of the largest compartment of any tanker using the area.

L5 All bunding must be constructed and maintained so as to be sufficiently impervious to allow retention and recovery of any materials being stored within the bund.

L6 Where vehicle access to a bunded area is required, the access must be by way of a rollover bund.

L7 All empty drums must be stored on a concrete hardstand area with their closures in place.

L8 All required pipe work from the bunded areas must where practicable be directed over the bund wall and not through it.

L9 Where it is not practicable to direct pipe work over a bund wall the holder of this approval must ensure that an effective seal is maintained at all times between the pipe and the bund.

L10 The base and walls of all bunded areas must be maintained and kept free from gaps, holes and cracks.

L11 Where is it impractical to completely roof a bunded area the registered operator must ensure that any stormwater captured within the bund is free from contaminants or wastes prior to any release.

Agency interest: Noise

N1 **Noise nuisance**
Noise from the ERA must not cause an environmental nuisance at any nuisance sensitive place or commercial place

N2 Prepare and implement a noise management plan for construction and operation, which is intended to manage construction and operation in a way that minimised the impact of noise on the local community including to control noise generation in accordance with the management hierarchy for noise and the acoustic quality objectives in the *Environmental Protection (Noise) Policy 2008.*

N3 **Noise monitoring**
When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of noise nuisance, and the results notified within 14 days to the administering authority. Monitoring must include but not be limited to:

(a) the level and frequency of occurrence of impulsive or tonal noise

(b) atmospheric conditions including wind speed and direction
(c) effects due to extraneous factors such as traffic noise
(d) location, date and time of recording
(e) the effects of low frequency noise.

N4 The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's Noise Measurement Manual and Australian Noise Standards.

Agency interest: Social

S1 **Complaint response**
The operator of the ERA must record the following details for all complaints received and provide this information to the administering authority on request:
(a) time, date, name and contact details of the complainant
(b) reasons for the complain
(c) any investigations undertaken
(d) conclusions formed
(e) any actions taken.

Agency interest: Waste

W1 **Waste records**
A record of all regulated waste generated by the activity must be kept detailing the following information:
(a) date of pickup of waste
(b) description of waste
(c) quantity of waste
(d) origin of waste
(e) destination of the waste.

W2 Trackable wastes as listed in Schedule 1 of the *Environmental Protection (Waste Management) Regulation 2000* are to be managed as in accordance with a waste tracking system established under the above Regulation.

W3 **Waste Management Plan**
The registered operator must develop and implement a Waste Management Plan which details how the registered operator will effectively and appropriately manage waste caused by the carrying out of the environmentally relevant activities.

W4 In developing the Waste Management Plan and periodically updating it to incorporate changing practices and future options, the registered operator must have regard to the following hierarchy of preferred methods of dealing with waste. Where reasonable and practicable, the method of dealing with waste which is higher in the hierarchy must be adopted over another method which is lower in the hierarchy.
Hierarchy of methods of dealing with waste include but are not limited to the following:

(a) avoid the generation of waste in the first instance, for example by utilising alternate materials and/or processes

(b) minimise the quantity and/or hazardous nature of the waste generated, for example by utilising alternate materials and/or processes and segregation of high strength waste streams from low strength waste streams

(c) recycling of waste produced, for example by incorporating reuse, reprocessing and utilisation of the waste for a worthwhile purpose

(d) treatment of the waste to render it less or non-hazardous

(e) disposal of the waste as a last resort.

The Waste Management Plan must detail at the least the following:

(a) the source, quantity and nature of each waste produced

(b) the current method of disposal

(c) proposed methods of pre-treatment or disposal

(d) expected reduction in quantity of waste produced through waste minimisation and cleaner production.

W5 An up-to-date copy of the Waste Management Plan must be kept at the site and provided to the administering authority on request.

W6 All regulated waste removed from the site must be removed by a person who holds a current authority to transport such waste under the provisions of the EP Act.

W7 If a person removes regulated waste associated with activities at the approved place and disposed of such waste in a matter which is not authorised or is improper or unlawful then, the registered operator of the activity to which this development approval relates must notify the administering authority of the unauthorised, improper of unlawful disposal as soon as practicable. Notification must include all relevant facts, matters and circumstances know to the registered operator concerning the disposal.

Agency Interest: Water

WA1 The registered operator must develop and implement a Discharge Management Plan which effectively and appropriately manages planned, unplanned and emergency discharge of water into the receiving environment so as to not cause environmental harm. The Plan should include but not be limited to all water discharges resulting from testing, commissioning, operation and maintenance and the plan must be available to the administering authority on request.

WA2 Contaminants must only be released from the discharge locations RP1 and RP2 and in compliance with the release limits listed in Table 1 – Discharge Release Limits.

WA4 **Quality characteristics of stormwater released**
Notwithstanding any other condition of this approval, the release of stormwater from the site must not:
(a) have any properties nor contain any organisms or other contaminants at concentrations which are capable of causing environmental harm

(b) produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other objectionable matter.

WA5 **Stormwater Management Plan**
The registered operator must develop and implement a Stormwater Management Plan which details how the registered operator will effectively and appropriately manage the operation of the environmentally relevant activity so as to prevent, as far as is practicable, any contamination of stormwater and any release of contaminated stormwater.

WA6 In developing the Stormwater Management Plan and periodically updating it to incorporate changing practices and future options, the registered operator must have regard to the following hierarchy of preferred methods of dealing with stormwater. Where reasonable and practicable, the method of dealing with stormwater which is higher in the hierarchy must be

adopted over another method which is lower in the hierarchy.

Hierarchy of methods of dealing with stormwater include but are not limited to the following:

(a) avoid the contamination of stormwater in the first instance, for example by roofing areas where contaminants and/or wastes are stored or handled, diverting uncontaminated stormwater runoff away from areas where contaminants or wastes are stored or handled, by preventing the contact of incident rainfall with contaminants or wastes and utilising alternate materials and/or processes

(b) minimise the quantity and/or hazardous nature of the contaminated stormwater generated, for example by minimising the size of areas where contaminants or wastes are stored or handled and by utilising alternate materials and/or processes

(c) recycling of contaminated stormwater produced, for example by incorporating reuse, reprocessing and utilisation of the stormwater for a worthwhile purpose

(d) treatment of any contaminated stormwater to render it less or non-hazardous.

WA7 The Stormwater Management Plan must address at least the following matters:
(a) prevention of incident stormwater and stormwater runoff from contacting wastes or contaminants;

(b) the separation of uncontaminated and potentially contaminated areas at the site

(c) diversion of upstream runoff away from areas containing wastes or contaminants

(d) minimisation of the size of contaminated areas

(e) cleaning of contaminated areas without water

(f) paving and roofing of contaminated areas.

WA8 A copy of the Stormwater Management Plan and any subsequent amendment of the Stormwater Management Plan must be kept at the approved place and be accessible to personnel that are carrying out the environmentally relevant activity and the administering authority upon request.

WA9 **Pond conditions**
All ponds used for the storage or treatment of contaminants on the authorised place must be constructed, installed and maintained:

- so as to minimise the likelihood of any release of contaminants through the bed or banks of the pond to any waters (including ground water)
- so that a freeboard of not less than 0.5 metres is maintained at all times, except in emergencies
- so as to ensure the stability of the ponds' construction

WA10 Suitable banks/and or diversion drains must be installed and maintained to exclude stormwater runoff from entering any ponds or other structures used for the storage or treatment of contaminants or wastes.

WA11 **Monitoring of contaminant releases to waters**
For the purposes of checking conformity with condition WA1 and WA5, when requested by the administering authority the registered operator must monitor the quality of stormwater released from the site. The location of any monitoring point(s) and the parameters analysed must be approved by the administering authority.

WA12 All determinations of the quality of contaminants released to waters must be made in accordance with methods prescribed in the latest edition of the administering authority's Water Quality Sampling Manual

WA14 Erosion protection measures and sediment control measures must be implemented and

maintained to minimise erosion and the release of sediment.

WA15 The size of any sedimentation dam must be sufficient to contain the run-off expected from a 24 hour storm with an average recurrence interval of one in five years.

WA16 Contaminants other than settled/treated stormwater runoff waters must not be released from the site to surface waters or the bed or banks of surface waters.

Contaminant releases to groundwater

WA17 There must be no release of contaminants to groundwater.

Table 1 – Discharge release limits

RELEASE POINT	MONITORING POINT	QUALITY CHARACTERISTICS	RELEASE LIMIT	LIMIT TYPE	MINIMUM MONITORING FREQUENCY
RP1 Discharge of water to land or waterways during commissioning & testing of the WTP	TBA	Total Chlorine (as Cl)	0.1 mg/L	Maximum	Daily if discharging
		Turbidity	25NTU	Maximum	
		Dissolved Oxygen	6 mg/L	Minimum	
		pH	6.5 to 8.5	Range	
		Conductivity (EC)	750 µS/cm	Maximum	
		Chemical Oxygen Demand	20 mg/L	Maximum	Weekly (in any week a discharge occurs)
		Dissolved Aluminium	55 µg/L	Maximum	
		Suspended Solids	20 mg/L	Maximum	
		Total Nitrogen (as N)	1.5 mg/L	Maximum	
		Total Phosphorus (as P)	0.15 mg/L	Maximum	
RP2 Stormwater Retention Basin outlet weir (emergency only)	TBA	Total Chlorine (as Cl)[1]	0.1 mg/L	Maximum	Daily if discharging
		Turbidity	50NTU	Maximum	
		Dissolved Oxygen	6 mg/L	Minimum	
		pH	6.5 to 8.5	Range	
		Conductivity (EC)	NA	Maximum	
		Suspended Solids	100 mg/L	Maximum	Weekly (in any week a discharge occurs)
		Total Nitrogen (as N)	NA	Maximum	
		Total Phosphorus (as P)	NA	Maximum	

NA – monitoring required but no limit set
1 – Total Chlorine monitoring for RP2 only required if retention basin includes water from WTP activities.

DEFINITIONS
Words and phrases used throughout this permit[1] are defined below. Where a definition for a term used in this permit[1] is sought and the term is not defined within this permit[1] the definitions provided in the relevant legislation shall be used.

"administering authority" means the Department of Environment and Resource Management or its successor.

"annual return" means the return required by the annual notice (under section 316 of the *Environment Protection Act 1994*) for the section 73F registration certificate that applies to the development approval.

"approval" means 'notice of development application decision' or 'notice of concurrence agency response' under the *Integrated Planning Act 1997*.

"approved plans" means the plans and documents listed in the approved plans section in the notice attached to this development approval.

"artificial waterway" means an artificial channel, lake or other body of water. Artificial waterway includes —

- an artificial channel that is formed because the land has been reclaimed from tidal water and is intended to allow boating access to allotments on subdivided land
- other artificial channels subject to the ebb and flow of the tide
- any additions or alterations to an artificial waterway.

"authorised place" means the place authorised under this development approval for the carrying out of the specified environmentally relevant activities.

"canal" means an artificial waterway surrendered to the State. A canal is an artificial waterway connected, or intended to be connected, to tidal water; and from which boating access to the tidal water is not hindered by a lock, weir or similar structure.
"clinical waste" means waste that has the potential to cause disease including, for example, the following:

- animal waste
- discarded sharps
- human tissue waste
- laboratory waste.

"coastal dune" means a ridge or hillock of sand or other material on the coast and built up by the wind.
"commercial place" means a place used as an office or for business or commercial purposes.

"dredge spoil" means material taken from the bed or banks of waters by using dredging equipment or other equipment designed for use in extraction of earthen material.

"dwelling" means any of the following structures or vehicles that is principally used as a residence –

- a house, unit, motel, nursing home or other building or part of a building
- a caravan, mobile home or other vehicle or structure on land
- a water craft in a marina.

"Department of Environment and Resource Management" means the department or agency (whatever called) administering the *Coastal Protection and Management Act 1995* or the *Environmental Protection Act 1994*.

"erosion prone area" means an area declared to be an erosion prone area under section 70(1) of the *Coastal Protection and Management Act 1995*.

"high water mark" means the ordinary high water mark at spring tides.
"infectious waste" means waste containing viable micro-organisms or their toxins which are known or suspected to cause disease in animals or humans.

"intrusive noise" means noise that, because of its frequency, duration, level, tonal characteristics, impulsiveness or vibration –

- is clearly audible to, or can be felt by, an individual
- annoys the individual.

In determining whether a noise annoys an individual and is unreasonably intrusive, regard must be given to Australian Standard 1055.2 – 1997 Acoustics – Description and Measurement of Environmental Noise Part 2 – Application to Specific Situations.

"land" in the "land schedule" of this document means land excluding waters and the atmosphere.

"mg/L" means milligrams per litre.

"noxious" means harmful or injurious to health or physical well being.

"NTU" means nephelometric turbidity units.

"nuisance sensitive place" includes –

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises or
- a motel, hotel or hostel or
- a kindergarten, school, university or other educational institution; or
- a medical centre or hospital or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area or
- a public thoroughfare, park or gardens or
- a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

"offensive" means causing offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive.

"ponded pasture" means a permanent or periodic pondage of water in which the dominant plant species are pasture species used for grazing or harvesting.

"protected area" means –

- a protected area under the *Nature Conservation Act 1992* or
- a marine park under the *Marine Parks Act 1992* or
- a World Heritage Area.

"quarry material" means material on state coastal land, other than a mineral within the meaning of any Act relating to mining. Material includes for example stone, gravel, sand, rock, clay, mud, silt and soil, unless it is removed from a culvert, stormwater drain or other drainage infrastructure as waste material.

"regulated waste" means non-domestic waste mentioned in Schedule 7 of the *Environmental Protection Regulation 1998* (whether or not it has been treated or immobilised), and includes -

- for an element - any chemical compound containing the element
- anything that has contained the waste.

"site" means land or tidal waters on or in which it is proposed to carry out the development approved under this development approval.

"tidal water" means the sea and any part of a harbour or watercourse ordinarily within the ebb and flow of the tide at spring tides.

"watercourse" means a river, creek or stream in which water flows permanently or intermittently-

- in a natural channel, whether artificially improved or not or
- in an artificial channel that has changed the course of the watercourse.

"waters" includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, dams,

non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part-thereof.

"works" or "operation" means the development approved under this development approval.

"you" means the holder of this development approval or owner / occupier of the land which is the subject of this development approval.

"50th percentile" means not more than three (3) of the measured values of the quality characteristic are to exceed the stated release limit for any six (6) consecutive samples for a release/monitoring point at any time during the environmental activity(ies) works.

"80th percentile" means not more than one (1) of the measured values of the quality characteristic is to exceed the stated release limit for any five (5) consecutive samples for a sampling point at any time during the environmental activity(ies) works

END OF CONDITIONS

Appendix 4: Gladstone Area Water Board's project commitments

The key commitments made by the Gladstone Area Water Board (GAWB) in the EIS for implementation during design, construction and/or operation of the Gladstone–Fitzroy Pipeline project. The numbering system used below reflects that adopted by GAWB in the EIS.

Subject	GAWB's commitment
	A. In accordance with the timing, processes and triggers set out in GAWB's Contingent Supply Strategy (as articulated through its QCA submissions, registered Drought Management Plan and such other relevant formal documentation as may be produced from time to time), GAWB will: o respond to drought conditions and/or demand growth o where determined as the appropriate action, construct, operate and maintain a water intake, pump stations, pipeline, treatment plant, storages and associated infrastructure within the corridor and generally in accordance with the alignment and sites as shown on Figure 1.3 (Locality Map) in the EIS.
	B. It is noted there will be statutory obligations under other legislation for either GAWB or the construction contractor to: o obtain all necessary approvals o discharge various duties (e.g. a general duty not to cause environmental harm)
	C. The following commitments, subject to the factors noted, include some beyond those required to meet statutory approvals. It is intended that their implementation will enhance the mitigation of potential adverse environmental impacts of the Project, in accordance with good environmental management practice. The commitments are drawn from the detailed planning EMP developed as part of the EIS, which is intended to address specific environmental issues identified during the EIS process associated with each element of the Project. Detailed Construction and Operations EMPs will be developed based on (and to achieve the objectives of) the planning EMP. In addition, where the SEIS has outlined commitments that are additional to those in the EIS, these commitments have been included.
Climate Impacts Plan	**C1**. Preparation and implementation of a Climate Impacts Plan (including an Emergency Management Plan) for construction and operation, which is intended to minimise the risks to the environment, property and personnel arising from local climatic conditions and extreme climatic events.
Land Use and Infrastructure Disturbance Plan	**C2**. Preparation and implementation of a Land Use and Infrastructure Disturbance Plan for construction and operation, which is intended to minimise potential impacts on land use activities and local/regional infrastructure, and will comply with project-related contracts/agreements (including e.g. easements and licences). Coordination and cooperation with DIP in relation to the SGIC and GSDA will be a key success factor. Infrastructure owner/operators will also be consulted regarding interface issues between the pipeline and relevant infrastructure.
Erosion and Sedimentation Plan	**C3**. Preparation and implementation of an Erosion and Sedimentation Control Plan for construction and operation, complying with the requirements set out in the "Soil Erosion and Sediment Control – Engineering Guidelines for Queensland Construction Sites (The Institution of Engineers, Australia (Qld), 1996, or later version)".

Subject	GAWB's commitment
Contaminated Land Plan	**C4**. Preparation and implementation of a Contaminated Land Plan for construction and operation, which is intended to minimise the impacts caused from existing contaminated land and prevent land contamination occurring as a result of the project. As part of this plan, where construction will impact on land designated on the Environmental Management Register or Contaminated Land Register, the Contaminated Land Unit, DERM, will be notified.
Acid Sulfate Soils Plan	**C5**. Preparation and implementation of an Acid Sulfate Soils (ASS) Plan for construction and operation, which is intended to minimise the potential for environmental impacts arising from the inappropriate handling or management of ASS, in accordance with SPP 2/02 Planning and Managing Development Involving Acid Sulfate Soils and the SPP 2/02 Guideline: Acid Sulfate Soil, and with reference to the Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland 1998. Where necessary this will include further ASS investigation. The results of the investigation and the ASS Management Plan will be submitted to the Department of Environment and Resource Management (formerly the Department of Natural Resources and Water) prior to finalisation.
Vegetation Clearing Plan	**C6**. Preparation and implementation of a Vegetation Clearing Plan for construction and operation, which is intended to minimise the impact on flora and fauna within the project area and rehabilitate impacted areas to the state that was present prior to the project taking place (as close as reasonably practicable). The plan will incorporate requirements for vegetation clearing permit/s, to be obtained from DERM as required under the VMA. The plan will also reflect site specific mitigation measures listed in Table 6.12 and 6.13 of the EIS, and require SAPs to be developed and implemented in these instances.
Introduced/Pest Fauna Plan	**C7**. Preparation and implementation of an Introduced/Pest Fauna Plan for construction and operation, which is intended to minimise the impact of introduced/pest fauna species and spread of pest fauna species as a result of the project, in particular the Red Imported Fire Ant (RIFA). The project traverses the Yarwun Fire Ant Restricted Area, and regulations apply. An Approved Risk Management Plan (ARMP) will be developed in consultation with the Department of Employment, Economic Development and Innovation (formerly the Department of Primary Industries and Fisheries). The EMP measures will also help to prevent spread of other invasive invertebrate species such as the big headed ant (*Pheidole megacephala*) and black crazy ant (*Paratrechina longicornis*) known to occur in the region.
Fauna Management and Protection Plan	**C8**. Preparation and implementation of a Fauna Management and Protection Plan for construction and operation, which is intended to minimise the impact of the project on fauna and its habitat, and to rehabilitate impacted areas to the state that was present prior to the project taking place, as far as reasonably practicable (not including e.g. the pipeline alignment itself). The plan will require specific mitigation measures for key locations as per Tables 7.11 and 7.12 of the EIS, and require SAPs to be developed and implemented in these instances. Construction at the wetlands and yellow chat breeding areas that occur within the SGICSDA and are identified in Figure 4 of the SEIS, will only occur between May and September. GAWB has committed to the provision of a financial contribution of $50 000 to Central Queensland University towards yellow chat research.

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	Beyond EMP management measures, the design has been developed with best practice environmental management in mind. Impacts to habitat at creek crossings will be minimised through the use of trenchless crossing methods at Eight Mile/Inkerman Creek, Raglan Creek, Gavial Creek, Bob's Creek and Horrigan Creek.
Weed Management Plan	**C9**. Preparation and implementation of a Weed Management Plan for construction and operation, which is intended to minimise the spread and impact of weeds in the project area and surrounding lands. All investigations and fieldwork already completed on the project adhered to a strict Weed Management Plan developed in consultation with landowners and local governments, which received very favourable feedback. A number of weeds are known to occur along the corridor that will be given particular attention in the implementation of the Weed Management Plan: o Parthenium (*Parthenium hysterophorus*) o Giant Rats-tail Grass (*Sporobolus spp*.) o Rubber Vine (*Cryptostegia grandiflorus*) o Fireweed (*Senecio madagascariensis*) o Harrisia (*Harrisia spp.*) o Prickly Pear (*Opuntia spp.*) o Mother-of-Millions (*Bryophyllum spp.*) o Lantana (*Lantana camara*) o Leucaena (*Leucaena leucocephala*)
Water Resources and Water Quality Plan	**C10**. Preparation and implementation of a Water Resources and Water Quality Plan for construction and operation, which is intended to minimise and manage impacts to surface and groundwater. The plan will incorporate requirements for approvals and permits for construction at creek crossings, including a marine plant permit for creeks where marine plants will be disturbed and/or a riverine protection permit for works requiring the destruction of vegetation, excavation or the placing of fill in a watercourse, as applicable. The plan will require SAPs to be developed and implemented at all watercourse crossings. A Groundwater Management Plan (GWMP) will be included as part of the construction and operations EMP. Further groundwater investigations will be undertaken at Raglan, Horrigan, Inkerman and Twelve Mile Creek crossings to determine the depth to groundwater so that mitigation measures can be tailored to the situation. Beyond EMP management measures, the design has been developed with best practice environmental management in mind. Impacts to water resources and water quality at creek crossings will be minimised through the use of trenchless crossing methods at Eight Mile/Inkerman Creek, Raglan Creek, Gavial Creek, Bob's Creek and Horrigan Creek.
Air Environment Plan	**C11**. Preparation and implementation of an Air Environment Plan for construction and operation, which is intended to minimise the air quality impacts arising from the project. Particular focus will be placed on dust generation caused by construction activities.
Waste Management Plan	**C12**. Preparation and implementation of a Waste Management Plan for construction and operation, which is intended to reduce the amount of waste produced during the project, to maximise recycling and reuse, and to manage waste generated in a manner that minimises the risk of it negatively impacting

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	on the surrounding environment. Residue from the water treatment plant will be disposed of to a local government approved landfill.
Hydrotesting Plan	**C13**. Preparation and implementation of a Hydrotesting Plan for construction (commissioning), which is intended to minimise the potential impacts from hydrotesting and commissioning of the pipeline and WTP on the local environment, particularly waterways. Where reasonably practicable, water used during testing and commissioning of the WTP, pipeline and reservoirs will be reused within the system or passed down the pipe (if of sufficient quality), in preference to disposal.
Noise Management Plan	**C14**. Preparation and implementation of a Noise Management Plan for construction and operation, which is intended to manage construction and operation in a way that minimises the impact of noise on the local community including to control noise generation to within the relevant noise standards. The plan will require a Blasting Operations Plan to be prepared and implemented, detail safety measures and other management measures, if blasting is required (for example at Aldoga). Potentially affected residents will be kept informed about when works will occur in their area, and the duration of the works. As per the EMP, construction activities must be managed to prevent audible noise at the nearest noise sensitive receiver (i.e. residence) on a business day or Saturday before 6.30a.m. or after 6.30p.m., or on any other day, at any time.
Transport and Access Plan	**C15**. Preparation and implementation of a Transport and Access Plan for construction and operation, which is intended to minimise the impacts on transport and access arising from the project. A Road Impact Assessment study has been completed for the EIS. The study details the impact of construction and operational traffic on roads, and outlines specific upgrade commitments: o Laurel Banks Road – the first 2.3 km section widened to a similar standard as the remaining wider section to Ski Gardens Road o Laurel Banks Road / Rockhampton Ridgelands Road intersection – upgrade to a Basic Right Turn (BAR) treatment o Rockhampton Ridgelands Road – newly formed direct access for the Alton Downs WTP, constructed as a BAR treatment Traffic Management Plans will be developed prior to construction to address site specific details for each element of the project, in negotiation with RRC, GRC and DTMR detailing: o the design of site accesses, including the provision of signage and traffic control during construction at site accesses and pipeline crossings o temporary speed reductions as required at site accesses or on unsealed roads in the vicinity of sensitive receptors o temporary traffic control measures o options for carpooling or use of buses by construction personnel to reduce traffic generation resulting from the project. The plan will incorporate requirements for all permits and approvals required under the *Transport Infrastructure Act 1994* including: o approval for works within a state controlled road corridor o approval for works within a railway corridor.

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	The crossing of major roads (Bajool Port Alma Roads, Darts Creek Road, Ridgelands Road, the Dawson Highway, Mt Larcom Road, Mt Larcom Gladstone Roads and the Mt Larcom Gladstone Road and Calliope River Targinie Road intersection) and rail will be undertaken by trenchless methods where practicable to minimise impacts to traffic. The plan will address the maintenance of roads (particularly unsealed roads), during construction including traffic management measures or possible road/intersection improvements to enable safe access during construction of the project. Rehabilitation of all temporary access roads and other areas of disturbance resulting from the construction of the pipeline to a state equivalent to or better that the pre-construction state will be undertaken (unless otherwise agreed with the landowner or relevant authority).
Cultural Heritage Plan	**C16**. Preparation and implementation of a Cultural Heritage Plan for construction and operation, which is intended to minimise the impact of the project on Aboriginal and historic cultural heritage. An approved CHMP between GAWB and each of the PCCC and Darumbal people will be finalised prior to construction commencing in accordance with the requirements of the *Aboriginal Cultural Heritage Act 2003*. As part of the CHMP an Aboriginal cultural heritage survey of the project area will be undertaken by representatives of the PCCC and Darumbal People. Two sites of historic cultural heritage that have been identified are expected to be impacted as a result of the project. The plan will incorporate: o a survey of the Woolwash – Frogmore pipeline, to determine the nature and extent of subsurface archaeological material within the project corridor prior to construction o a basic level of photographic recording, which captures the nature of the item and its context within the cultural environment and within the project area, will be undertaken prior to works commencing in the area for both sites
Social and economic environment – Community and Stakeholder Engagement Plan	**C.17a**. Preparation and implementation of a Community and Stakeholder Engagement Plan, which is intended to directly inform affected landowners, the community and other stakeholders of project planning, contact details and processes for queries or complaints, building on the significant communications activity already undertaken. The Community and Stakeholder Engagement Plan will be prepared and updated as the project progresses. It will describe the community engagement methodology, report on measures that have been undertaken, and also assess the engagement methodology against the indices and milestones within the plan.
Social and Economic Environment – Complaints Procedure Plan	**C17b**. Preparation and implementation of a Complaints Procedure Plan, which is intended to appropriately address complaints from the community that may arise as a result of environmental or social incidents during construction or operation of the project. The plan will establish a complaints response management system that provides for the receipt, recording and timely investigation and response to complaints, including the implementation of preventative or corrective actions and communication with the person who made the complaint to inform them of the actions undertaken.
Handling and Storage of	**C18.** Preparation and implementation of a Handling and Storage of Dangerous Goods Plan for construction and operation, which is intended to manage the

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Dangerous Goods Plan	purchase, handling, storage and disposal of dangerous goods on site in a manner that does not cause harm to the environment, project personnel or the public, achieving compliance with relevant legislation, codes and standards including: o the *Dangerous Goods Safety Management Act 2001* (Qld) o *AS:1940 The Storage and Handling of Flammable and Combustible Liquids* o the *Australian Code for the Transport of Dangerous Goods by Road and Rail*
Health and Safety Management Plan	**C19**. Preparation and implementation of a Health and Safety Management Plan for construction and operation, which is intended to manage the construction and operation of the project in a manner that prevents adverse effects to the health and safety of project personnel and the general public, achieving compliance with relevant legislation, regulations, GAWB's Environment, Health and Safety Management System and the contractor's Health and Safety Management System. The plan will require creation and implementation of a construction safety plan and appropriate work method statements for the project, and an operations safety plan. The plan will include placement of appropriate warning signage at the intake point for water skiers or other members of the public, and the provision of information to the Rockhampton Water Skiing and Powerboat Club regarding intake operations. The plan will require a SAP to be developed and implemented for the Fitzroy River intake area.
Emergency Management Plan	**C20**. Preparation and implementation of an Emergency Management Plan for construction and operation, which is intended to ensure that emergency situations are managed efficiently, minimising the risk to personnel, property or the public that may arise. The plan will require an emergency action plan (EAP) to be developed for implementation during operations and this will form one of a suite of subordinate Disaster Management Plans under GAWB's Disaster Management Plan – Master Plan. The regional offices of Queensland Fire and Rescue Service, Queensland Ambulance Service and Emergency Management Queensland will be consulted prior to the finalisation of the Emergency Management Plan.
Landscape and Visual Amenity Management Plan	**C21**. Preparation and implementation of a Landscape and Visual Amenity Management Plan for construction and operation, which is intended to minimise visual modification impacts upon landscape and visual amenity that arise.
Special Area Plans	**C22**. Each SAP will include (but may not be limited to) provisions: o stating location-specific mitigation strategies o detailing the construction corridor to be used in these locations, constrained where appropriate o that no unnecessary clearing will be undertaken that, as far as reasonably practicable, construction activities will be limited to existing clearings o that established sensitive flora species will not be cleared, wherever reasonably practicable o that wherever reasonably practicable, trees with hollows will not be cleared, or new constructed hollows installed

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	o that wherever reasonably practicable, damage to the edges of remnant communities will be minimised and erosion controls implemented o detailing a rehabilitation plan for each sensitive area impacted during construction o detailing a revegetation plan for each sensitive area that will experience clearing o detailing ecologically sensitive weed management that will be undertaken

END OF REPORT