



SOUTHERN REGIONAL WATER PIPELINE

Initial Advice Statement

August 2005

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GLOSSARY

AD Average Day
ASS Acid Sulfate Soils
BCC Brisbane City Council
CHMP Cultural Heritage Management Plan
DLGP Department of Local Government and Planning
DNRM Department of Natural Resources and Mines
DSDI Department of State Development and Innovation
EIS Environmental Impact Statement
EMP Environmental Management Plan
EPA Environmental Protection Agency
EP Act *Environmental Protection Act 1994*
EPBC Act *Environmental 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
NBBT North Beaudesert Balance Tank
OUM Office of Urban Management
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 Public Works and Organization Act 1971*
SRWSS South East Queensland Water Supply Strategy
SRWP Southern Regional Water Pipeline
SRWPCo The Proponent Company
TOR Terms of Reference
VMA *Vegetation Management Act 1999*



EXECUTIVE SUMMARY

BACKGROUND AND PROPONENT

SRWPCo, a company to be incorporated under the Corporations Act 2001, is proposing to build, own and operate a high pressure water transmission network in south-east Queensland to provide a bulk water supply network in the southern region.

The Southern Region Water Pipeline (SRWP) will service the growth in residential and industrial demands of Brisbane City, Logan City, Ipswich City, Gold Coast City and Beaudesert Shire. It will also link the bulk water sources of Wivenhoe Dam and the Gold Coast.

The SRWP project relies on the utilisation of spare capacity within the existing water supply networks. It will delay or eliminate expensive spare capacity within existing water supply networks. The network will consist of some 120 km of pipe, three pump stations and two balance storage tanks.

The shareholders of SRWPCo are SEQWater, and the councils of Brisbane City, Ipswich City, Logan City, Gold Coast City and Beaudesert Shire.

The project will be built in stages to service demand growth in the region. Construction, to commence in late 2006 will likely span over a ten year period, will cost in excess of \$250 million.

THE PROPOSAL

The SRWP will run from a connection point at the Kuraby Reservoir to Helensvale via a new pump station at Chambers Flat and connecting to the existing Helensvale to Molendinar pipeline operated by Gold Coast Water.

The remainder of the overall system involves a new pipeline commencing at the Camerons Hill Reservoir and running to the new Chambers Flat pump station via Swanbank, North Beaudesert and Logan. This system will include a connection point to allow supply from the future Cedar Grove Weir and Wyaralong Dam to enter the urban network.

It should be noted that it will not be necessary for the entire SRWP network to be constructed at the one time. The scheme constitutes a master plan to provide infrastructure as and when required to meet forecast demands and to take advantage of new sources of water supply as they are developed.

The pipeline will be buried, to a minimum depth of approximately 750 mm, for the bulk of its traverse and consists of pipe ranging from 1050 mm to 750 mm in diameter. The pipe is expected to be supplied in 13 m lengths and to be rubber ring jointed at connection points. The pipeline will be operated at a maximum allowable operating pressure of 1.6 MPa.

A number of route options were investigated taking into account strategic objectives, route selection criteria and environmental and topographic constraints of the region including:

- Minimizing potential impacts on sensitive ecosystems
- Reducing conflicts with existing and past mining activities
- The location of growth demand nodes
- Proximity to areas of targeted future industrial development
- Compatibility with proposed future water resources developments such as the Wyaralong-Cedar Grove Weir proposal.

Water will flow from originating reservoirs under gravity but will require pumping to enable distribution over the region. A total of three pump stations will be required as well as two strategically placed storage balance tanks.

JUSTIFICATION

The construction of the SRWP will provide an integrated water infrastructure network for South East Queensland taking into account:

- A 2050 time horizon
- Current and future supply sources
- Future growth and regional development nodes as outlined in the SEQ Regional Plan
- Requirements of the South East Queensland Water Supply Strategy

The integrated technical solution, presented by the SRWP project, creates an opportunity to develop, own and operate a regional bulk water supply system in south-east Queensland. This arrangement has the potential to provide a greater flexibility, increased efficiency, contingency water sources and improved reliability of supply and operation.

The project provides for interconnection with the proposed Wyaralong Dam-Cedar Weir development. While this project has not been investigated as part of the SRWP project, it has been assumed that the project will proceed. Accordingly, the network has been designed to provide compatibility with Wyaralong development.

The SRWP as a complete regional infrastructure solution for bulk water supply in south-east Queensland, has multiple objectives, viz:

- Ensures the efficient use of existing and planned infrastructure and systems
- Meets the need of customers while benefiting the region as a whole
- Provides for efficient and effective system operations and maintenance
- Is consistent with and facilitates the delivery of the broad ranging regional and economic development benefits enunciated in the OUM Infrastructure Plan
- Is consistent with, and complimentary to, the RWSS Stage 1.

A schematic and overall location of the proposed SRWP network is shown in Figure 1. It provides details of the proposed alignment and the location of the major items of associated infrastructure



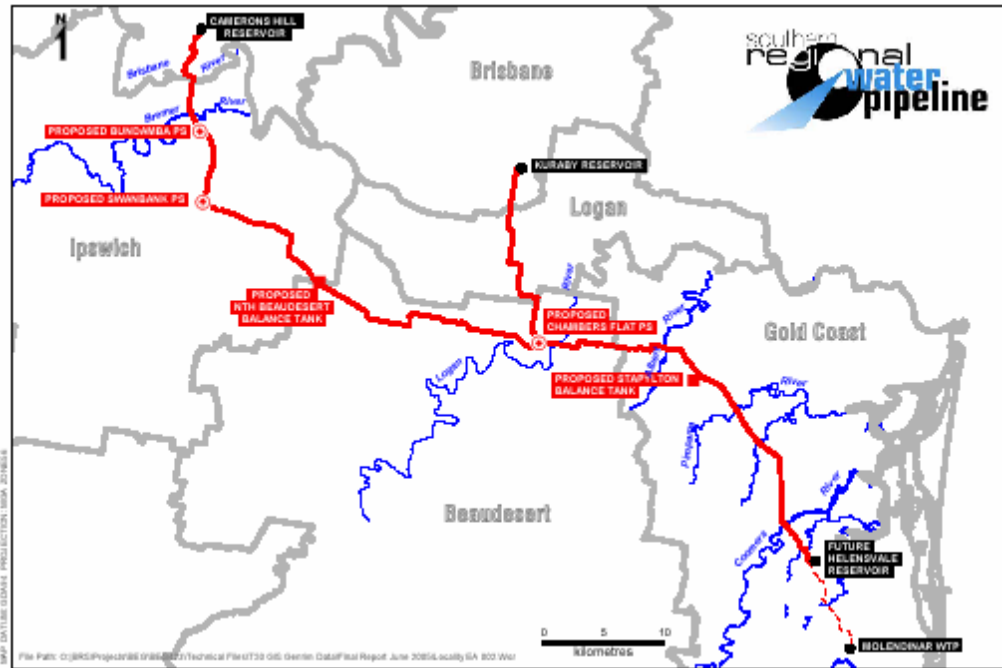


FIGURE 1 Southern Regional Water Pipeline—Schematic—Overall System

CONSTRUCTION AND OPERATION PROCESSES

Pipeline

Construction activities will involve the following key steps:

- Route refinement and survey of the right of way (ROW).
- Setting up and implementing community consultation plan.
- Establishing liaison with local authorities and main Roads about traffic management issues and arrangements.
- Installation of temporary gates for construction.
- Clearing of vegetation and grading of the ROW to prepare a safe construction platform.
- Separation and stockpiling of topsoil and subsoil to protect and preserve topsoil.
- Setting up of temporary facilities such as work areas for equipment and pipe delivery and storage, borrow pits and access tracks.
- Construction of a trench in which to lay the pipeline. This would be undertaken by a trenching machine, rock saws, or excavator, and may involve rock hammers or blasting in hard rock terrain.
- Installing sediment and erosion control / mitigation measures.
- Crossing watercourses, road and rail lines by open cut, boring or horizontal directional drilling methods depending on the type and nature of the crossing.



- Stringing the pipe sections along the ROW.
- Joining the pipe sections.
- Placing the pipeline into the trench and returning the subsoil and topsoil to their original horizons.
- Placing sand or screened trench subsoil into the trench to support and protect the pipe coating from external damage.
- Testing the integrity of the pipeline by filling it with water and pressuring it above the operating level.
- Clearing and restoring the construction ROW and all temporary facilities.

The section of the pipeline between Redbank Plains Rd and the Brisbane-Sydney Rail Line, and sections adjacent to the Bundamba WWTP and Ebbw Vale, are within the South-West Fire Ant Restricted Area. Accordingly it will be necessary to develop and implement an Approved Risk Management Plan in accordance with requirements of the Department of Primary Industries (DPI).

Rehabilitation will be undertaken in accordance with best practice pipeline construction and will ensure that:

- Topsoil cover is re-established and all land and waterways disturbed by the project are returned to a stable condition as soon as possible after construction.
- Land is returned as close as possible to its previous productivity.
- Stable landforms are re-established to original topographic contours.
- Natural drainage patterns are reinstated.
- Erosion control measures are installed in erosion prone areas.
- The pre-construction environment is reinstated and disturbed habitats rehabilitated.

Given that the pipeline will be underground, land users would be able to resume previous land use activities above the pipeline provided they did not include excavation. Whilst deep rooted vegetation cannot be re-established directly across the pipeline, due to potential damage to the corrosion protection systems, shallow root cropping and grasslands re-establishment will be encouraged and no long term impacts would be expected to such areas.

During operation water flow and pressure will be monitored from a centralised control room. Inspection of the pipeline easement for issues such as erosion, weeds, subsidence, lack of revegetation or third party activity would be carried out on a regular basis by ground patrols. Regular contact will be maintained with landowners of all properties traversed by the pipeline.

Pump Stations

The installation of the three pump stations located at Bundamba, Swanbank and Chambers Flat will involve the following key steps:

- Site selection and survey.
- Land acquisition.



- Installation of temporary fencing for construction.
- Liaison with adjoining landholders.
- Clearing of vegetation and grading of the site to prepare a safe construction working area and stockpiling topsoil.
- Establishing erosion control measures.
- Setting up of temporary facilities such as work areas for equipment delivery and storage, access roads and worker accommodation.
- Laying down of concrete foundation slab to house the pump station and ancillary facilities.
- Erection of the building to house the pumps and related equipment.
- Installation of the pumps, electrical equipment, valves and associated instrumentation.
- Connection of the inlet and outlet sections of pipe.
- Completion of permanent fencing and gate access.
- Clearing up and restoring adjacent areas and temporary facilities

The Bundamba and Swanbank sites are within the South-West Fire Ant Restricted Area. Accordingly, there will be a requirement to develop and implement an Approved Risk Management Plan in accordance with requirements of DPI.

The sites will be a secure area once completed and public access will not be allowed. Operations will be unmanned and monitored from the central control room on a 24 hour basis.

Balance Tanks

The installation of the two storage balance tanks located at North Beaudesert and Stapylton will involve the following key steps:

- Site selection and survey.
- Land acquisition.
- Liaison with adjoining landholders.
- Installation of temporary fencing for construction.
- Clearing of vegetation and grading of the site to prepare a safe construction working area and establishing topsoil stockpiles.
- Establishing erosion and sediment control mitigation measures.
- Setting up of temporary facilities such as work areas for equipment delivery and storage, access roads and worker accommodation.



- Laying concrete foundation slab for balance tank and ancillary facilities.
- Construction of the tank and related equipment.
- Connection of the inlet and outlet sections of pipe.
- Completion of permanent fencing and gate access.
- Clearing up and restoring adjacent areas and temporary facilities.

The site will be a secure area once completed and public access will not be allowed. Operations will be monitored from a central control room.

EXTERNAL INFRASTRUCTURE

- **Gas** – the project will not require access to gas supply.
- **Water** – the project will supply up to 160 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 campsites.
- **Transport** – road and/or rail is likely to be utilized for transport of the pipe, equipment and camp buildings to site.
- **Electricity** – will be required from the grid to supply power to the three pump stations. Negotiations for Power Purchase Agreements (PPA) will be conducted with relevant Authorities. All construction requirements will be supplied by portable generators.

EXISTING ENVIRONMENT

The majority of the pipeline route falls within areas previously cleared for farming; within existing power easements or road reserves. There is traverse of some eucalypt woodland areas between Swanbank and the North Beaudesert Balance Tank. The route from Kuraby Reservoir passes through Karawatha Forest which is listed on the Register of the National Estate and has a high diversity of plant communities, including wet heathland, melaleuca and eucalypt woodlands and open forest communities. Riparian vegetation is present on most of the watercourse crossings. The intent of the SRWP would be to minimize clearing in these areas.

Database searches, together with limited field investigations, have identified the potential for a number of threatened flora and fauna species to be located in proximity to the proposed pipeline route. Detailed studies will be carried out during the EIS to verify whether these species are present and likely to be adversely impacted in the pipeline corridor.

POTENTIAL IMPACTS AND MANAGEMENT

Pipeline

Typical impacts associated with the construction and operation of a pipeline include:

- Clearing of a 30 m corridor which has the potential to cause:
 - Fragmentation and edge effects due to vegetation clearing



- Loss of habitat
- Exposure of topsoil to erosion
- Disturbance of fauna due to construction noise
- Limited interference with land use for the duration of construction
- Introduction or spread of pest species
- Impacts on indigenous and cultural heritage values
- Adverse impacts to adjoining landholders from:
 - Noise, dust and vibration from construction
 - Traffic congestion
 - Restricted access

Management techniques will be based on best practice. They will include, but not limited to:

- Avoidance of remnant vegetation; large trees and riparian vegetation, where practicable, by careful route selection
- Avoidance of indigenous cultural heritage sites as far as practicable. Where they cannot be avoided, mitigation measures will be implemented in accordance with the Cultural Heritage Management Plan
- Habitat surveys to confirm and quantify site specific mitigation/management measures that will be documented in an Environment Management Plan (EMP)
- Limiting the construction period through planning and scheduling. Limiting the construction period promotes healthy seed stock and regrowth of rootstock
- Environmental Training programs and environmental audits during construction
- Development and implementation of a fire ant management program
- Restricting vegetation clearing to the minimum required to safely construct the pipeline
- The use, as necessary, of erosion control banks, drains, dams and sediment collection devices on slopes and in vicinity of drainage lines along the easement
- Segregation and stockpiling of topsoil and sub-soils
- Restricting vehicle access to the pipeline right-of-way (ROW) and designated tracks as far as practicable
- Implementation of a Weed Management Plan that will include provision of vehicle wash-down facilities, training for personnel in wash-down techniques and a weed control program



- Implementation of a an approved Fire Ant Risk Management Plan for pump stations, balance tanks and pipeline sections that are located within the South-West Fire Ant Restricted Area
- Fauna management techniques including limiting the distance between exit points to 500 m and provision of refuges at intervals of 250 m and conducting daily inspections of uncovered trenches
- Rehabilitation of the route including:
 - Re-establishing drainage patterns
 - Installation of erosion control mechanisms
 - river bank stabilization
 - brush spreading to assist in erosion control and provide a source of local provenance stock
 - reseeding using native species as appropriate

Pump Stations

Construction of the pump stations will occur on previously cleared and degrade grazing lands. Nonetheless management techniques as described above will be utilized to minimize the impact of temporary access roads and facilities to ensure rehabilitation occurs to an appropriate standard.

The pump stations have the potential to impact on the noise environment. Studies will be undertaken during the EIS to estimate the extent of noise impacts and appropriate mitigation measures will then be developed.

The Bundamba and Swanbank pump station sites are located within the South-West Fire Ant Restricted Area. Construction and maintenance activities will be conducted in accordance with an approved Fire Ant Risk Management Plan.

Balance Tanks

The construction of balance tanks will require the clearing of some remnant vegetation. Specific site studies will be carried out during the EIS to ensure the amelioration of erosion impacts and to avoid the destruction of vegetation that is classified as being of significance.

Rehabilitation of temporary access roads and facilities will be conducted as described above.

The Beaudesert balance tank site is located within the South-West Fire Ant Restricted Area. Construction and maintenance activities will be conducted in accordance with an approved Fire Ant Risk Management Plan.

COSTS BENEFITS

The establishment of the SRWP 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 region such as the proposed Wyaralong Dam-Cedar Weir project
- Ensuring a diversity of supply for the impacted 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.

