DCEO Approval Memorandum

Work Package 7624 - Loganholme WWC Inlet Works, By-pass and Effluent Outfall Augmentation

Logan City Council

DCEO Approval Memorandum

Loganholme WWC Inlet Works, By-pass and Effluent Outfall Augmentation
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1. Purpose of Memorandum

The purpose of this memorandum is to seek approval from the DCEO Road & Water Infrastructure for the Logan Water Alliance (LWA) to proceed with the delivery phase of Work Package 7624 - Loganholme WWC Inlet Works, By-pass and Effluent Outfall Augmentation at a total estimated cost of $23.6 million.

2. Project Background

2.1 Project Drivers

The lift station at the existing inlet works is significantly under capacity. The civil works were originally designed for maximum flows of 1000L/s. The pump capacity was upgraded to 2000L/s whereas flows are being recorded in excess of 3000L/s during wet weather. This results in drowning of the pump station, overflows and risk of outright mechanical failure.

Further, at 21.5m deep and with the risk of high instantaneous flows and toxic gas build up, proper maintenance of the lift station cannot be undertaken due to workplace health and safety issues. Since this facility carries 85% of the Logan metro area wastewater flows, the current arrangement poses significant environmental, public and workplace health and safety risks. Further, the inlet works facility and does not currently comply with the plant's licence conditions.

Based on population projections, the treatment plant's catchment population will increase by 35% by 2026 and more than double over the next 50 years. The new inlet works will provide the capacity required to resolve the immediate capacity deficiency and provide additional capacity for growth in the existing Loganholme catchment and future catchment expansion to include the Park Ridge, Logan Village, Yarrabilba and Greenbank growth corridors. It will also accommodate the potential future transfers of flows from the Beenleigh catchment. Design of the inlet works has been based on the ultimate treatment plant demand and capacity.

The proposed Alfred St to Loganholme rising main augmentation will connect to the new inlet works. The new main will increase the total wet weather flows to the treatment plant as it will relieve a constraint in the existing conveyance system. That is, the existing main is under capacity and hence 'throttles' flows causing a back water effect in the upstream trunk mains, resulting in wet weather overflows at the Meakin Rd and Chetwynd St overflow points. The Alfred St rising main is scheduled for completion by late 2013 to align with the completion of the inlet works project.

2.2 Project Scope

The scope of the work to be completed as part of this project consists of:

- Construction of a new concrete inlet works structure to accommodate screening and grit removal equipment, screenings and grit storage system and odour treatment system
- New mechanical band screens (4) and wash presses (2), vortex grit traps (2) and grit classifiers (2) and associated launders, pipeworks, pumps, conveyors and storage bins
• Provision of an odour control system and associated ductwork for the new inlet works
• Electrical and control equipment upgrade including building modifications for switchroom
• Construction of duplicate PWWF by-pass and effluent outfall pipelines including a new effluent outfall measuring chamber, and provision of rising mains connection pipework to the new inlet works
• Extension and upgrading of plant roads
• Modifications to the Chetwynd Street lift pump station and installation of a rising main to link to the new inlet works
• Upgrade of pipelines linking the new inlet works to the existing treatment plant facilities
• Construction of 30 metres of rising mains for the future Beenleigh diversion and a new rising main from Chambers Flat in the longer term
• Construction of 120 metres of the Alfred Street to Loganholme WWTP Rising Main Augmentation from the inlet works to the plant boundary.

3. Target Outturn Costs

The Target Outturn Cost (TOC) is the LWA's determination of costs to design, construct, commission and handover the new asset to Logan City Council. The TOC for the projects has undergone a review by an independent estimator.

The TOC and Project Fee Work Package 7624 - Loganholme WWC Inlet Works, By-pass and Effluent Outfall Augmentation is $22,481,112 exclusive of GST.

The TOC for Work Package 7624 was endorsed by the LWA Alliance Leadership Group on 25 May 2012 (refer Attachment A).

4. Economic and Regulatory Requirements

4.1 Capital Expenditure Requirements

Logan City Council, as a Water Service Provider under State Legislation is subject to Queensland Competition Authority (QCA) Price Regulation. The QCA regulation states that for capital expenditure to be included in the Regulated Asset Base (RAB), which is used as the basis for pricing determination, it must be demonstrate prudence and efficiency. A summary of this assessment is presented below.

A more detailed assessment of the Prudence and Efficiency Test is presented in Attachment B.

4.2 Prudent Expenditure

In accordance with the Framework, this project is considered prudent as it meets a number of key criteria as follows:

• Growth - the proposed investment ensures that the plant can operate at design capacity to serve growth within the extended Loganholme catchment.
• Statutory Obligations - this project is required to meet legislative environmental obligations relating to the plant’s ability to meet its DEHP operating licence.
4.3 Efficient Expenditure

From an efficiency perspective this project meets the following assessment criteria:

- **Scope of works** - the proposed project scope was determined from comprehensive planning studies and modelling. The project was also subject to 'Value for money' multi-criteria selection processes using "Whole of Life" and "Least Cost" option analysis.
- **Standard of work** - the standard of works will conform to all regulatory and industry practice, codes and manuals.
- **Costs** - The TOC includes direct costs that have been obtained through a competitive tendering process. Further cost scrutiny of the TOC has been applied through the engagement of an Independent Estimator (Project Support Pty Ltd.)
- **Building of works** - There are several work components to be undertaken at the treatment plant. Efficiencies in project management and delivery costs are being achieved by the bundling of these separate elements into as single work package.

5. **Budget Provision**

The total budget provision for approval is made up of the following components (refer to Attachment A):

- Project TOC: $20,057,487
- Project Fee: $2,423,625
- Total: $22,481,112

Owner Risk & Contingencies: $1,125,000
- Total: $23,606,112

All costs are exclusive of GST.

Owner's Risks are those costed risks that Logan Water has opted to manage outside of the TOC to avoid the costs (under the pain/gain share provisions) associated with low probability risks.

The project is scheduled to be delivered over three financial years with the following cash flows:

- 2011/12: $1,050,000
- 2012/13: $9,450,000
- 2013/14: $13,106,112

These budget allocations have been included in the Logan Water Capital Works Program.

It is noted that a component of the LWA program management budget will be allocated to this budget when capitalised. The approval of the LWA program management budget will be sought under a separate report.
6. Business Risks
The following risks are the key risks to the organisation and its strategic objectives:

<table>
<thead>
<tr>
<th>Risk</th>
<th>Detail of Risk</th>
<th>Details of how this proposal contributes to the mitigation of the risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public and Employee safety</td>
<td>The risk that practices to manage the safety of staff and the public are ineffective</td>
<td>Potential safety risks to staff working at the site will be reduced through improved equipment and improved access for mobile plant.</td>
</tr>
<tr>
<td>Financial</td>
<td>The risk that financial targets are not achieved</td>
<td>Competitive costing has been achieved for delivery of this project. Funding for the project has been provided in the budget.</td>
</tr>
<tr>
<td>Infrastructure Demand</td>
<td>The risk that the growing infrastructure requirements of the community are not met</td>
<td>Improvement in performance and capacity of the plant will ensure that growth and development needs are met.</td>
</tr>
<tr>
<td>Regulatory</td>
<td>The risk that LCC fails to comply with economic and legal regulatory obligations</td>
<td>Increased hydraulic capacity and improved screening will minimise potential for licence exceedances.</td>
</tr>
</tbody>
</table>

7. Recommendation

It is recommended that:

The DCEO Road & Water Infrastructure approve the Logan Water Alliance (LWA) to proceed with the delivery phase of Work Package 7624 - Loganholme WWC Inlet Works, By-pass and Effluent Outfall Augmentation at a total estimated cost of $23.6 million.

Date: 3/7/12

Recommended / Not-Recommended

Date: 3/7/12

Approved / Not Approved

Tony Goodhew
Water Infrastructure Manager

Silvio Trinca
DCEO
Road & Water Infrastructure
Attachment A

Work Package 7624 - Project TOC Report
Attachment B

Prudency and Efficiency Test
To: ALG
From: APMT
Subject: Work Package 7624 - Project TOC Report
Date: 05 June 2012

Paper Presented for Approval

1. Purpose

The purpose of this paper is to submit the Project TOC Report - Work Package 24, Loganholme WWTP New Inlet Works and Upgrade of By-pass and Effluent Discharge Pipework Project to ALG for approval.

Works within Work Package 24 are to be completed within the 2013/14 financial year.

2. Background

Work Package 24 consists of the design and construction of a new inlet works and the augmentation of the by-pass and effluent discharge pipework at the Loganholme WWTP (LWWTP) to meet current and future flows to the facility so that licence requirements are met.

Based on population projections, the current catchment population will increase by 35% by 2026 and more than double over the next 50 years. The works in this project will provide additional capacity at the plant to meet this forecast growth in the existing Loganholme, Beenleigh, Park Ridge and Greenbank catchments.

The existing inlet works has insufficient capacity to fully comply with the plant's licence conditions. The projected large increases in flow in the near term mean that construction of the new inlet works must be undertaken now.

This project was previously approved by the ALG in October 2011 (ALG-183) but due to uncertainty surrounding the transfer of the Alconnex Water business back to the councils, the project was never endorsed by the Alconnex Water Board. The TOC has been amended to include current subcontract tendered prices as well as to suit future Logan City Council capital budgets.

3. Project Covered within this Report

Work Package 24 (7624) consists of:

- construction of a new concrete inlet works structure to accommodate screening and grit removal equipment, screenings and grit outload and storage systems and odour treatment system

- new mechanical band screens (4); and wash presses (2), vortex grit traps (2) and grit classifiers (2) and associated launders, pipework, pumps, conveyors and storage bins

- provision of an odour control system and associated ductwork for the new inlet works

- electrical and control equipment upgrade including building modifications for switchroom
• construction of duplicate PWWF by-pass and effluent outfall pipelines including a new effluent outfall measuring chamber, and provision of rising mains connection pipework to the new inlet works
• extension and upgrading of plant roads
• modifications to the Chetwynd Street lift pump station and installation of a rising main to link to the new inlet works
• miscellaneous pipeline diversions to the new inlet works
• upgrade of pipelines linking the new inlet works to the existing treatment plant facilities
• construction of 30 metres of rising mains from the BE47 transfer, and the future Beenleigh diversion and southern relief sewers to the inlet works
• construction of 120 metres of the Alfred Street to Loganholme WWTP Rising Main Augmentation from the plant boundary to the inlet works

The primary objective of this Project, Work Package 24, is to ensure that legislative requirements at the treatment plant can be met and secondly to provide plant capacity to support future growth in the catchment.

4. Discussion
The recommended Target Outturn Cost (TOC) for the project is based on subcontractor submitted prices and a First Principles Estimate.

A Risk assessment has been undertaken to give a view of the likelihood and consequence of risks associated with the delivery of this Work Package. A number of risks have been identified for this Work Package which are considered unlikely but could have significant consequences if realised. The Owner has therefore opted to manage these risks separately rather than manage these risks using an allowance in the TOC for this Work Package i.e. the risks will only be funded if realised. The Owner Risk value for this Work Package is $376,322. The Alliance has also included $1,073,702 of provisional items in the TOC for which the full scope of work or risk provisions are unable to be accurately determined. Actual costs incurred for these items will be paid.

Of the risks to be managed by the Alliance, a Monte Carlo, P50 risk value of $403,399 has been included in the TOC. This represents 2.5% of the Work Package direct cost.

The TOC for the project has been endorsed by the independent estimator.

A high level breakdown of the total cost is given below.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Total $</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TOC Development Costs</td>
<td>$1,260,948</td>
<td>Sum of TOC Development Costs</td>
</tr>
<tr>
<td>2</td>
<td>Work Package – Project</td>
<td>$2,519,378</td>
<td>Project Management and Supervision, site establishment and Statutory Levy.</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Risk and Opportunities</td>
<td>$403,399</td>
<td>P50 value</td>
</tr>
<tr>
<td>5</td>
<td>WP 7624 - TOC</td>
<td>$20,057,487</td>
<td>(Inc AW Costs)</td>
</tr>
<tr>
<td>6</td>
<td>Project Fee</td>
<td>$2,423,625</td>
<td>Fee does not apply to Alconnex Water costs</td>
</tr>
<tr>
<td>7</td>
<td>WP 7624 - TOTAL</td>
<td>$22,481,112</td>
<td>Total for Work Package</td>
</tr>
</tbody>
</table>

The relative breakdown of Project cost by estimate category with respect to Direct Costs is as follows:

<table>
<thead>
<tr>
<th>Estimate Category</th>
<th>% of Direct Cost</th>
<th>Industry standard for D&amp;C (% of DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOC Development</td>
<td>8%</td>
<td>N/A</td>
</tr>
<tr>
<td>Project Management</td>
<td>16%</td>
<td>12-15%</td>
</tr>
<tr>
<td>Direct Costs</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>R&amp;O</td>
<td>2.5%</td>
<td>5-7%</td>
</tr>
</tbody>
</table>

Aside from the allocation for project management, the weightings of project costs as a percentage of direct costs compared to industry benchmarks for this project are normal. Due to the highly technical nature of the equipment to be installed in this project as well as the need to have commissioning support on site for a large portion of the project, project management required is relatively high.

The above comparison table is valid as it compares Alliance direct costs during Project Delivery to industry benchmarks for design and construction projects following completion of the “tender design and project pricing”. This work is equivalent to the works completed by the Alliance during the TOC Development Phase of the Project.

Information presented in the above table is also represented in the following chart.

---

1 Includes $1,061,759 provisional item for Chetwynd Street lift station works and $11,943 provisional item for exchange rate fluctuations.
5. APMT Review
The APMT have reviewed this Work Package 24 Project TOC Report and recommend it to ALG for approval.

6. Recommendation
The APMT recommends that the ALG approve:

- Work Package 24 TOC of $20,057,487
- Project Fee of $2,423,628
- Total including fee of $22,481,112
- Commissioning completion date of 17 March 2014, based on funding approval date of 1 July 2012

It is noted that values shown above are exclusive of GST.

David Fullerton
Alliance Manager

Tony Goodhew
Group Manager, Infrastructure Planning
Attachment B

Prudency and Efficiency Test
Loganholme WPCC Inlet Works and Bypass

Prudency and Efficiency Test

all connex
water™

all connected all for you all the time
Purpose of this document

A range of structural and regulatory reforms have been implemented for the provision of water and wastewater services from south east Queensland (SEQ) water reform. This resulted in the establishment of Allconnex Water as SEQ’s southern distributor–retailer to provide water distribution and retail activities; and wastewater distribution, treatment, discharge and retail activities. These activities have been recognised by the Queensland Government as monopoly activities, giving rise to the need for independent economic regulation. Allconnex Water is required by legislation to perform its functions efficiently and effectively.

The Queensland Competition Authority developed a framework to apply to all water distribution–retail entities to ensure that the monopoly businesses are not over recovering and have also detailed information requirements to verify whether expenditure is prudent (there is a demonstrated need for the expenditure) and efficient (it is cost-effective in its scope and standard, using market benchmarks).

The purpose of the prudence and efficiency test is to assess each project against criteria developed to meet the Queensland Competition Authority’s requirements, incorporating knowledge gained from Allconnex Water’s price monitoring review and to provide the Group Managers and General Managers sufficient information on the project for assessment without having to read all the supporting information. This document will pull together information from current QP-22 forms including the project initiation form, options analysis and business case to demonstrate that the corporate and regulatory requirements for prudence and efficiency have been considered and met.

Version History

<table>
<thead>
<tr>
<th>Version</th>
<th>Nature of Change</th>
<th>Date</th>
<th>Changed By</th>
</tr>
</thead>
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<td>Original Document</td>
<td>28/02/2011</td>
<td></td>
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<tr>
<td>2</td>
<td>TOC Approval</td>
<td>1/06/2012</td>
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</tr>
</tbody>
</table>

Do not delete the first three people on this approval list. These people will determine with sufficient information has been included in the document for the project to pass the Prudence and Efficiency Test.

Approval List

(Add additional personal applicable to your project)

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Action</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chief Operating Officer</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Commercial Manager Strategic Projects</td>
<td></td>
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<tr>
<td></td>
<td>Group Manager Pricing and Regulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daryl Ross</td>
<td>Strategic Group Manager, Planning and Infrastructure Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tony Goodhew</td>
<td>Group Manager, Infrastructure Planning</td>
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</tbody>
</table>

Date circulated: DD/MM/YY
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1 Introduction
This project provides a new inlet works and upgrades the storm bypass pipework at Loganholme WPCC. The works are required to accommodate increased flows arising from network upgrades and ensure licence compliance.

2 Project Details

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Loganholme WPCC Inlet Works and Bypass</th>
<th>Project No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description:</td>
<td>This project involves the design and construction of a new inlet works and the augmentation of the by-pass and effluent discharge pipework at the Loganholme WWTP (LWWTP) to meet current and future flows to the facility so that licence requirements are met. The project consists of:</td>
<td></td>
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<tr>
<td></td>
<td>construction of a new concrete inlet works structure to accommodate screening and grit removal equipment, screenings and grit outload and storage systems and odour treatment system</td>
<td></td>
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<tr>
<td></td>
<td>new mechanical band screens (4) and wash presses (2), vortex grit traps (2) and grit classifiers (2) and associated launders, pipework, pumps, conveyors and storage bins</td>
<td></td>
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<tr>
<td></td>
<td>provision of an odour control system and associated ductwork for the new inlet works</td>
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<tr>
<td></td>
<td>electrical and control equipment upgrade including building modifications for switchroom</td>
<td></td>
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<tr>
<td></td>
<td>construction of duplicate PWWF by-pass and effluent outfall pipelines including a new effluent outfall measuring chamber, and provision of rising mains connection pipework to the new inlet works</td>
<td></td>
</tr>
<tr>
<td></td>
<td>extension and upgrading of plant roads</td>
<td></td>
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<tr>
<td></td>
<td>modifications to the Chetwynd Street lift pump station and installation of a rising main to link to the new inlet works</td>
<td></td>
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<tr>
<td></td>
<td>miscellaneous pipeline diversions to the new inlet works</td>
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<td></td>
<td>upgrade of pipelines linking the new inlet works to the existing treatment plant facilities</td>
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<tr>
<td></td>
<td>construction of 30 metres of rising mains from the BE47 transfer, and the future Beenleigh diversion and southern relief sewers to the inlet works</td>
<td></td>
</tr>
<tr>
<td></td>
<td>construction of 120 metres of the Alfred Street to Loganholme WWTP Rising Main Augmentation from the plant boundary to the inlet works</td>
<td></td>
</tr>
</tbody>
</table>
### Project Scope:

The following tasks are in the scope of this project:
- Project management
- Detailed Design
- Obtaining all necessary Environmental and Statutory Approvals
- Procurement
- Stakeholder engagement and project communications
- Construction
- Commissioning and handover

### Project Objective:

The objective of this project is to upgrade Loganholme WPCC with a new inlet works structure that will:
- Accept additional flow from existing Loganholme catchment
- Accept flow diversions from Beenleigh WWTP which in turn allow the cancellation of the Stapylton WWTP project
- Comply with DERM license requirements
- Address OH&S and maintenance issues
- Complement long term planning for future growth
- Mitigate the impact of wastewater overflows

### Related Projects

Related projects include:
- Alfred Street Pump Station to Loganholme WPCC rising main augmentation – Gravity Main, New SPS, and Rising Main
- Stapylton Beenleigh Network Upgrade (including the BE 47 to Loganholme diversion)

The inlet works and bypass must be commissioned before the Alfred St to Loganholme rising main augmentation or the BE 47 diversion are complete. Detailed hydraulic analysis throughout Loganholme WPCC must be completed before flows are increased through the new inlet works.

### Business Driver:

<table>
<thead>
<tr>
<th>Driver</th>
<th>☐ New (not growth)</th>
<th>☑ New (Growth)</th>
<th>☐ Replacement</th>
<th>☑ Improvement</th>
<th>☑ Compliance (Regulator required)</th>
</tr>
</thead>
</table>

### 3 Link to Driver

#### Corporate

N/A

#### Demand forecast and impact of revised forecasts

South East Queensland's Regional Plan 2005-2026 identifies the Loganholme WPCC catchment as an area zoned for future residential development.

According to the latest projections prepared for the Logan Priority Infrastructure Plan (PIP), the expected populations in the Loganholme WPCC Catchment area are:
- 2011 - 228,553 EP
- 2016 - 254,858 EP
- 2051 - 467,857 EP
- 2061 - 551,364 EP

These figures include all of the proposed diversions into the Loganholme catchment.

#### Asset condition and risk assessment results

N/A
| Legislative link or regulator correspondence | The works are required to comply with the conditions of the Loganholme WPCC Development Approval under the Sustainable Planning Act 2009 and comply with general obligations under the Environmental Protection Act 1994 to avoid environmental harm. The plant cannot meet the licence requirement to provide fine screening and degritting for all flows. Allconnex Water has an obligation to provide a safe work place under the Workplace Health and Safety Act 2012. Wastewater overflows from the bypass pose health and safety risks for plant operators. |
| Customer Service Standard and service obligations | N/A |
| Customer/community consultation | N/A |
Logan Water revised its Total Management Plan (TMP) / SAMP in early 2009.

The Infrastructure Planning sub-plan of the TMP outlines the general process by which the infrastructure requirements to serve new growth is developed through the planning process. The Inlet works upgrade was not specifically identified in the capital works program in the Logan Water Total Management Plan (TMP). The TMP notes that the capital works program included there was subject to further development and refinement.

No Priority Infrastructure Plan has yet been approved for the Logan District. This is currently in preparation. Allconnex Water's staff are working in close liaison with the LCC PIP project team.

Planning for the inlet works is consistent with master and strategic planning:

- Circa 2009, it was recognised that the screens at Loganholme WPCC were undersized and not performing adequately, and that the wet well of the Chetwynd Street lift station supplying the inlet works was dramatically undersized.
- In 2009, subsequent studies were undertaken and found that the preferred upgrade for the inlet works included a new inlet works structure located south of the existing oxidation ditches in accordance with the Loganholme WPCC Master Plan which aligned with the Logan North Wastewater Strategy.
- The Loganholme, Beenleigh and Stapylton Wastewater strategy identified the opportunity to divert flows from the Beenleigh catchment into the Loganholme WWTP.
- The Logan Water Alliance completed an assessment of alternative options for servicing Greenbank in December 2010. The preferred option involved conveyance of wastewater from Greenbank to the Park Ridge wastewater network and ultimately to the Loganholme WPCC via a new pump station, rising main and gravity main.

| Legislative link or regulator correspondence | As above |
| Customer Service Standard and service obligations | N/A |
| Customer/community consultation | N/A |
## Solution Development

### Outline the risks to the organisation if the project does not proceed

The risks if the organisation does not proceed with the project are:
- Inability to connect the proposed Alfred St to Loganholme WPCC rising main which provides additional capacity for growth in the existing Loganholme WPCC catchment
- Inability to connect the BE 47 diversion rising main from the current Beenleigh WWTP catchment which in turn provides additional capacity for growth in Beenleigh and Stapylton
- Ongoing failure to comply with the licence conditions for fine screening and degritting
- Ongoing WH&S risks from wet weather overflows from the bypass pipeline within the plant.

A new inlet works will provide required hydraulic and process capacity, improved treatment downstream of the inlet works by protecting existing equipment, and will address the WH&S issues identified in the existing inlet works.

### Options Analysis (QP-2205) – must consider:

- **Do nothing**
- **Existing Asset Option(s) (Modification to the existing network operations to defer expenditure)**
- **Non-infrastructure/asset alternative(s) (e.g. demand management)**
- **New infrastructure/asset option(s)**

A range of options have been considered for location of the inlet works and staging of the proposed works as part of the completion of concept design. Licence compliance cannot be achieved by modifications to existing operations or demand management. Capital investment is necessary.

### Options modelled using the most recent DSS

Concept design was completed using the most recent DSS with peak wet weather flows of 1300 L/EP/day.

### Transparent, without bias options analysis which includes:

- **MCA assessment according to QP2205**
- **Sensitivity testing**
- **Clear recommendation of the option selected**

The project was subject to 'Value for Money' multi-criteria selection processes using "Whole of Life" and "Least Cost" option analysis.

### Identification of existing assets being made redundant before the end of useful life

The existing inlet works structure and equipment will be made redundant before the end of its useful life.

### Asset disposals/decommissioning/write
The works will be designed in accordance with normal design practice and using the applicable industry standard codes and practices. Normal construction codes and practices will apply.

There are several disparate components of the works to be undertaken at the treatment plant. Efficiencies in project management and delivery costs are achieved by the bundling of these separate elements into a single Work Package.

Concept design was completed in March 2011.

Finalisation of the site master plan cannot be completed until the existing plant process capacity improvement works have been carried out. A preliminary master plan has been developed for the site with optimal locations for selected equipment. Finalisation of the site master plan is being carried out under Planning Task 90-11-49

6 Cost estimates of preferred option

<table>
<thead>
<tr>
<th>Estimated total capital cost</th>
<th>$26.29 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>2011/2012</td>
</tr>
<tr>
<td>Capital ($m)</td>
<td>$1.4 m</td>
</tr>
<tr>
<td>Own Risk ($m)</td>
<td>$0.24 m</td>
</tr>
<tr>
<td>PM ($m)</td>
<td>$0.43 m</td>
</tr>
<tr>
<td>Total</td>
<td>$1.63 m</td>
</tr>
</tbody>
</table>

The project has been designated for delivery by the Logan Water Alliance. Under the Alliance approach, the cost of the works have been reviewed and endorsed by an independent estimator directly engaged by Allconnex Water. The independent estimator determines whether the Target Out-Turn Cost (TOC) is a reasonable estimate to deliver the project using normal engineering design, construction and management practices. The Alliance has also prepared a first principles estimate of the direct construction costs to confirm that tenders received from sub-contractors align with prevailing market rates. The first principles estimating process and the independent estimator review together provide detailed benchmarking against prevailing market rates.

The total cost estimate of $26.29 million is made up of the following components:
- TOC and project Fee $22.48 m
- Owner Risk $0.38 m
- Program Management $3.43 m
- Total $26.29 m
7  Timing and deliverability

<table>
<thead>
<tr>
<th>Duration of project is estimated to be</th>
<th>2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement</td>
<td>The Logan Water Alliance approach includes seeking competitive tenders from sub-contractors and suppliers for specific project delivery, and includes specific development of the procurement approach to identify the best packaging of sub-contracts and supply packages.</td>
</tr>
<tr>
<td>Efficiency Gains</td>
<td>Opportunities for efficiencies during the delivery phase will be investigated as the project progresses.</td>
</tr>
<tr>
<td>Risk management</td>
<td>Under the Alliance approach, a delivery risk register is developed as part of the TOC report. The register identifies risks, estimates of the cost impact and proposed mitigation strategies.</td>
</tr>
</tbody>
</table>

8  Operating Expenses

| Implications for operating expenses | There may be a moderate, immediate increase in unit operating costs. Whether this occurs will depend on the final screening configuration chosen for the new works and the timing of catchment change. Creation of this infrastructure will enable development, which in turn will increase the number of connected and chargeable properties. Load on infrastructure, operating expenses and revenue will all increase over time. The profile of operating cost increases has not specifically been assessed. |
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