NORTHERN PIPELINE INTERCONNECTOR

REPORT

Initial Advice Statement

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Abbreviations

EIS Environmental Impact Statement

EMP Environmental Management Plan

EPA Environmental Protection Agency

EP Act Environmental Protection Act 1994

AD Average Day

ASS Acid Sulphate Soils

BCC Brisbane City Council

CHMP Cultural Heritage Management Plan

DLGP Department of Local Government, Planning, Sport and Recreation

DOI Department of Infrastructure

DID Department of Infrastructure Delivery

NR&W Department of Natural Resources and Water

EPBC Act Environment Protection and Biodiversity conservation Act 1999

EPCM Engineering, Procurement, Construction and Management

ERA Environmentally Relevant Activity

IAS Initial Advice Statement

ILUA Indigenous Land Use Agreement

MDMM Mean Day Maximum Month

ML/d Mega Litre per day

MPa Mega Pascal

OUM Office of Urban Management

PIGGING The cleaning or testing of a pipe by specialised machines within the pipeline

PCG Project Control Group

RE Regional Ecosystem

ROW Right of Way

SCADA Supervisory Control and Data Acquisition System

SIA Special Investigation Area

SDPWOA State Development and Public Works Organisation Act 1971

SRWSS South East Queensland Regional Water Supply Strategy

NPI Northern Pipeline Interconnector

SRWPCo The Proponent Company

TOR Terms of Reference

VMA Vegetation Management Act 1999

EXECUTIVE SUMMARY

BACKGROUND

The Northern Pipeline Interconnector (NPI) is a drought contingency project that will have the capacity to transfer 65 ML/day of unallocated water supply to areas of need. To be undertaken in several sections, the project will also link existing and potential future water sources throughout the Sunshine Coast.

The first stage is from the Landers Shute Water Treatment Plant (WTP) to the Morayfield Reservoirs, where it will link with the Caboolture and Brisbane network. The balance of works is generally between Landers Shute and the existing Noosa Water Treatment Plant.

The project is part of the SEQ drought emergency strategy outlined in the *Water Amendment Regulation (No.6) 2006* and the *Water Regulation 2002*. Accordingly, the project is to be completed within the statutory timeframe of 31 December 2008. Design parameters for the NPI must accommodate the potential for linkage with future water sources and a reverse flow capacity.

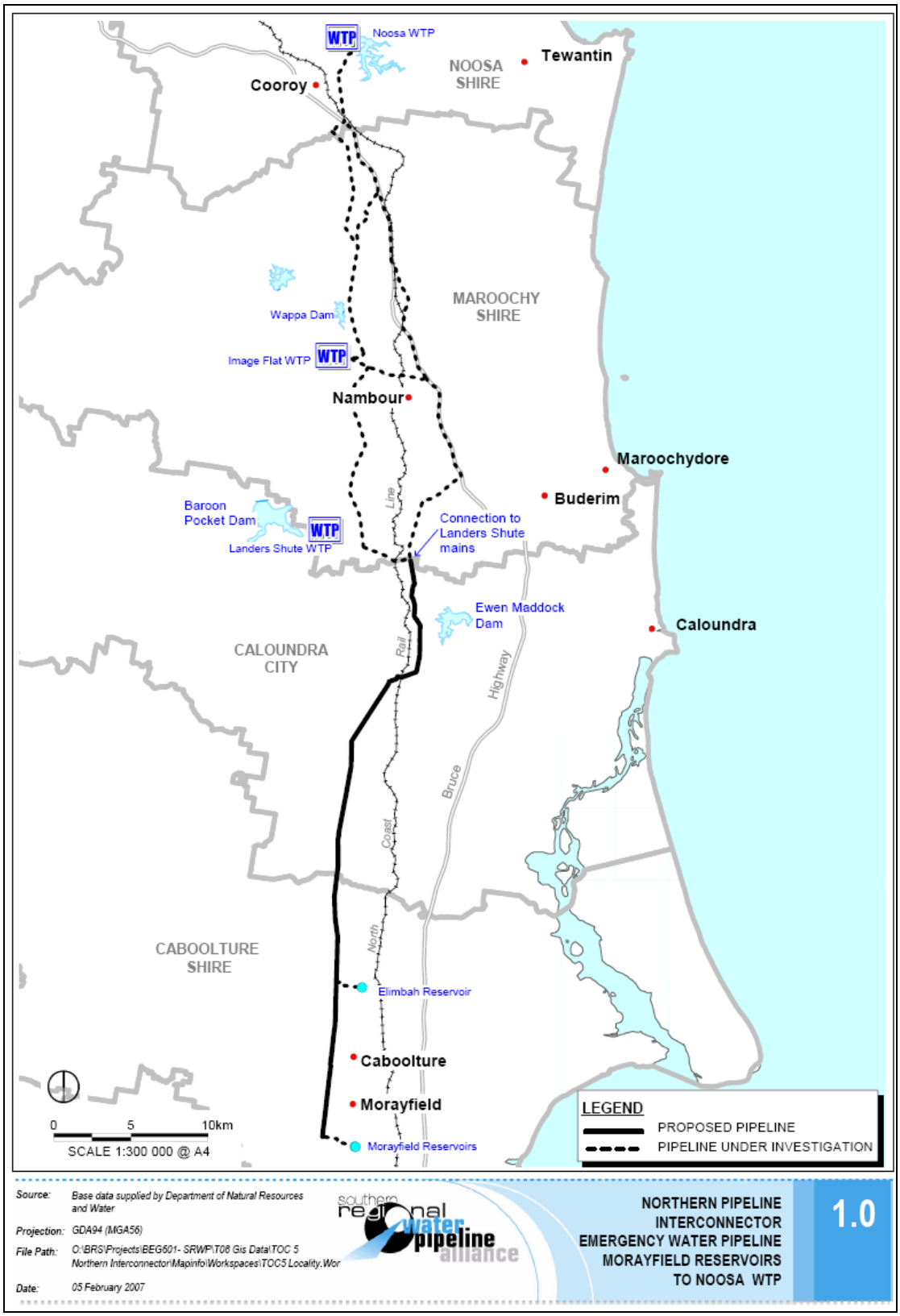
THE PROPOSAL

The NPI will transport a bulk potable water supply from existing water sources on the Sunshine Coast to Brisbane (Figure 1). The proposed alignment for both stages of the project will traverse the local government areas of Caboolture Shire, Caloundra City, Maroochy Shire and Noosa Shire Councils. Largely, the alignment will be within existing public utility easements. These easements are predominantly for electricity transmission. The proposed alignment will also utilise existing road reserves and cleared areas so as to minimise impacts on sensitive environmental systems and public and private landholders.

An alignment solution for the first stage of the project was developed in January 2007, following significant assessment of alternative routes (KBR 2006, JWP 2006) and review of previous feasibility studies. An independent audit of the feasibility studies was completed in 2006, recommending the current alignment as being viable (Land Access 2006). Route options to the alignment were investigated in the field, taking into account strategic objectives, route selection criteria, and engineering, environmental and topographic constraints of the region.

The project proponent is the Southern Regional Water Pipeline Company (SRWPCo) undertaking works on behalf of the Department of Infrastructure (DOI).

FIGURE 1 Locality



JUSTIFICATION

Due to the continuing drought in SE Queensland and the strong growth of the region, the construction of the NPI has become a component of a broader Government initiative to provide an integrated water infrastructure network, the Water Grid, for South East Queensland. The recently released South East Queensland Infrastructure Plan and Program 2006—2026 (the Infrastructure Plan, OUM 2006) complements the Regional Plan and specifically mentions funding implementation of the NPI. The proposals take into account:

- A statutory completion date of December 2008 as defined in the *Water Regulation 200*2
- Future growth and regional development nodes as outlined in the SEQ Regional Plan
- Requirements of the South East Queensland Water Supply Strategy
- Current and future supply sources
- A 2050 time horizon

CONSTRUCTION AND OPERATION PROCESSES

Pipeline

Briefly, construction activities will involve the following key steps:

- Route refinement and survey of the right of way (ROW),
- Implementing a community consultation plan,
- Liaison over Access and Easement declarations,
- Liaison over traffic management issues,
- Clearing of vegetation and grading of the ROW,
- Construction of a trench in which to lay the pipeline,
- Crossing watercourses, road and rail lines by open cut or boring,
- Stringing pipe sections along the ROW,
- Joining the pipe sections and placing into the trench and backfilling,
- Testing the integrity of the pipeline by pressuring it, and finally
- Rehabilitation/revegetation of all disturbed areas.

These activities all have the potential to impact on the receiving environment if not managed appropriately. However, the pipeline is to be built largely within an existing and highly disturbed powerline easement or agricultural properties.

EXISTING ENVIRONMENT

In summary, the easement will be placed over a diverse range of geological regimes and landform units comprising mainly gently to moderately undulating rises in the southern section, and with some occurrence of moderately dissected low to steep hilly lands in the northern section. Throughout there are broad near-flat to gently inclined alluvial terraces and floodplains adjacent to a number of small to medium sized creek and river crossings.

The NPI route and surrounding blocks have some relatively intact remnant vegetation units throughout but especially in the northerly extremities of the corridor, and particularly the incised gullies of steeper hills. However, in some southerly sections native vegetation is less common, as in the extensive pine forests which dominate the middle sections of the route (Glasshouse Mountains) and the adjacent Pineapple and Macadamia Nut plantations. The very southern section of the alignment, behind Caboolture and Morayfield, is typically vegetated with small pastures and orchards in an area of extensive 1-5 ha rural residential allotments on former grazing and dairy pasture land.

Fauna in remnant forest areas is likely to be less diverse reflecting the uneven distribution of dense native vegetation and the general absence of corridors to larger less disturbed areas of native vegetation.

In the southern sections, infestation by woody weeds is common. Residential density increases from rural residential to some larger block residential near Caboolture and continues to the southern terminus at Morayfield Reservoir off-take. As a result, native fauna values in the southern sector are likely to be limited to common species of foraging birds and fauna tolerant of human settlement with associated domestic pets.

Heritage values in this pipeline sector are unknown at this stage although an aboriginal heritage site is located about 2 km south of Landsborough to the immediate west of the pipeline. Other remnants of former occupation and use may be uncovered as part of detailed surveys to be undertaken. However, given the modified nature of most of the landscape (power easement/pine forests and orchards) more major finds seem unlikely.

POTENTIAL IMPACTS AND MANAGEMENT

The main environmental impact associated with the construction of the pipeline would be disturbance to water crossings which have the potential to cause environmental harm through vegetation removal (often with rainforest spp.) and bank and bed disturbance. Clearing the corridor of native vegetation has the potential to cause fragmentation and edge effects. In addition there can be soil erosion from exposed and unprotected surfaces, noise and dust from construction machinery, and cultural heritage and social impacts. However, it is to be noted, the pipeline is being partly placed in an existing and often remote, disturbed powerline easement or cleared pastures and for which the impacts are considered to be relatively easily managed.

In recent years a number of major pipeline projects have been successfully constructed around Australia and the methods and protocols of environmental management have been firmly established within the Industry (cf. APIA Guidelines). A range of management techniques based on current best pipeline practice will be implemented through a project wide Construction Environmental Management Plan (CEMP), regular site audits and implementation of field procedures by Environmental Inspectors.

Measures to protect ecological, social and cultural values are further discussed in the following report.

1 INTRODUCTION

1.1 BACKGROUND

The Northern Pipeline Interconnector (NPI) is a drought contingency project that will provide the capacity to transfer 65 ML/day of unallocated water to areas of need. To be undertaken in several sections, the project will also link existing and potential future water sources throughout the Sunshine Coast

The NPI relies on the collection and transportation of available spare capacity within the existing water supply sources throughout the Sunshine Coast.

The first stage will link the main supply line from the Landers Shute Water Treatment Plant (WTP) through a new section of pipe to the Morayfield Reservoirs. The balance of works will involve new pipelines north from Landers Shute WTP to Image Flat WTP and then to Cooroy.

On 8 August 2006, a water supply emergency regulation (the *Water Regulation 2002*) pursuant to s.25B of the *Water Act 2000* directed that works be undertaken to complete the Northern Pipeline Interconnector (NPI) by the statutory date of 31 December 2008.

Under s.87 of the *Water Regulation 2002*, the nominated service provider is directed to take all necessary steps to prepare for, and construct, the NPI. The project is defined, for the purposes of the *Water Regulation 2002*, as that project summarised in the *Report on Drought Contingency Projects*, held by the DOI.

In addition to the direction under the *Water Act 2000*, the nominated service provider is authorised to undertake works under s.100 of the *State Development and Public Works Organisation Act 1971* (SDPWOA). This authorisation is described under s.12C(4) of the *State Development and Public Works Organisation Amendment Regulation (No. 3) 2006* (SDPWO Regulation).

Construction of the project, estimated to cost circa $600-800 million, will be undertaken over a two year statutory timeframe to ensure the efficient utilisation of the spare capacity, to meet the needs of regional growth nodes as they emerge.

1.2 PROJECT PROPONENT

The project proponent is the Southern Regional Water Pipeline Company (SRWPCo) undertaking preliminary works on behalf of the Department of Infrastructure.

The SRWPCo has been incorporated as a company under the *Corporations Act 2001* and is completing the Southern Regional Water Pipeline project, a 100 km section of pipeline from Mt Crosby to Molendinar on the Gold Coast.

1.3 PURPOSE AND SCOPE OF THIS INITIAL ADVICE STATEMENT

This Initial Advice Statement (IAS) has been prepared by SRWPCo to provide information to government in order to:

- Assist the Coordinator-General to determine the project status
- Enable stakeholders to determine the nature and level of interest in the proposal.

- Enable the preparation of Terms of Reference (TOR) for an Environmental Impact Statement (EIS) for the proposed project. This IAS is intended to scope the potential impacts that will be investigated in detail prior to the project being granted appropriate approvals. An EIS and Environmental Management Plan will be prepared as part of the approvals process.

2 THE PROPOSAL

2.1 LOCATION

The NPI network will link the Sunshine Coast with Brisbane and will traverse the local government areas of Caboolture, Caloundra, Maroochy and Noosa Shires through a 90 km network of large diameter pipelines. The pipeline corridor will utilise existing public utility easements and public open spaces, where practicable, to minimise impacts on private property owners.

Water from the NPI will be available for extraction into existing water supplies to support the growth of residential suburbs in the Caloundra City and Caboolture Shire areas. Further details of the locations of the component elements are provided below.

2.2 ELEMENTS

2.2.1 Pipeline

The NPI will connect existing water supplies from the Mary River and Maroochy dam systems to the water treatment systems at Image Flat WTP and Landers Shute WTP. The pipeline will then continue south to the water reservoirs at Morayfield, just to the north of Brisbane. The connection on the Landers Shute WTP main supply line is near the Lake Baroon Pocket and Ewen Maddock Dams, whereas the connection to existing reservoirs at Morayfield will link with the Caboolture and Brisbane potable supply networks.

The pipeline will be buried with a cover of approximately 750 mm for the bulk of its alignment and consists of pipe ranging from 1290 mm to 750 mm in diameter. It is expected that the pipe will be supplied in 13 m lengths and will be rubber ring jointed at connection points. A range of pipe materials and pipe coatings (where required) are being considered, noting the significant demands for, and supply shortage of, large diameter pipe materials for a range of major water infrastructure projects throughout both SE Qld and nationally. Where mild steel pipe materials are utilised, the pipe will be internally and externally coated for corrosion protection prior to delivery, predominantly with a cement lining (MSCL) or epoxy internal lining and a high density poly external coating. Cathodic protection will also be provided for metallic pipelines to supplement the protective coating. The pipeline will be operated at a maximum allowable operating pressure of 1.6 MPa.

2.2.2 Pumping

The pipeline will have a capacity of greater than 65 ML/d to cater for future growth and infrastructure development. The emergency requirement of the pipeline is to allow the transfer of flow from the Landers Shute WTP connection to the Caboolture and Brisbane systems near Morayfield. The gravity hydraulic grade line will be adequate to deliver to the existing Caboolture system without requiring pumps.

In the longer term, the pipeline is being designed with a potential future use. The existing system between Morayfield and North Pine was assumed to have sufficient capacity to deliver the emergency flows of 65 ML/d. Downstream of Morayfield, it is understood that the capacity of the system to North Pine could accommodate larger flows than 65Ml/d .

Additional pump stations on the section north of Landers Shute to Noosa will also be required. However, the number, size or location of these facilities is still subject to investigation and review.

The pump station will be designed for automatic, unmanned operation (SCADA), be of low noise impact and have a shape, profile and colour to blend with the local environment.

2.2.3 Reverse flow

The NPI will be designed with a reverse flow capacity.

2.2.4 Storage Balance Tanks

Storage balance tanks may be required to fulfil the long-term capacity of the NPI. At this stage, the location and size of storage balance tanks is not determined and will require further investigation and review.

2.2.5 Route Selection

Generally, all route selection and optimisation is based on previous reports that detail various options for the NPI (see KBR 2006, JWP 2006).

At March 2007, route verification studies are being completed for the section north of Landers Shute WTP to Cooroy. The methodology adopted for this route section is detailed below for the section from Landers Shute WTP to Morayfield.

Fort he section from Landers Shute WTP to Morayfield, five options were assessed (KBR 2006, JWP 2006). These options included the Bruce Highway, old Bruce Highway/QR corridor, other minor roads and a western and central power corridor route. Following a field verification phase, the central power corridor route was selected because:

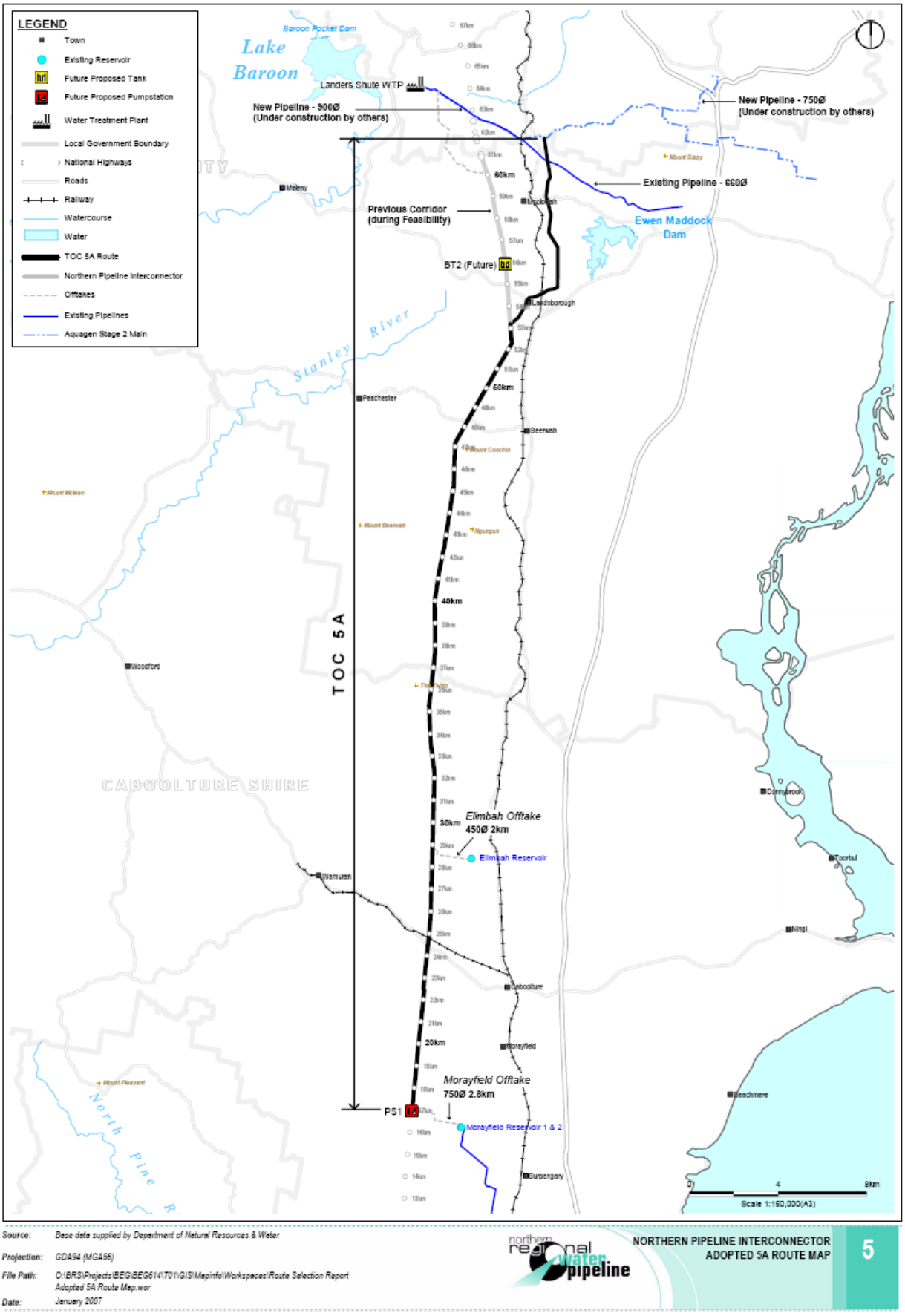
- It is relatively flat and wide
- It is not congested with other services
- Has smaller pumping requirements
- Is largely cleared except for some creek and gully crossings
- There are no fatal flaws from an environmental or cultural heritage perspective.

The proposed route alignment (Figure 2) has been defined based on desktop assessment and several field inspections. Some options are also suggested for routes that have Constructability, Engineering Design or Environmental problems. No detailed geotechnical or survey assessments have been undertaken to date.

Some of the major factors in the pipeline route evaluation and selection included:

- Minimising and if possible avoiding adverse environmental, cultural heritage and social impacts
- Minimising route length
- Minimising project cost
- Minimising pumping requirements, while acknowledging that pumping was required to give sufficient head for the water to flow to Brisbane
- Finding a route where the pipeline would be constructable and at a reasonable rate.

FIGURE 2 Proposed Route



Source: Base data supplied by Department of Natural Resources & Water

Projection: GDA94 (MGA56)

File Path: O:\BRS\Projects\BEG\BEG614\T01\GIS\MapInfo\Workspaces\Route Selection Report Adopted 5A Route Map.wor

Date: January 2007

northern regional water pipeline

NORTHERN PIPELINE INTERCONNECTOR
ADOPTED 5A ROUTE MAP

5

The corridor was initially established based on the most direct route given considerations of local council offtake points, demand nodes, mining activities and industrial development potential (KBR 2006). The route was further refined using spatial (GIS) analysis using existing environmental data including Environmental Protection Agency (EPA) Regional Ecosystem (RE) Mapping, database searches (EPA (HERBRECS), EPBC website) and appropriate guidelines under the EPBC Act. Topography, water crossings and ease of construction are also important parameters.

The proposed pipeline route aims to minimize impacts on all RE's and has been selected using the EPA's RE mapping and initial broad-level field observations. The actual location and condition of Commonwealth and State protected ecosystem patches within close proximity to the proposed alignment will be investigated by a qualified ecologist as part of the EIS process. The pipeline route will be adjusted based on the results of these detailed on-ground investigations.

The proposed corridor has been chosen because it:

- Minimizes potential impacts on sensitive ecosystems
- Avoids known contaminated sites
- Meets the needs of customer council offtake points and demand nodes
- Facilitates the introduction of new bulk water supply sources
- Avoids known cultural heritage sites.

After earlier options (e.g. up existing roadways) had been discounted for a variety of reasons (logistics/cost/environmental impact), the preferred route was established along an existing Energex powerline easement. Further refinement in the field has established this is still achievable from Morayfield up to a point near Landsborough.

A summary of the alignment solution includes the following route refinements:

- From Chainage 17 to 40 km - No amendments required within the central power easement
- From Chainage 40 to 52 km - No amendments required within the central power easement except at some sections minor deviations alongside the easement may minimise the quantity of earthworks required
- From Chainage 52 km to Landers Shute connection Mains - adopt:
    - Refinement E (Chainages 52.3 to 54.8) Plover Drive to Hardwood Road and the eastern Energex easement
    - Refinement G (Chainages 54.8 to 55.8) Within eastern Energex Easement
    - Refinement I (Chainages 55.8 to 58.6) Eastern Energex easement and Tunnel Ridge Road, then departing the escarpment near the Mooloolah Connection / Tunnel Ridge Road junction via private property
    - Refinement J (Chainages 58.6 to 61.8) Eastern Energex Easement

The final alignment has been presented to relevant local authorities and the State government. However, further detailed refinement will be required. The alignment will be fixed following the results of further field surveys regarding geology, topography, ecology, cultural heritage values, ease of construction and Landowner negotiations. This will be discussed further in the EIS that will be prepared as part of the project approval process.

2.3 JUSTIFICATION AND ALTERNATIVES

2.3.1 Justification

The construction of the NPI will provide an integrated water infrastructure network for south-east Queensland, taking into account recent political, demographic and climatic factors that are currently affecting the region.

The South East Queensland Regional Plan 2005-2026 (the Regional Plan) was released in June 2005 (OUM 2005) to set out a vision for the SEQ region through the guiding of growth and development through to the year 2026 . Important components of the Regional Plan are the planning and prioritising of infrastructure and services and managing water demand.

The recently released South East Queensland Infrastructure Plan and Program 2006—2026 (the Infrastructure Plan; OUM 2006) complements the Regional Plan and mentions the Northern Regional Pipeline and the linking of different catchment supplies.

2.3.2 Changes in regional demographics

There has been a consistent 4–5% per annum growth in the population of the south-east Queensland (SEQ) region. This trend is expected to continue into the foreseeable future (OUM 2005).

There is no doubt that the burgeoning population growth in south-east Queensland is placing immense pressure on its natural resources and infrastructure. This is particularly so with water. The SEQ Regional Plan (OUM 2005) identifies that demand on existing water storage facilities in the region will soon exceed sustainable yields and that alternatives must be introduced.

2.3.3 Water supply security and climatic change

Government agencies and Water Providers in SEQ are currently reviewing the capacity of existing infrastructure to supply water over a long-term drought perhaps worse than that previously experienced to an urban population expanding at the current rate.

A factor that has particularly highlighted this situation has been the drought which for the last five years (nominally March 2002 to October 2006) has resulted in an accumulated deficit ranging between 500 mm to 1000 mm rainfall below the long-term rainfall averages for the SEQ region as recorded in long-term regional rain gauges. This represents about 70–80% of long-term average precipitation. Predictions of overall climatic change due to worldwide changes to atmospheric dynamics suggest that these changes will become more marked over the next 50 years.

The NPI network will address the current drought and allows for the future development and entry of bulk water supplies from the recommissioned Ewen Maddock Dam, while balancing regional supplies between the North Pine, Baroon Pocket and dams on the Mary River.

2.3.4 Alternatives

The need for a regional approach in the formulation of strategies for meeting the future water supply needs of south-east Queensland has been recognized for some time. In 1999, a study funded by the State Government and the South East Queensland Regional Organisation of Councils (SEQROC) identified that further work was required to finalize a regional plan.

In May 2003 the Regional Coordination Committee (RCC) for the South East Queensland 2021 project and SEQROC approved commencement of Stage 1 of a proposed three-stage process to develop a regional water strategy.

Additional long-term supply options that are under investigation include:

- Potable re-use
- Desalination
- New and recommissioned reservoir storage
- Increased capacity in existing reservoirs

When completed, the NPI would provide water management options for inter-regional potable transfer.

2.4 CONSTRUCTION AND OPERATION PROCESSES

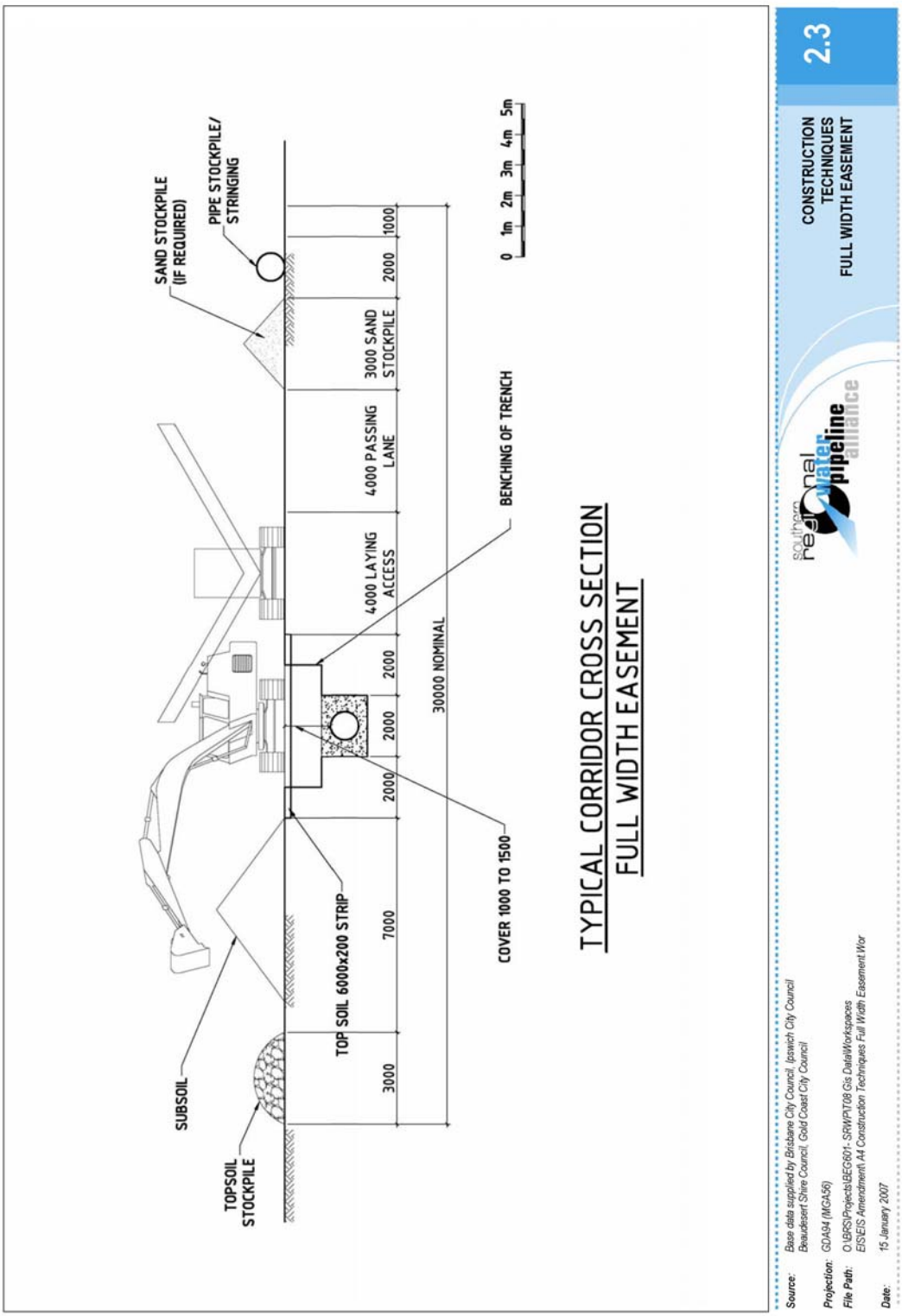
2.4.1 Pipeline

Pipeline construction is linear production-line-work with each crew targeting daily rates for their specific activity. Rates vary dramatically from flat open country to steep, rocky terrain and from approximately 15 m/day to 600 m/day. Activities are carried out sequentially with each crew typically being separated by 4 to 5 days.

Typical activities to be undertaken include:

- Construction of Temporary Facilities
- Access Roads
- Vegetation Clearing
- ROW Grading
- Trenching
- Stringing
- Line-Up the Pipe and Rubber Ring Connection
- Lowering In and Backfilling
- Hydro Pressure Testing
- Road/Rail and River Crossings
- Clean Up and Rehabilitation.

FIGURE 3 Right-of-Way Layout



2.4.2 Pump Stations

Pump stations are required for the completion of the NPI project, however the size or location of these facilities is yet to be finalised. Furthermore, a reverse flow capacity will necessitate the installation of one pump station located near Morayfield. Construction of the pump stations will involve land acquisition, site selection, survey and clearing, the erection of the building to house the pumps and related equipment, and clearing up and restoring adjacent areas and temporary facilities.

2.4.3 Balance Tanks

To achieve a reverse flow capacity, future additions to the alignment may be required. The design parameters for any storage balance tanks will be in accordance with current accepted features.

2.4.4 Operations

Given that the pipeline will be predominantly underground, land users are generally able to resume previous land use activities on top of the pipeline provided that the use does not include excavation or ripping activities. Whilst deep-rooted vegetation cannot be re-established directly across the pipeline due to potential damage of the corrosion protection systems, shallow root cropping and grassland re-establishment is encouraged.

Typical operational activities are:

General Operations — The routine operation and maintenance program includes ground and aerial patrols, repair of equipment, pigging and cleaning of the pipeline, corrosion monitoring and remediation, and easement and lease area maintenance including access roads. Aerial and/or ground inspections will include detection of third party activities on or near the ROW, detection of erosion, monitoring of rehabilitation success and detection and control of weed species.

Supervisory Control and Data Acquisition System (SCADA) — The pipeline network will have a central control room SCADA system which will continually monitor pipeline conditions such as pressure, temperatures water flow in and out, valve status, storage tank levels, pump station performance, cathodic protection and water quality.

Prevention of Pipeline Damage — Prevention of damage due to third party activity will be achieved through appropriate depth of cover, signposting of the pipeline, one call ‘Dial Before You Dig’ programs, and regular inspections. Security fencing, gates and locks will be provided around all major above ground facilities.

Cathodic Protection —Corrosion of metallic pipelines will be prevented by the protective external coating and cathodic protection systems.

2.4.5 Workforce Accommodation

Noting the ready location of urban centres along or adjacent to the pipeline route it is not anticipated that accommodation camps will be required for the workforce.

It is likely there will be one major site office which will act as a logistics base, materials/vehicle storage depot and workshop area. This site will require power, water and sewerage.

At this stage it is not anticipated that night work will be required for general pipe-laying activities. However, micro-tunnelled crossings are a continuous activity for the duration and will require 24-hr operation. Generally, the duration for all crossings is anticipated to be between 9-12 months. Pipeline construction teams will work closely with relevant landowners to ensure they are notified prior to any night work and to ensure that any disruptions are minimized.

2.5 WASTE MANAGEMENT

Relatively small amounts of domestic and industrial waste will be generated during construction and operation of the pipeline. The main regulated waste with water pipeline operation is normally low volume, low level contaminated soil/gravel (e.g. from chemicals or compressor oil).

The waste management strategy for the Project will be based on the principles of 'Avoid, Reduce, Reuse, Recycle and Dispose'. Opportunities for recycling materials will be investigated by the construction team and implemented where practicable, depending upon the availability of local facilities.

All hazardous wastes will be appropriately stored in bunded areas well away from watercourses and in accordance with legislative requirements.

All waste disposal for the Project will be carried out in consultation with the relevant Shire/City Council Environmental Health Officers. Only waste management procedures consistent with the relevant council requirements will be implemented.

2.6 HAZARD AND RISK

Pipelines are recognized as a safe and efficient means of transporting water. However all developments present some level of risk. Risks associated with the pipeline will be assessed in accordance with AS 4360. These will include threats (e.g. corrosion, bushfire), location specific (e.g. flooding, scouring) and external issues (e.g. third party interference). A combination of physical and procedural measures will be applied to the pipeline to ensure design and management meet appropriate safety standards.

A Safety Plan under the Workplace Health and Safety Act will be prepared in addition to an Emergency Response Contingency Plan to manage the identified risks.

2.7 EXTERNAL INFRASTRUCTURE REQUIREMENTS

2.7.1 Water

The project will supply up to 65 ML/d on an average day to localities in south-east Queensland. Water will be required during construction for hydrotesting the pipeline, dust suppression and domestic use at the site office. This construction water will be from sources determined suitable for the project and under relevant statutory approvals. Potable water will be kept separate from construction activity water.

2.7.2 Road and Rail

The majority of traffic during the construction phase will be associated with the delivery of pipes, bedding material and equipment to site.

The final selection of the transport option will be dependent on the availability of pipes within the required timeframe. It is likely that the bulk of the pipe will be manufactured in Australia and rail freighted or shipped to Brisbane and then transported by road to site.

2.7.3 Electricity

Electricity will be required from the grid to supply power to the one pump station and site office proposed. Negotiations for Power Purchase Agreements (PPA) will be conducted with relevant Authorities. All construction requirements will be supplied by portable generators.

2.8 ECONOMIC INDICATORS

South-east Queensland is the fastest growing metropolitan region in Australia with growth rates consistently in excess of 5% per annum. In recognition of this the State Government released the South East Queensland Regional Plan in April 2005 to guide the growth and development in the region through to 2026.

This Plan details the infrastructure requirements to service this regional growth and the NPI is firmly considered as an essential piece of infrastructure to provide water to the identified demand nodes and potential industrial developments.

Specifically the establishment of the NPI will give rise to a number of benefits including:

- Providing a regional network that compliments existing water supply infrastructure.
- Allowing for the efficient integration of future bulk water supplies into the South East Queensland region.
- Ensuring a diversity of supply for the impacted councils in the longer term.
- Providing a system that will result in greater flexibility, increased efficiency and improved reliability.
- Meeting the needs of the States Regional Development Plan and allowing for supply of water to growth nodes and industrial developments.

The capital cost of the NPI is estimated at $600-800 million to be spent over a 2 year timeframe.

2.9 EMPLOYMENT OPPORTUNITIES

The local employment opportunities will include manual labour, plant operators and hire, catering supplies, transport and courier services, fencing services and waste management contractors. In addition to direct opportunities, further employment could arise from vehicle hire, general fabrication and maintenance requirements.

In total an estimated 150 personnel will be employed during the construction phase of the project, employment numbers will ultimately depend on the construction schedule which will be established in the next Phase of the Project. Further personnel will be employed in the manufacture of the pipeline materials.

2.10 FINANCING

The Project cost will be defined during the EIS process and will be delivered during the Financial Years 2005/6 to 2007/8.

2.11 PROPOSED ENVIRONMENTAL STUDIES

Environmental investigations completed to date have been largely desktop with field investigations for route selection. No detailed ecological survey work has been undertaken. More detailed environmental and engineering investigations will be completed prior to finalisation of the preferred route alignment and for EIS preparation (Table 2.1).

Table 2.1 List of detailed environmental studies proposed

Discipline	Topic
Environment Team	Route Alignment
	Flora and Fauna Identification and Rare and Endangered surveys of areas of conservation significance(including regional significance)
	Contaminated sites investigation
	Environment Construction and Operations Noise Impacts
	Surface Water Flooding Investigation
	General Air Quality Assessment
	Social Impact Assessment and Economic Analysis
	European and Aboriginal Cultural and Heritage Study and Management Plans
	Acid sulphate soils investigation
	Climate, Greenhouse and Sustainability
	Terrain and Soil Evaluation and erosion hazard
	Hazard and Risk Assessment
	Water Crossing Study
Engineering FEED Team (has environmental implication)	Engineering Detailed Design
	Logistics Plan
	Traffic Management Plan
	Geotechnical Surveys

3 EXISTING ENVIRONMENT

3.1 NATURAL

3.1.1 Terrain

The study area encompasses a region from Cooroy to Morayfield Reservoir. It is a region that is transitioning from rural to rural-residential development in the far northern and southern sections while remaining largely rural in the middle sections. The middle sections parts of the study area contain significant areas of state forest and forest reserves.

In brief, the preferred alignment follows an existing and largely cleared Energex easement to Landsborough, but with the onset of steep and problematic country north of that town, options are adopted that follow generally cleared, less steep road and minor power easements, or cross agricultural and forested country through to the Landers Shute junction. North from Landers Shute, it is expected that existing public utility easements and other cleared public areas will be utilised.

The first stage near Morayfield Reservoir comprises relatively flat terrain with occasional creeks in small gullies, although the Caboolture River is in a wider entrenched floodplain. Small lots and urban subdivision predominate. The middle section comprises gently rolling countryside again with occasional creek crossings and larger rural residential blocks to large rural holdings. The northern section including and north from Landers Shute has rolling to steep forested hills and deeply incised gullies and steep ridges is predominantly rural with occasional residential Lots (e.g. around Mooloolah).

3.1.2 Landuse and Habitat Types

From Morayfield to the immediate north of the Caboolture River, intact native vegetation no longer occurs other than scattered solitary trees and occasional patches of scrubby wattle and eucalypt regrowth. Infestation by woody weeds is common. Residential density increases from rural residential to larger block residential near Caboolture. As a result, native fauna values in the southern sector are likely to be limited to common species of foraging birds and other fauna tolerant of human settlement with associated domestic pets.

The northern sections of the NPI route and suggested options have some relatively intact remnant vegetation units in steeper ridge and gully country from Landsborough through to the immediate south of Landers Shute and north to Cooroy. In these sections habitat values are likely to be higher. South of Landsborough, the landform softens to rolling slopes and meandering lowland streams. Native vegetation is relatively uncommon with some limited areas still retained in the predominant cover of pine forest which covers the middle sections of the route. Fauna in remnant forest areas is likely to be less diverse, reflecting the uneven distribution of dense native vegetation and the absence of corridors within the pine plantations.

Heritage values may be higher in this central to northern pipeline sector as an Aboriginal heritage site is located about 2 km south of Landsborough to the immediate west of the pipeline. Other remnants of former occupation and use may be uncovered as part of the detailed alignment survey but given the modified nature of most of the southern landscapes

traversed by the pipeline, these indicators are likely to be less obvious and require a trained investigator to identify and interpret their significance.

In summary, there is a diverse range of geological regimes and landform units, comprising mainly gently to moderately undulating rises with occurrences of moderately to intensively dissected low hilly to steep hilly lands. There are broad near-flat to gently inclined alluvial terraces and floodplains adjacent to a number of small river crossings.

3.1.3 Bioregions

The entirety of the NPI will be constructed in the south-east Queensland Bioregion. This Bioregion has a rainfall of 800-1500 m/yr and is considered to have high biodiversity. Population expansion, clearing, agricultural and forestry monocultures, weeds and feral animals are major threats to the Bioregion's diversity.

It should be noted that the NPI alignment is occasionally adjacent to or within road and/or other service corridors and predominantly power line easements. These easements provide permanent physical barriers of variable significance for adjacent ecological communities but also create valuable edge habitat in forested zones.

3.1.4 Regional Ecosystems/Ecological Communities

Specific vegetation communities found in association with certain geological characteristics are referred to as 'Regional Ecosystems' (REs). A review of REs for the proposed pipeline route found 20 occur within a 2 km of the proposed corridor. Under the *Vegetation Management Act 1999* (VMA), 9 of the REs are listed as 'No concern at present', 7 as 'Of Concern' and 4 as 'Endangered'.

Threatened ecological communities are also of significance under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Currently there are 27 ecological communities listed as 'threatened' under the Act, although none occur within the study area.

3.1.5 Flora

Searches of the EPBC Online Protected Matters database and Queensland Herbarium's HERBRECS database for the area encompassing the pipeline corridor revealed forty-one protected flora species listed under the State and Commonwealth legislation as having the potential within the wider study area.

Vegetation within the power easement and roads which the route follows for most of its length is typically dominated by a mixture of native and exotic grasses and herb species. There are a range of native vegetation types present within the study area, ranging from open eucalypt forests, some with heathy understorey, *Melaleuca* woodlands in moister areas, open *Banksia* woodlands and montane shrublands in the southern sections to vine forest and rainforest along waterways and in gullies in the northern sections. The extent and condition of intact vegetation communities will be determined through detailed investigations as part of the EIS.

As part of the EIS process, preferred habitats for each listed flora species will be identified and a targeted botanical survey conducted along the pipeline route to determine whether any of the listed species are actually present.

3.1.6 Weeds

Preliminary investigations have identified the potential for a substantial number of weeds to occur in the area. These include the Declared Species listed in Table 3.1. The presence of these species and other declared plants will be conducted as part of the EIS. A Weed Management Plan will be developed for the project and management measures will be implemented on the proposed pipeline ROW to prevent the potential for further spread of these species during field studies and construction, operation and maintenance activities.

Table 3.1 List of weed species recorded within the study area

Common Name	Scientific Name
Tobacco bush	*Solanum mauritianum*
Lantana	*Lantana camara*
Asparagus Fern	*Asparagus aethiopicus*
Moth of Millions	*Bryophyllum delagoense*
Mother-in-law's Tongue	*Sansevieria trifasciata*
Singapore Daisy	*Sphagneticola trilobata*

3.1.7 Fauna

Searches of the EPBC database and Queensland EPA's Wildnet database for the area encompassing the pipeline corridor revealed forty-eight species listed under the State and Commonwealth legislation provisions as having the potential to occur in the wider study area. This includes 28 birds, 6 mammals, 2 reptiles, 7 frogs, 3 fish and 2 insects.

Searches of the Birds Australia and the Queensland Museum's database will also be undertaken as part of the EIS process. Once this has been completed, the preferred habitats for each listed species will be identified and targeted surveys will be conducted where necessary along the pipeline route to determine whether any of the listed species are actually present or likely to be present.

3.2 NATIVE TITLE AND CULTURAL HERITAGE

3.2.1 Native Title

The Department of Infrastructure and SRWPCo is committed to the protection of cultural heritage sites and the sensitive handling of any accidental discovery of sites. The proponent and DOI will implement a comprehensive community consultation program (see Section 6.0) as part of its overall development program.

At this stage, only one "discontinued" native title claimant group with an interest in the area traversed by the proposed pipeline route has been identified.

Cultural and heritage surveys will be conducted to determine whether the proposed route will impact any anthropological issues or sites. The outcome of the investigations will allow for the

final pipeline route to be aligned avoiding significant areas. These investigations will be conducted in consultation with indigenous peoples/groups that have an interest in the area.

This will be determined when the notification period has been completed and investigations will be updated in the EIS.

3.2.2 Cultural Heritage

The Aboriginal Party with a registered interest in the area will be included in the process and SRWPCo will seek their support on an inclusive basis to negotiate a Cultural Heritage Management Plan for the entire pipeline route. This plan will document the monitoring procedures to be followed during construction to ensure the ongoing protection of any identified sites of significance.

All studies, consultation and development of the CHMP will be in accordance with the duty of care requirements of the *Aboriginal Cultural Heritage Act 2003*.

3.3 SOCIAL AND ECONOMIC

The proposed pipeline network passes through four local authorities of Caboolture, Caloundra, Maroochy and Noosa. The steeper central forested catchments would be classified as more rural in nature, but the gentler slopes and floodplains to the north and south are predominantly rural-residential to occasional residential land uses.

No areas crossed by the route can be said to contain industrial activity proper apart from the forestry and quarrying activities in the Glass House Mountains area. Many areas are likely to continue the trend of future rural-residential growth.

Infrastructure is required to assist these growth areas and the provision of potable water will be essential to the level of economic activity.

3.4 LAND TENURE

The route mostly follows existing power easements. The following types of tenure are likely to be crossed by the pipeline route:

- Freehold land in private ownership, or owned by the government or utility providers such as SEQ Water, Aquagen and Energex
- State land under the control of local authorities, state departments and agencies in leaseholds, reserves or as roads, railways, waterways, tidal waters and unallocated state lands under the control of NRW
- Easements held by private individuals, utility providers, local, state and Commonwealth governments.

3.5 PLANNING SCHEMES

Planning schemes will be investigated during the EIS process but is likely to involve those of Caboolture, Caloundra, Maroochy and Noosa Councils.

4 POTENTIAL IMPACTS & MANAGEMENT – CONSTRUCTION

This section of the IAS provides a general overview of potential impacts and mitigation measures associated with the construction of a pipeline. A Construction EMP (CEMP) will be developed to manage on-site impacts during construction which will meet, as a minimum, the procedures outlined in the Australian Pipeline Industry Association Code of Practice (APIA 2005).

A range of impacts may potentially occur due to the construction of a pipeline. SRWPCo has been engaged to undertake thorough investigations and detailed planning through the final route selection and engineering design processes to minimize potential adverse impacts. Additional studies are planned to refine the proposed pipeline route alignment and determine the actual level of impacts associated with the construction and operation of the Project, and these will be detailed in the forthcoming EIS.

4.1 PHYSICAL ALTERATION OF THE AREA

A strip of land will be cleared of vegetation, where required, generally to a width of thirty metres along the pipeline ROW. In places there will be some variation; less in areas of high conservation significance, slightly more where major boring has to take place (need for laydown areas). This will be undertaken in accordance with best practice for minimizing/avoiding impacts on significant vegetation, minimizing the practical width of clearing for construction, and keeping surface disturbance and soil removal to a minimum.

4.2 LAND USE

Interference with landholder activities should be minimal and each landholder will be consulted regarding the project to discuss their specific requirements. The trench will be left open for the minimum amount of time practicable and should not pose a long term hazard or barrier to stock. Temporary provisions such as fencing or access to water will be discussed with the landholder and any existing fences impacted by the proposed pipeline or ancillary facilities will be reinstated to at least the original condition.

Additional tracks may be required in some areas to provide access to the ROW. The location and rehabilitation of the access tracks will be conducted in consultation with the landholder.

Disruption to local roads may occur during the construction of the proposed pipeline due to transport of pipe and equipment and the installation of the pipeline itself. Relevant liaisons will be coordinated with the local councils, Main Roads and affected residents regarding the schedule of activities to minimize disruption. Local roads will be left in a condition at least equivalent to the existing condition at commencement of construction.

Any crossing of a major road or rail infrastructure will be carried out in consultation with the Department of Main Roads and Queensland Rail and in such a way as to minimize disturbance to traffic.

4.3 DRAINAGE AND WATERCOURSES

Alteration to topography or drainage will be minimized during the clearing phase and rectified to original condition during cleanup and rehabilitation.

A number of watercourse and river crossings will be required of the proposed pipeline. The actual location of the crossings will be dependent on the final pipeline alignment and be dependent on geotechnical studies to be undertaken during the EIS. The construction of the pipeline will not permanently modify any watercourses, although there will be potential for temporary disruption during construction of the crossings.

The construction method for watercourse crossings will be dependent on site factors (e.g. hydrology, stream substrate and geology, environmental and cultural sensitivities and engineering feasibility), with the aim to minimize both environmental impacts during construction and the need for future remedial work during the operation of the proposed pipeline.

4.4 EROSION AND WATER QUALITY

Clearing of the land exposes soil to wind and rain increasing the potential for erosion and, in proximity to watercourses, reduction in stream water quality (e.g. increased turbidity and suspended solids). Construction planning will take into account weather conditions with the view of minimizing the potential for erosion and sedimentation to occur, thus reducing the risk of adversely impacting water quality.

Restoration will be managed to minimize the duration the trench will be open so as to limit the potential for soil erosion and reduction of water quality form any unanticipated adverse weather conditions.

Potential for acid sulfate soils (ASS) are unlikely to be encountered within the NPI corridor which has been located inland away from low coastal zones and above the 5m contour. Neither does the route fall within in any area nominated on the NR&W acid sulphate maps. Notwithstanding this, where encountered, relevant sections of the pipeline will be managed in accordance with State Government Acid Sulphate Guidelines.

The CEMP will detail all appropriate sediment and erosion control requirements for the project. With the implementation of erosion control measures in accordance with the APIA Code of Environmental Practice, the impacts on soil loss and water quality are expected to be low.

4.5 FLORA AND FAUNA

4.5.1 Ecosystems

Potential impacts from construction of a buried pipeline are associated with fragmentation and disturbance due to vegetation clearing. This may be partially offset by improved habitat for some species associated with edge effects. As much of the proposed route follows an existing cleared Energex transmission easement there are limited locations where the proposed pipeline has the potential to fragment habitat, including remnant RE patches.

These include:

- Eucalypt Communities
- Melaleuca Wetlands

- Heath Remnants
- Rainforest Gullies

Where practicable the pipeline route will avoid ecosystems protected by the Commonwealth and RE's listed as 'Endangered' and 'Of Concern' under the Queensland VMA and selection of the final route alignment will take into account minimization of fragmentation to protect the viability of remnant vegetation. Detailed studies and mapping will be undertaken as part of the EIS process.

4.5.2 Flora

The impact of clearing a ROW up to 30 m is dependent on the type and nature of vegetation to be disturbed, its function as fauna habitat or linkage and topographical features such as slope and aspect. Most of the proposed ROW is cleared and in pasture, even in forested areas due to it being a transmission easement. If large habitat trees are removed these species would take many years to regenerate and this will be avoided wherever possible.

However most impacts are considered to be temporary especially where proactive rehabilitation measures are put in place. Detailed flora studies will be undertaken as part of the EIS process to enable impacts on common and scheduled species to be minimized.

4.5.3 Fauna

The main impacts of construction on fauna would be short term increases in disturbance from construction noise, vehicle movements and dust production or mortality from traffic and truck movement. Clearing of vegetation may also result in loss of habitat. It is anticipated that in most cases significant isolated habitat trees will be able to be avoided by the final pipeline alignment. Where such trees cannot be avoided, any hollows will be salvaged and relocated to appropriate alternative hosts wherever possible.

Analysis of preferred habitat requirements for each scheduled fauna species will be undertaken, as well as searches of the Birds Australia and Queensland Museum databases. An ecological field survey will be carried out as part of the EIS to determine if the terrain crossed by the pipeline comprises 'preferred habitat' for any scheduled fauna species.

Due to the disturbed nature of the preferred route, impacts on flora and fauna are expected to be low.

4.6 NOISE AND VIBRATION

For portions of the traverse the pipeline route comes into close proximity to urban or rural residential areas. Some disturbance will be experienced by residents but this will be temporary and of short duration. Consultation with all impacted residents will occur prior to construction and any special needs will be noted. Impacts will be mitigated by restricting working hours in noise and vibration sensitive hours.

The proposed future pump station will have a low profile, be surrounded by vegetated bunds and have acoustic fittings to minimize noise impacts. Studies will be conducted during the EIS to review potential noise and vibration impacts.

4.7 TRAFFIC

An increase in haulage vehicles transporting pipe sections and other equipment via local roads will occur. Furthermore, local traffic along council roads adjacent to the proposed rote may increase as a result of the construction activity, although the vast majority of traffic for the construction phase will be along the ROW itself. Councils will be advised if significant increases in vehicle use on minor roads are expected. A project Traffic Management report will be prepared and implemented.

4.8 AIR QUALITY

The main impact to air quality from the Project would be as a result of dust generation during construction. This will be mitigated by the use of water trucks as necessary. Increased vehicle use on unsealed roads or where the ROW passes in close proximity to residences may also cause localized dust impacts to adjacent residences. These impacts will generally be of short-term duration as the construction team works through the area.

Air quality may also potentially be affected by emissions generated from equipment and vehicles utilized during construction however this will be of a localised nature only. The effect on air quality will be minimized through ensuring the contractor only uses equipment that is properly maintained and in sound working order.

Given the nature of potential emission generation, impacts on air quality associated with the Project are expected to be low.

4.9 VISUAL AMENITY

Clearing of the ROW through formerly timbered areas will have a visual impact from locations where works are visible from roads or by individual areas. However, as most of the route follows an existing power line easement which is already cleared, additional clearing will be minimal. By ensuring that restoration works adhere to a sound CEMP, the negative aesthetics of any additional clearing can be quickly and greatly reduced. This can be facilitated by respreading or disposing of vegetative debris and incorporating a pasture reseeding component as part of the restoration process.

As the opportunity for public viewing of construction activities will be limited to areas of already cleared vegetation, short-term impacts on visual amenity are expected to be low.

4.10 COMMUNITY CONSULTATION

A well designed, strategic and executed community consultation program is essential to the overall success of this project. To this end a comprehensive community consultation and awareness program will be developed and implemented which will inform communities about the nature of the project; the construction and operational impacts; and the derived benefits.

Furthermore the consultation program will seek input from the community and this information will be taken into account during deliberations in order to achieve the optimal outcome for all parties.

It should be noted that preliminary route identification has already focussed on avoiding residential areas where possible and maximizing the use of existing infrastructure corridors in an effort to minimize impact on the community.

4.10.1 PURPOSE

The purpose of the Communication Stakeholder Management Plan (CSMP) will be to facilitate input form stakeholders by:

- Providing them with a clear understanding of the project; the potential impact and benefits; and the timelines
- Providing information exchange mechanisms and suitable methods of identifying and servicing their concerns.

4.10.2 PROGRAM

The CSMP will be undertaken in a strategic and ordered fashion. The elements of the program are described below:

Identification of Key Stakeholders — SRWPCo is currently identifying all stakeholders who may be impacted by the project (e.g. landowners, mining interests, community and environmental groups). Preliminary discussions have been held with the relevant Local Authorities and the Department of State Development and Innovation. An appropriate database of stakeholders will ensue.

Community Consultation Process — DoI and SRWPCo are committed to taking a proactive approach to seeking community views and to ensuring that adequate means of communication are provided. To this end a consultation team comprising people with expertise in community consultation, the environment, cultural heritage, land valuation, engineering and public relations be established to work with the technical design team to implement an appropriate strategy for the project. It should be noted that a detailed CSMP forms part of the documentation associated with the Business Case of the NPI.

Stakeholders will be provided with a clear understanding of the nature of the project, its parameters, its benefits, its timelines and impacts. They will be kept informed of the progress of the project through regular and advertised public meetings, personal contact, correspondence, fact sheets, a website, and a Free Call Hotline. During this campaign the stakeholders will be given every opportunity to express their concerns and requirements.

EIS Consultation — The project will follow the specific requirements of the relevant Act to conduct regulatory consultation in the EIS process as coordinated by DoI.

Cultural Heritage & Native Title — Similarly the consultation team will seek expert input on Cultural Heritage and Native Title issues with the assistance of the Cultural Heritage Coordination Unit of NR&W. Appropriate interest groups will be identified and negotiations undertaken.

4.10.3 Land Acquisition

For the majority of the corridor, it is intended to attempt to obtain all land, easements and access to land for investigations by negotiated agreement with the owners. This is socially and politically the most acceptable process. It can speed up the process of obtaining land and also avoid the need for compulsory acquisition. However, where a landowner does not wish to agree to sell land or agree to granting easements compulsory acquisition may be necessary.

The State Government has amended the *State Development Public Works and Organisation Act 1971* (SDPWOA) to facilitate the the inclusion of infrastructure into an existing infrastructure easement.

This amendment relates to land that is burdened by a relevant public utility easement and where a critical infrastructure project is proposed. In these circumstances the Coordinator-General may register an easement (tenure) without the landowner signing the easement document. It also provides protection for the exiting easement holder.

A critical infrastructure easement can only be registered in favour of the GoG.

4.11 POTENTIAL IMPACTS & MANAGEMENT – OPERATION AND MAINTENANCE

A range of largely non-intrusive activities take place during the Operational stage of the pipeline, including final compensation negotiations, any follow up rehabilitation (trench subsidence), monitoring and maintenance works. These will be managed through the later introduction of an Operations EMP.

5 STATUTORY REQUIREMENTS

5.1 GENERAL

SRWPCo has sought designation of the NPI, pursuant to this IAS, as a Significant Project under the SDPWOA. This Act sets out the requirements for environmental assessment and public review of the EIS.

In addition to providing a mechanism for consolidating community, social, biological and environmental concerns for the project, 'significant project' status provides the following:

- The necessary justification for making an application to clear vegetation for an on-going purpose under the *Vegetation Management Act 1999 (VMA)*
- A link with the Commonwealth Department of the Environment and Heritage (DEH) under a bilateral agreement for delineation of powers regarding the approvals and assessment process for actions under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).*

Under s.76E(1) of the SDPWOA, the Minister may declare the NPI a prescribed project and a critical infrastructure project. The declaration is effective once a gazette notice is published.

The main benefit of a 'prescribed project' declaration is to allow the CoG to have a closer involvement in the timing of approvals processes under the IDAS. Namely, the CoG has amended the SDPWOA to issue progression notices, notices to decide and step-in notices.

A critical infrastructure project declaration, under s.153A SDPWOA, would enable the CoG to then register a critical infrastructure easement over land with an existing public utility easement. A declared critical infrastructure project may be constructed within a critical infrastructure easement in favour of the CoG.

5.2 OTHER LEGISLATION

The NPI is potentially assessable under a range of State, Federal and Local Government approval processes. These include, but are not limited to:

Federal

- *Environment Protection and Biodiversity Conservation Act 1999*
- *Australian Heritage Council Act 2003*

State

- *Integrated Planning Act 1997*
- *Aboriginal Cultural Heritage Act 2003*
- *Water Act 2000*
- *Environmental Protection Act 1994 and Regulation*
- *Vegetation Management Act 1999*
- *Acquisition of Land Act 1967*
- *Native Title (Queensland) Act 1993*

- *Local Government Act 1993*

5.3 CODES OF PRACTICE

The Australian Pipeline Industry Association Code of Environmental Practice demonstrates industry Best Practice Management to mitigate environmental impacts from construction and operation of pipelines. The Association advocates this document as an appropriate Code of Practice for the industry. Section 4 of the Code details mitigation strategies that should be incorporated in an EMP for the project.

5.4 COMPLEXITY OF STATUTORY REQUIREMENTS AND NEGOTIATIONS

The project is expected to involve a high level of complexity, including:

- Negotiations with local authorities and a corporate entity
- Variety of land tenures including:
    - Freehold
    - Leasehold
    - State land
    - Mining tenures
    - Existing easements

Negotiations with numerous infrastructure providers including:

- Powerlink
- Energex
- Main Roads
- Queensland Rail
- Water Authorities
- The need to address Local and State Government approvals and/or legislative requirements (e.g. local approvals for temporary road closure, State Government licenses and permit applications).
- Numerous environmental approvals and licences from agencies such as the EPA, DEH, NR&W and DPIF.

6 CONCLUSIONS

A desktop assessment, combined with some limited field inspections and surveys in specific areas of sensitivity has been undertaken of the potential impacts of the construction and operation of the proposed NPI. This IAS has identified that potential impacts could include:

- Removal and modification of flora and fauna habitat
- Potential impact on wildlife protected under the *Nature Conservation (Wildlife) Regulation 1994*
- Weed dispersion
- Dust generation
- Traffic impacts
- Noise and vibration impacts
- Water quality
- Dislocation to rural activities

As set out in the introduction to this document, the purpose of an Initial Advice Statement is to highlight issues relating to the proposed development and make recommendations as to the need for further studies, in particular an EIS. With the implementation of an appropriate CEMP, overall impacts from the proposal are expected to be low.

In recent years a number of major pipeline projects have been successfully constructed around Australia and the methods and protocols of environmental management have been firmly established within the Industry (cf. APIA Guidelines). A range of management techniques based on current best pipeline practice will be implemented through a project wide Construction Environmental Management Plan (CEMP) and regular site audits.

6.1 BENEFITS

The establishment of the NPI will give rise to a number of benefits including:

- Providing a regional network that complements existing water supply infrastructure.
- Allowing for the efficient integration of future bulk water supplies into the south-east Queensland
- Ensuring a diversity of supply for the impacted Sunshine Coast councils in the longer term.
- Providing a system that will result in greater flexibility, increased efficiency, contingency supply and improved reliability.

Meeting the needs of the States Regional Development Plan and allowing for supply of water to growth nodes and industrial developments.

7 REFERENCES

APIA (Ass. Ltd.), 2005: "*Code Of Environmental Practice–Onshore Pipelines",* ACT, Australia

JWP, 2006: *"Northern Interconnector Pipeline and Associated Works"* route selection report for Department of Natural Resources and Water, Brisbane, Australia.

KBR, 2006: "*Traveston Dam to South East Queensland Pipeline*" route selection report for Department Natural Resources and Water, Brisbane, Australia.

Land Access Pty Ltd, 2006: "*Comparison and Assessment of Alternate Water Pipeline Corridors – Northern Interconnector Pipeline*", route selection report for Queensland Water Commission, Brisbane, Australia.