1.0 INTRODUCTION

1.1 BACKGROUND

The SRWP Co is proposing to build, own and operate an integrated water infrastructure network in south-east Queensland to provide to a bulk water supply network in the southern region. The Southern Region Water Supply (SRWP) will service the anticipated 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 relies on the utilisation of spare capacity within the existing water supply networks. It will eliminate expensive spare capacity within existing water supply networks. The network will consists of approximately 120 km of pipeline, three pump stations and two storage balance tanks.

Construction of the Project, estimated to cost circa $250 million, will be staged over a five to ten year timeframe to ensure the efficient utilization of spare capacity within existing water supply networks; to meet the needs of regional growth nodes as they emerge; and to enable the connection of future bulk water supply sources as they are developed.

1.2 PROJECT PROPONENT

A subsidiary of SEQWater Incorporated will be created as a company incorporated under the *Corporations Act 2001.* It will be established with the purpose of implementing, constructing and operating the SRWP on behalf of its shareholders.

The Shareholders of SRWP will be*:

- SEQ Water 51%
- Gold Coast City Council 13%
- Ipswich City Council 13%
- Logan City Council 13%
- Beaudesert Shire Council 5%
- Brisbane City Council 5%

* The shareholding equity is still under review.

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 to:

- Assist the Coordinator-General to make a decision on 'significant Project' declaration
- 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 EMP will be prepared as part of the approvals process.

A TOR for the EIS will be developed on the outcomes of this report and the requirements of relevant government agencies and other stakeholders through a public process.

2.0 THE PROPOSAL

2.1 LOCATION

The SRWP network will connect Mt Crosby Treatment Plant and the Kuraby Reservoir, both operated by Brisbane City Council with the Gold Coast Water Treatment Plant at Molendinar. The network will traverse the local government areas of Brisbane City, Ipswich City, Logan City, Gold Coast City and Beaudesert Shire. Further details of the locations of the component elements are provided below.

2.2 ELEMENTS

2.2.1 Pipeline

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 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. A connection point will be included to allow supply from the future Cedar Grove Weir and the 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 (Figure 2.1).

The pipeline will be buried, to a depth of approximately 750 mm, for the bulk of its traverse and consists of pipe ranging from 1050 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. The pipe will be coated for corrosion protection prior to delivery. Cathodic protection will also be provided to supplement the protective coating. The pipeline will be operated at a maximum allowable operating pressure of 1.6 MPa.

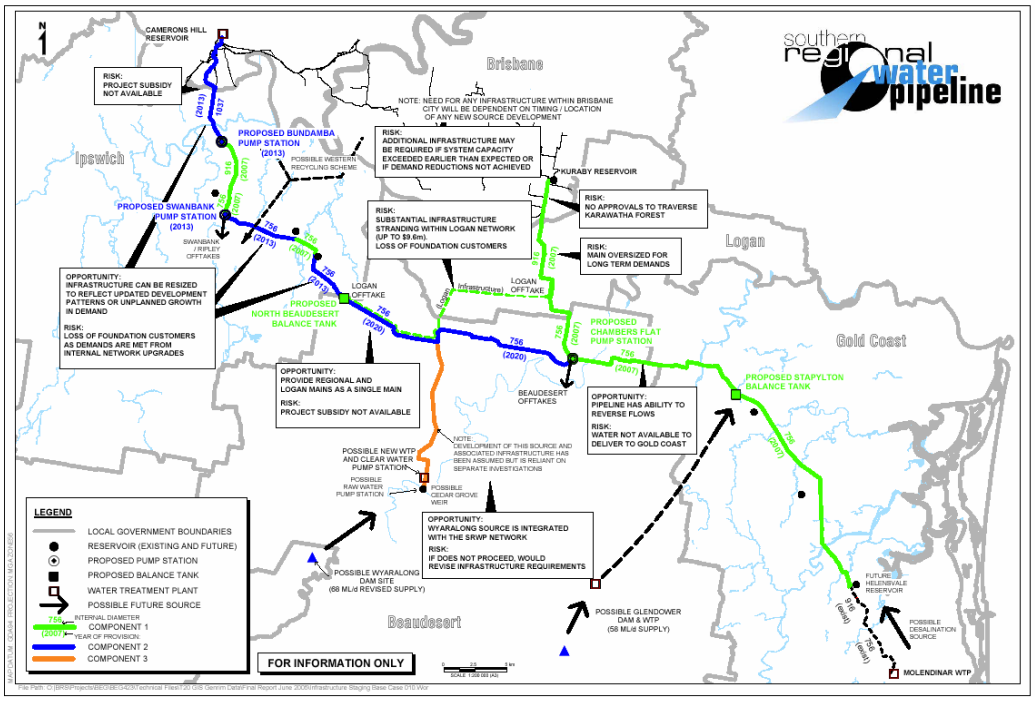

FIGURE 2.1 SRWP Staging of Components

2.2.2 Pumping

Supply from the two originating reservoirs at Camerons Hill and Kuraby has an inbuilt head or pressure to elevation and water will flow via gravity for the initial sectors of the pipeline. However, pumping will need to be introduced to ensure appropriate flows along the full length of the network.

Accordingly it is planned to construct and operate three pump stations to be located at Bundamba, Swanbank, and Chambers Flat.

The stations will be designed for automatic unmanned operation; be of low noise impact and have a shape, profile and colour to blend with the local environment; and be located in located in either industrial or rural areas to minimize residential disturbance.

2.2.3 Storage Balance Tanks

To assist in regional offtake efficiency and for maintenance of pressure within the system it will be necessary to construct two balance tanks. These will be located at North Beaudesert (between Springfield and Greenbank) and Stapylton.

In both cases the tanks will be founded on a concrete slab and civil works and clearing of the site will be required. Note that the Stapylton location lies within an existing quarry site, while the NBBT will require some vegetation clearing.

In both cases the tanks will be screened by batters with extensive revegetation undertaken.

2.2.4 Route Selection

The proposed route alignment (Figure 2.2) has been defined based on desktop assessment and limited, targeted field inspections. No detailed geotechnical or survey assessments have been undertaken to date.

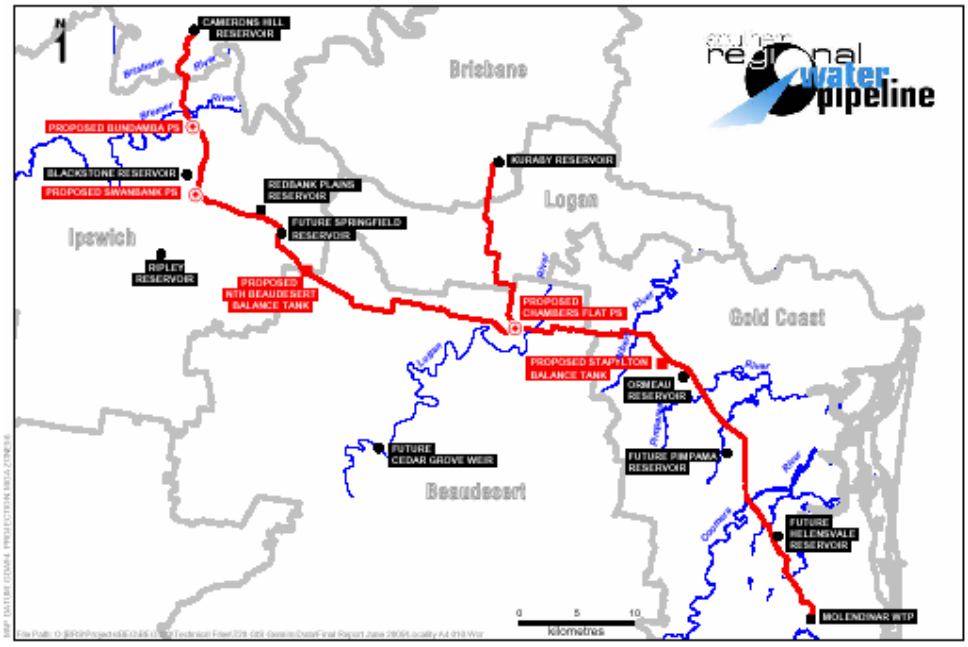

FIGURE 2.2 Location Map

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. 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.

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 (specifically Karawatha Forest) 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.

It should be noted that a substantive Review of Environmental Factors has already been produced as part of the Business Case Phase of the Project.

2.3 JUSTIFICATION AND ALTERNATIVES

2.3.1 Justification

The construction of the SRWP will provide an integrated water infrastructure network for south-east queensland taking into account:

- A 2050 time horizon
- SEQ Regional Plan
- SEQ Water Supply Strategy
- Current and future supply sources such as the proposed Wyaralong Dam-Cedar Grove Weir proposal
- Future growth and regional development nodes.

The SRWP as a complete regional infrastructure solution for bulk water supply in south-east Queensland, has a 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.

In addition the SRWP network provides security and diversity of supply for the impacted councils and allows for the future development and entry of new bulk water supplies at Wyaralong, Glendower and a possible regional desalination plant.

2.3.2 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 Organization 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.

Stage 1 if the Regional Water Supply Strategy recommended that a pipeline be the preferred option to provide water to the Gold Coast and Local Authorities in the region and this was endorsed by SEQROC.

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

- Potable re-use
- Desalination
- New reservoir storage
- Increased capacity in existing reservoirs e.g. Hinze Dam.

With respect to alternate routes a number of corridors were considered taking into account topographical features, land use, environmental and cultural issues, and the location of existing infrastructure corridors.

The proposed corridor has been chosen because it:

- minimizes potential impacts on sensitive ecosystems
- avoids known contaminated sites
- reduces conflict with existing and past mining activities (particularly in the Ipswich area)
- 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.

Whilst it is not expected that any major changes will occur in relation to the preferred route, the final alignment has not yet been agreed at this stage and is dependent upon the results of field surveys, geology, topography, ecology, cultural heritage values and Landowner negotiations. This will be discussed further in the EIS that will be prepared as part of the project approval process.

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 in the 0.6 km/day. Activities are carried out sequentially with each crew typically being separated by 4 to 5 days.

Typical activities to be undertaken include:

- **Temporary Facilities** — A range of temporary facilities will be required during pipeline construction. These include work areas for equipment and pipe delivery and storage, campsites and borrow pits to source additional fill material, if required. The location of these temporary facilities will depend on logistical requirements and the objectives of the pipeline route selection.

- **Access** — During construction, access tracks will be required to areas such as the pipeline easement, work areas and campsites. Existing roads, tracks and disturbed areas will be utilized as far as practicable to minimize disturbance to the surrounding areas. The selection of access tracks will be based on the objectives for the pipeline route selection and subject to the conditions of the EMP.

- **Clearing** — An average impact width of 30 m will be required for construction. The ROW is cleared of heavy vegetation; root stock is left in the ground where practicable to stabilize the area and reduce erosion. In scrubby areas some vegetation will be stockpiled for respreading as part of the restoration process. Breaks will be left in stockpiled vegetation to allow continued access for fence lines, stock and drainage lines. Gates will be installed where fence lines are required to be breached. Large mature trees will be preserved wherever practicable.

  Where hollow bearing tress cannot be preserved, hollows will be salvaged and relocated. Hollows that cannot be salvaged will be replaced by appropriately designed habitat boxes.

- **Grading —** The ROW will be levelled to the required gradient using graders, excavators and bull dozers. Topsoil will be removed, where required, and stockpiled separately for reuse during rehabilitation (Figure 2.3).

- **Trenching —** Either a wheel trencher or an excavator will be used to create the trench in which the pipe will be laid. In rocky terrain rock saws or excavators using rock picks are likely to be used however blasting is a possibility but would probably be limited. The length of trench left open at any given time will be the minimum practicable and dependent on land use and prevailing conditions. Breaks in the trench will be left to facilitate stock and wildlife crossing, and methods will be adopted to prevent fauna entrapment.

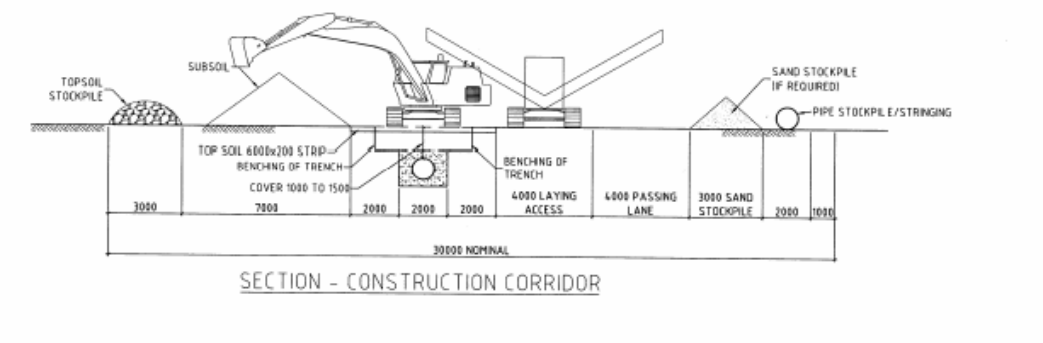

FIGURE 2.3 Right-of-Way Layout

- **Stringing** — Pipe will be transported to site on trucks in 13 m lengths. The pipe is laid out adjacent to the trench and held off the ground on skids (typically sand bags) that protect the pipe coating from damage.

- **Line-Up and Connection** — Once the pipe has been strung, a line-up crew will position the pipe using side boom tractors and internal line-up clamps. Pipes will then be connected through rubber ring joints Welding of short lengths will be necessary where steep terrain is encountered and at crossings**.**

- **Lowering In and Backfilling** — If the trench bottom does not contain any rocks or other material that may damage the pipe coating, the pipe will be laid directly on the trench bottom. However, if there are rocks or other debris present, sandbags or foam pillows will be placed on the trench bottom to support the pipe. The pipe will then be lifted off the skids and lowered into the trench using side-boom tractors. The trench will be backfilled, ensuring that topsoil is replaced last, and soil packed down to minimize the potential for subsidence**.**

- **Testing** — The pipeline will be hydrostatically tested for strength integrity and potential leaks by being filled with water and increasing the pressure to a minimum of 125% of MAOP.

- **Crossings —** Several different methods will be used when crossing rivers, watercourses, roads and major infrastructure corridors. The method used will be dependent on environmental factors, cultural heritage values and geotechnical constraints, which will be identified during the environmental studies. Typical methods used include open trenching, boring or directional drilling.

- **Clean up and Rehabilitation** — Excess spoil from trench excavations will be disposed of. Clean up and rehabilitation measures will be applied to the ROW, work areas, access tracks and camp sites in consultation with the relevant landholder/owner. Generally clean up and rehabilitation will involve removal of foreign material (construction material and waste), surface contouring, respreading topsoil, respreading vegetation and reseeding/revegetation typically with native grasses or other approved species. In certain areas a low 'formed amber' of dirt may be allowed to remain over the trench line to allow for possible subsidence. The formed camber is broken at regular intervals to prevent disruption to surface waters. In the South-West Fire Ant Restricted Area, activities will be undertaken in accordance with an approved Risk Management Plan

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 project activities are returned to a stable condition as soon as possible after construction
- land is returned as close to possible to its previous productivity
- stable landforms are re-established to original topographic contours
- natural drainage patterns are reinstated
- erosion control measure (e.g. contour banks, filter strips) are installed in erosion prone areas
- the pre-construction environment is reinstated
- disturbed habitats are recreated.

2.4.2 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
- 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 stockpiling topsoil
- Establishing erosion and sediment control measures
- Setting up of temporary facilities such as work areas for equipment delivery and storage, access roads and worker accommodation
- Laying 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 pump station sites are located within the South-West Fire Ant Restricted Area. Construction, rehabilitation and maintenance activities will be conducted in accordance with an approved Fire Ant Risk Management Plan.

Rehabilitation of the temporary facilities associated with pump station construction will be undertaken in accordance with those processes described in 2.4.1 above.

2.4.3 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.
- Installation of temporary fencing for construction.
- Liaison with adjoining landholder.
- Clearing of vegetation and grading of the site to prepare a safe construction working area.
- Setting up of temporary facilities such as work areas for equipment delivery and storage, access roads and worker accommodation.
- Laying concrete foundation slab for the tank and ancillary facilities.
- Erection 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 Beaudesert balance tank site is located within the South-West Fire Ant Restricted Area. Construction, rehabilitation and maintenance activities will be conducted in accordance with an approved Fire Ant Risk Management Plan

In both cases the tanks will be founded on a concrete slab and civil works and clearing of the site will be required. Note that the Stapylton location lies within an existing quarry site, while the NBBT will require some vegetation clearing.

Rehabilitation of the temporary facilities associated with balance tank construction will be undertaken in accordance with those processes described in 2.4.1 above.

2.4.4 Operations

Given that the pipeline will be underground, land users are 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 and no long-term impacts would be expected to such areas.

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 included 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 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. All information will be relayed back to the central control room. The SCADA system will enable the pipeline controller to instantly ope or close valves, alter operating pressures and start or stop equipment as required at sites along the pipeline.

- **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**, regular inspection of the pipeline ROW to spot any construction or earthmoving activities in the area, and third party education on the potential impacts of carrying out activities in proximity of the pipeline. In some areas such as crossings, marker tape or concrete slabs may be buried above the pipeline to reduce risk of third party interference. Security fencing, gates and locks will be provided around all major above ground facilities (i.e. pump stations, balance tanks and mainline valves) to inhibit accidental or unauthorized tampering.

- **Cathodic Protection** — Pipeline corrosion will be prevented by the protective external coating and cathodic protection systems. The cathodic protection system will be checked regularly to ensure that the protection voltages are within limits and to monitor any likely areas of corrosion activity. The cathodic protection system and external coating work independently to protect the pipeline form corrosion.

2.4.5 Workforce Accommodation

Due the urban regional nature of the project it is not anticipated that accommodation camps will be required for the workforce.

Field camps will be established to house day to day workforce activities e.g. catering, washroom, toilet etc. The exact location of these facilities will be determined once the construction program is finalised.

At this stage it is not anticipated that any night work will be required, however the possibility has not been eliminated. SRWPCo 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 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. The proposed route, while predominantly on rural land does traverse some residential areas. 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.

Hazard and risk planning will also address the implications arising from increased congestion and changed traffic conditions on roads within and adjacent to the construction area.

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 Gas

The project will not require access to gas supply.

2.7.2 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. Potable water will be kept separate from construction activity water.

2.7.3 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 pipe will be manufactured in or rail freighted or shipped to Brisbane and then transported by road to site.

2.7.4 Electricity

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.

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 SRWP 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 SRWP 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 SRWP is estimated at $250 million to be spent over a 5 to 10 year timeframe.

2.9 EMPLOYMENT OPPORTUNITIES

It is intended that the pipeline construction will consist of a number of limited sector activities in parallel allowing local contractors to compete for the Project. These sectors will likely be approximately 15 km in length, with total employment of circa 50 personnel, depending on the number of parallel fronts being undertaken. The local employment opportunities will include manual labour, plant operators and hire, catering supplies, transport and courier services, fencing services and waste management contractors.

A single contract package has been assumed for all river, road and rail crossings and another for the cathodic protection supply and installation. Pump station and balance tank installation will also be discrete packages.

In addition to direct opportunities, further employment could arise from vehicle hire, general fabrication and maintenance requirements.

Full compliance with the State's 10% Training Policy is unlikely due to the short duration of pipeline construction activities. SRWPCo will negotiate with the Department of Employment and Training to establish an acceptable level of compliance.

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 initial Stage of the Project will cost approximately $150 million during the Financial Years 2005/6 to 2007/8. The State Government has confirmed that the Project has been granted a subsidy under the Local Government and Planning Community Infrastructure provisions of a level of 33.3%. This equates to $50 million for Stage 1.

The remainder of the capital requirements will be a mixture of equity (from the Shareholders), capital injection (e.g. from Gold Coast City Council), and debt provided by QTC. The exact mix of funding and the level of debt will be negotiated between SRWPCo and the Shareholders and the State Government during the Planning and Applications Phase.

2.11 PROPOSED ENVIRONMENTAL STUDIES

Environmental investigations completed to date have been largely desktop with some limited field investigation and fauna trapping in specific areas of interest e.g. Karawatha Forest. More detailed environmental and engineering investigations will be completed prior to finalisation of the preferred route alignment (Table 2.1).

Table 2.1 List of detailed environmental studies proposed

Discipline	Topic
Engineering	Engineering Detailed Design
	Hazard and Risk Assessment
	Route Alignment
Flora	Identification of areas of conservation significance(including regional significance)
	Rare and Endangered Plant Study
	Vegetation Survey of Selected Corridor
Fauna	Identification of areas of conservation significance (including regional significance)
	Rare and Endangered Fauna Survey
	Habitat and Fauna Survey of Selected Corridor
Geotechnical	Geology
	Terrain and Soil Evaluation and erosion hazard
	Water Crossing Study
	Acid sulfate soils investigation
Cultural and Social	Cultural Heritage Study
	Cultural Heritage Management Plan
	European Heritage Study
	Social Impact Assessment
	Economic Analysis
General Environment	Air Quality Assessment
	Construction and Operations Noise Impacts
	Contaminated sites investigation