Appendix 3

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Capital Expenditure Review
(Cardno (Qld) Pty Ltd)

Cardno
Shaping the Future

CAPITAL EXPENDITURE REVIEW

Job No:	R1081-06
Prepared for:	Gladstone Area Water Board
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Brisbane Office

Cardno (Qld) Pty Ltd

ABN 57 051 074 992

Level 11 Green Square North Tower

515 St Paul's Terrace

Fortitude Valley Qld 4006

Locked Bag 4006 Fortitude Valley

Queensland 4006 Australia

Telephone: 07 3369 9822

Facsimile: 07 3369 9722

International: +61 7 3369 9822

cardno@cardno.com.au

www.cardno.com.au

Rockhampton Office

Cardno (Qld) Pty Ltd

ABN 57 051 074 992

1 Aquatic Place

North Rockhampton Qld 4701

PO Box 3174

Rockhampton Shopping Fair

Queensland 4701 Australia

Telephone: 07 4924 7500

Facsimile: 07 4926 4375

International: +61 7 4924 7500

Email: rocky@cardno.com.au

Web: www.cardno.com.au

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		Name	Initials	Name	Initials
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ABBREVIATIONS

AHD	Australian Height Datum
BSL	Boyne Smelters
CAPEX	Capital Expenditure
DICL	Ductile Iron Cement Lined
FSL	Finished Surface Level
GAWB	Gladstone Area Water Board
GRC	Gladstone Regional Council
GWTP	Gladstone Water Treatment Plant
ML	Megalitre
OPEX	Operational Expenditure
QAL	Queensland Alumina Ltd
QCA	Queensland Competition Authority
QWC	Queensland Water Commission
SAMP	Strategic Asset Management Plan
SCADA	Systems Control and Data Acquisition
WSAA	Water Services Association of Australia
WTP	Water Treatment Plant
YWTP	Yarwun Water Treatment Plant

EXECUTIVE SUMMARY

Cardno has been engaged by Gladstone Area Water Board (GAWB) to provide an independent review and report on its capital expenditure submissions to enable justifications to be made on the appropriateness of:

- 5 specific projects which were commenced in the period 2005 to 2009; and
- proposed capital expenditure for the 10 years from 2009/10 to 2018/19 with an emphasis on the first 5 years to be included in GAWB's 2010 QCA pricing submissions.

The consideration of expenditure associated with GAWB's Contingent Supply Strategy (incorporating the Gladstone to Fitzroy Pipeline) is excluded from the scope of this review.

GAWB is a Category 1 Water Authority and registered Service Provider established under the Water Act 2000. In September 2000, the Minister declared the bulk water storage, delivery and treatment services undertaken by GAWB to be a government monopoly business and directed the Queensland Competition Authority (QCA) to undertake an investigation of GAWB's pricing practices. GAWB is still subject to regular five-yearly pricing reviews by QCA.

GAWB is currently drafting submissions for the next 5 year price review period commencing on 1 July 2010.

In order to satisfy QCA requirements this report provides advice on whether:

- The capital expenditure forecasts are consistent with existing obligations and reasonable service standards. This includes a review of forecasts with regard to trends in historical expenditure, the reasons underpinning any difference in the expected level from those trends and any other relevant factors;
- There is sufficient evidence of, and consistency with, well developed asset management planning and a high level consideration of capital budgeting processes;
- The proposed program of capital expenditure is deliverable over the relevant time period. This includes a review of forecasts with regard to the required lead time, approvals processes, and preliminary consideration of any likely resource constraints; Consideration of historical performance in capital program delivery is not part of the scope; and
- The capital expenditure forecasts associated with meeting new obligations and/or meeting higher service levels reflect likely expenditure requirements. An assessment will be made as to whether the expenditure has been forecast with regard to any benchmarking or other quantitative techniques considered appropriate.

Interviews of GAWB staff were carried out on 24 and 25 August 2009 to verify and discuss information which was provided.

Actual Expenditure 2005 to 2009

The following 5 projects totalling $11,191,000 which were commenced in the period 2005 to 2009 were reviewed.

- Northern Assets purchase from CSC
- Yarwun Water Treatment Plant – Upgrade stage 1
- Awoonga Dam High Voltage Upgrade
- Telemetry & Control System Integration
- Land Acquisition

These projects are all supported by business cases.

Forecast capital expenditure 2009/10 to 20018/19

The following table summarises the forecast capital expenditure proposed by GAWB and includes a summary of confidence ratings in the project estimates which were assigned to each project.

GAWB Project Area	Total Expenditure 2009/10 to 2018/19 ($)	Percentage of total spend	Total Number of projects	Number of Projects with estimate confidence rating for each project area		
				1	2	3
Awoonga Dam	25,218,648	22.9%	14	4	9	1
Contingent Supply Strategy	13,740,262	12.5%	Not part of scope	Not part of scope	Not part of scope	Not part of scope
Land Management	1,425,000	1.3%	1	1	0	0
Recreation and Hatchery	1,446,090	1.3%	18	3	12	3
Delivery	52,039,985	47.4%	32	9	17	6
Treatment	10,824,435	9.8%	15	2	12	1
Corporate	5,206,690	4.7%	19	2	9	8
Totals	**109,901,110**		**99**	**21**	**59**	**19**

The analysis has demonstrated that that the scoping and estimating of projects in the high value project areas of Awoonga Dam, Delivery and Treatment is generally acceptable. Proposed expenditure in other areas is generally less well defined.

There appears to be reasonable justification for proposed capital projects overall.

Renewals Expenditure and Asset Management

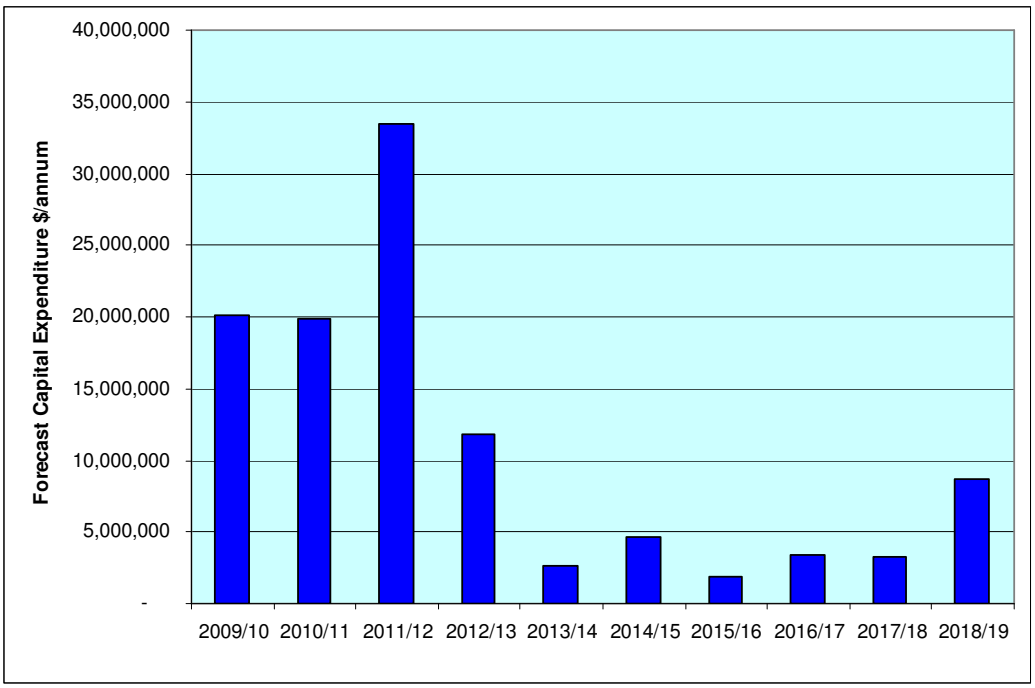
GAWB's asset management system is based upon a 2005 desktop assessment by SMEC of all assets, updated where better quality data exists (such as that derived from a detailed condition assessment report). A significant portion of renewals expenditure has been forecast using the information from the asset management system.

GAWB's annual average percentage renewals expenditure over the 10 year period, 2009/10 to 2018/19 is 0.79% of its $425 million asset base. We note that renewals expenditure over the first four years of the programme is high with generally lower renewals expenditure in the remaining six years.

Delivery of the capital program

There is a significant increase in planned capital work over the short term for GAWB. The following figure outlines this expenditure. Whilst the number of projects has not increased significantly the dollar value of projects has increased considerably to a peak expenditure of $33.5 million in 2011/12. Approximately 64% of capital expenditure over this 4 year period is associated with 4 major projects.

GAWB is resourced at a relatively lean level and will need to be cognisant of this when planning for the delivery of capital projects over the next 4 years. We consider that GAWB should develop a delivery strategy including active consideration of alternative models in addition to more traditional methods for delivery of its program.



Conclusions

The findings from this investigation are as follows:

1. GAWB has robust planning and procurement processes in place but we found that these processes were not always utilised for lower value projects;
2. The 5 projects reviewed that were commenced between 2005 and 2009 appear justified and delivered at reasonable cost;
3. Proposed capital expenditure 2009/10 to 2018/19 is considered to be appropriate. Whilst all projects are considered to be justified, there are varying qualities of scoping which impacts upon the accuracy of the forecast expenditure, especially with smaller projects;
4. GAWB appears to generally be meeting agreed service standards;
5. GAWB's incorporation of its asset data into its Corporate Information System appears relatively elemental. This issue has been identified by GAWB staff and steps are being taken to improve the system but this may impact upon the quality of its renewals forecasts;
6. Planned renewals expenditure over the next 10 years compares favourably with available benchmarking information from other water utilities but further work is required on condition and performance assessment to improve the accuracy of expenditure forecasts; and
7. Renewals expenditure over the next few years is high but there are adequate condition assessment reports by independent consultants and documented justifications for the major items of expenditure and accordingly we find the expenditure justified. Proposed renewals expenditure over the latter six years of the 10 year capital expenditure program appears reasonable but should be the subject of further detailed evaluation over the next few years.

1. INTRODUCTION

Cardno has been engaged by Gladstone Area Water Board (GAWB) to provide an independent review and report on its capital expenditure submissions to enable justifications to be made on the appropriateness of:

- 5 specific projects which were commenced in the period 2005 to 2009; and
- proposed capital expenditure for the 10 years from 2009/10 to 2018/19 with an emphasis on the first 5 years to be included in GAWB's 2010 QCA pricing submissions.

The consideration of expenditure associated with GAWB's Contingent Supply Strategy (incorporating the Gladstone to Fitzroy Pipeline) is excluded from the scope of this review.

GAWB is a Category 1 Water Authority and registered Service Provider established under the Water Act 2000. In September 2000, the Minister declared the bulk water storage, delivery and treatment services undertaken by GAWB to be a government monopoly business and directed the Queensland Competition Authority (QCA) to undertake an investigation of GAWB's pricing practices. GAWB is still subject to regular five-yearly pricing reviews by QCA.

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In order to satisfy QCA requirements this report provides advice on whether:

- The capital expenditure forecasts are consistent with existing obligations and reasonable service standards. This includes a review of forecasts with regard to trends in historical expenditure, the reasons underpinning any difference in the expected level from those trends and any other relevant factors;
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- The capital expenditure forecasts associated with meeting new obligations and/or meeting higher service levels reflect likely expenditure requirements. An assessment will be made as to whether the expenditure has been forecast with regard to any benchmarking or other quantitative techniques considered appropriate.

2. DESCRIPTION OF GAWB'S OPERATION

2.1 The Gladstone Region

Gladstone is Queensland's largest multi cargo port and is considered of major strategic importance for economic development, both at the national and state level. The Gladstone region is already well developed, with an established major industry base including power stations, two alumina refineries, an aluminium smelter, a cement plant, chemical plants and other process industries. There are also several major industrial development proposals in various stages of planning and implementation.

The availability of a reliable water supply is one of the key criteria that is considered by potential industries when assessing the suitability of a region for investment and to this end GAWB plays an important role in the future development of the region.

2.2 Gladstone Area Water Board

As stated earlier, the Gladstone Area Water Board (GAWB) is a Category 1 Water Authority operating under the Water Act 2000 and is responsible to the Minister for Natural Resources and Water.

GAWB's primary role is the supply of bulk water to major customers in the Gladstone region including the supply of treated water to Gladstone Regional Council. Approximately 20% of bulk water supplied is treated water with the remaining 80% being raw water supplied to industry.

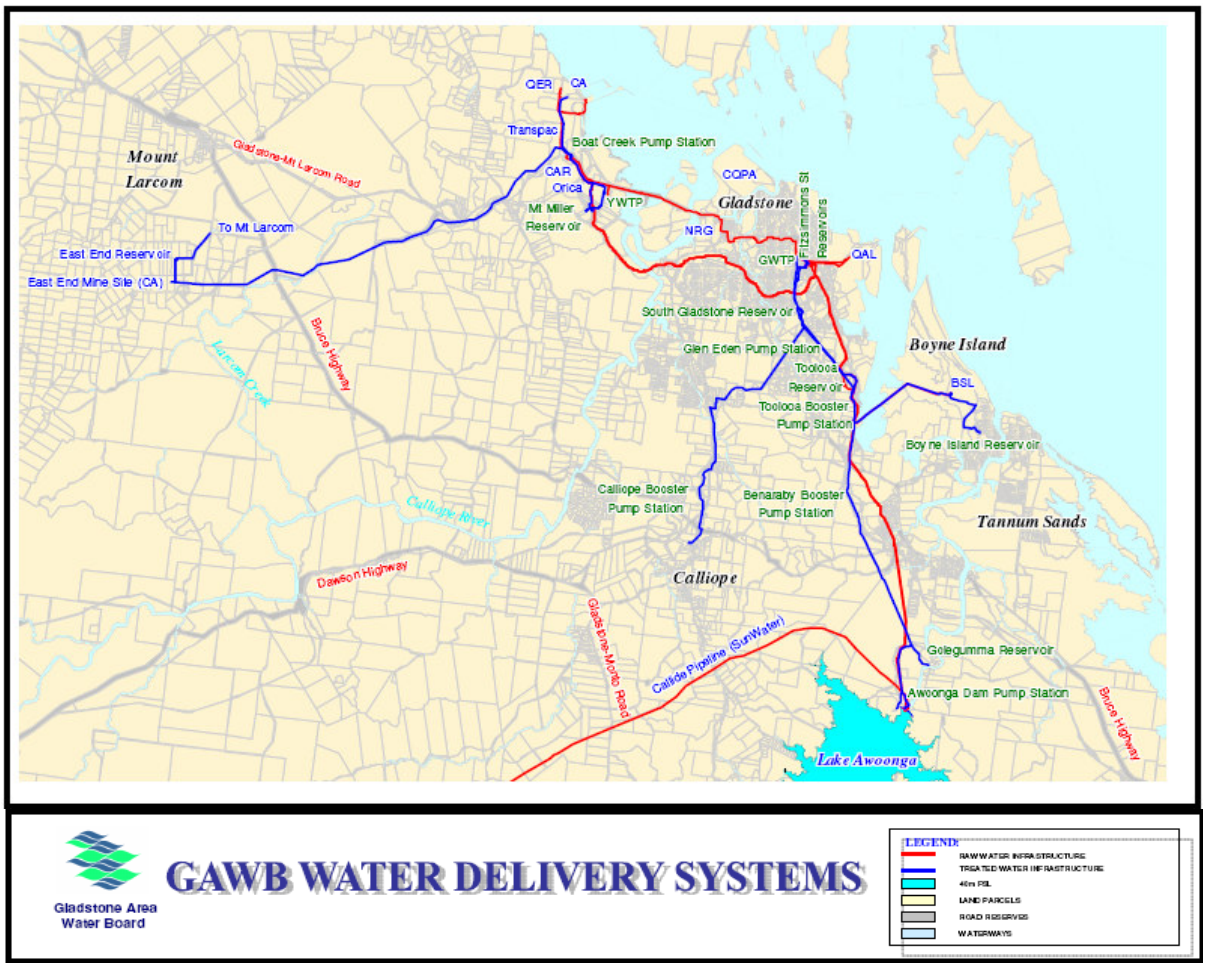
Under the Resource Operations Plan: Boyne River Basin, GAWB currently has a bulk water allocation of 70,000 ML per annum.

Current industrial and urban water consumption from Awoonga Dam is approximately 55,000 ML per annum. As part of its drought mitigation strategy and planning for long term water supply GAWB has commenced preparatory work on the Gladstone Fitzroy Pipeline project to acquire and hold an ability to access an additional 30,000 ML allocation from the Fitzroy River should this be required due to drought or increased demand.

GAWB owns and operates the following major assets:

- Awoonga Dam on the Boyne River south of Gladstone;
- delivery pipelines and ancillary infrastructure (121 km for delivery of untreated water to treatment plants and industrial customers and 90km for delivery of treated water to the Gladstone Regional Council water reticulation systems and other industrial customers);
- water treatment plants in Gladstone and Yarwun;
- untreated water pumping station at Awoonga and treated water pumping stations at Benaraby, Calliope, Glen Eden, Boat Creek, Gladstone Water Treatment Plant and Yarwun Water Treatment Plant;
- untreated water reservoirs at Gladstone (Fitzsimmons Street) and Toolooa, and treated water reservoirs at Boyne island, East End, Golegumma, South Gladstone and Yarwun;
- the Lake Awoonga Recreation Area adjacent to Awoonga Dam and large areas of land under and around Lake Awoonga;
- a main administration building in Gladstone City; and
- a fish hatchery in Gladstone City.

Figure 1 GAWB Water Delivery Systems



2.3 Untreated Water System

The raw water system includes the Awoonga Dam and pump station, intermediate trunk mains and reservoirs plus the Gladstone-Yarwun-Fishermans Landing pipelines. GAWB sources all of its water from Lake Awoonga, which was formed by the construction of the Awoonga Dam. This dam was raised to EL40.0m AHD with an estimated yield of 78,000 ML/annum from a capacity of 777,000 ML at FSL.

Water from Awoonga Dam is pumped to an intermediate 50ML storage reservoir at Toolooa. From here water gravitates to the 50ML and 16ML reservoirs at Fitzsimmons Street in Gladstone, and directly to the Boyne Smelter and Queensland Alumina Limited.

Water from the 50ML Fitzsimmons Street reservoir gravitates to both the Gladstone WTP and to industries in the Yarwun-Fishermans Landing precinct. The commissioning of the Mt Miller pipeline has enabled water from the 50 ML Toolooa Reservoir to also supply the Yarwun-Fisherman's Landing area. The Yarwun WTP can draw supply from either of these sources.

2.4 Treated Water System

Raw water for the Gladstone WTP is drawn from the 50ML reservoir in Fitzsimmons Street, whilst raw water supply to the Yarwun WTP is drawn directly from one of the mains running from the 50ML reservoir to the industries in the Yarwun-Fishermans Landing area.

Water from the Gladstone WTP is pumped directly to Gladstone Regional Council reservoirs at Round Hill, Ferris Hill and Radar Hill, as well as to GAWB's South Gladstone reservoir. From the South Gladstone reservoir water is distributed to Calliope, Boyne Island/Tannum Sands, Wurdong, Beecher, Benaraby and to areas of South Gladstone.

The Yarwun Water Treatment Plant was constructed as a consequence of the industrial development that occurred in the Yarwun region in the late 1980s.

A 300mm-diameter main extends from the Boat Creek Pump Station to the East End Reservoir (5ML), from which supplies are provided to the Cement Australia mine and the nearby township of Mt. Larcom. This pipeline supplied raw water up until March 2002. This supply is drawn from the Yarwun WTP.

2.5 Water Treatment Plants

GAWB owns and operates two water treatment plants. The larger of the two is located in McCann Street, Gladstone immediately below the raw water storage reservoirs. The original treatment plant at this site was constructed in 1972 and has seen various augmentations to give a total current capacity of 55 ML/day under all raw water conditions.

The Gladstone WTP services the treated water requirements of Gladstone Regional Council with the exception of the Yarwun Industrial Area.

Yarwun WTP draws water directly off the raw water main running from the 50ML Reservoir along Hanson Road. Yarwun WTP was installed in 1989 at the Yarwun Industrial Estate. This treatment plant services Orica's chlorine and ammonium nitrate production facility, Comalco's alumina refinery, Cement Australia's clinker plant as well as a number of minor customers. Treated water is also available to Mt Larcom township and Cement Australia's East End mine site. A recent refurbishment has increased the plant capacity to at least 5 ML/day.

3. METHODOLOGY

3.1 Background

Cardno has extensive experience in undertaking expenditure reviews, performance benchmarking, and asset management planning gained as a result of working on projects for both regulators and water utilities in Australia and overseas.

The methodology adopted for this review has been developed over time and has proved effective in undertaking similar reviews.

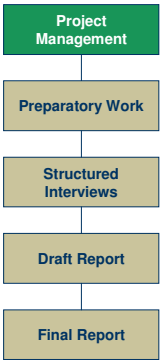
We work closely with utility staff to ensure a cooperative and transparent process. We aim to build up good professional relationships with all stakeholders while still retaining our independence.

The process is open, transparent and audit interviews are undertaken in a cooperative and friendly environment. Every opportunity is provided to the utility to provide all relevant information thereby ensuring that the facts on which we draw our judgements are confirmed and all relevant data and assumptions have been identified.

3.2 General Approach

The methodology adopted for carrying out the project is illustrated in Table 1.

Table 1 Methodology used for the project



Phase	Actions
Project Management	• A Start-up meeting was held on Tue 21 July 2009 in GAWB's Brisbane office attended by Jim Grayson, Penny Fiddes and John Graham where final methodology was agreed including the exclusion of the Fitzroy Pipeline from this analysis; • The proposed capital program and relevant supporting data and reports was provided by GAWB
Preparatory Work	• Interviews were arranged; • Information provided by GAWB was reviewed and further information requirements identified; • A preliminary analysis was undertaken of: ○ CAPEX projections 2009 -2019; and ○ historical CAPEX incurred since 2005 which was not included in the capital expenditure approved by the QCA in the 2005 pricing submission.
Structured Interviews	• John Graham and Chris Hegarty conducted audit interviews at GAWB's Gladstone office on Monday 24th and Tuesday 25th August 2009 which involved de-brief on findings with key staff on 25th August 2009 as well as a follow up meeting with GAWB CEO in Brisbane on 1st September
Draft Report	• Further data analysis was undertaken; • Draft report was forwarded to GAWB for review for factual accuracy.
Final Report	Final analysis and review of additional information was undertaken based on feedback from GAWB.

The interviews were carried out by Cardno officers John Graham, National Water Executive and Chris Hegarty, Senior Water Engineer. GAWB Senior Strategic Executive Penny Fiddes was present during all interviews and was the contact officer for the project. The table below outlines all persons interviewed. Whilst not included in the formal interview

process, GAWB Chief Executive officer Jim Grayson was involved in start up and follow up meetings where project outcomes and findings were discussed.

Table 2 Persons Interviewed 24th and 25th August 2009

Person	Position	Notes
Penny Fiddes	Senior Strategic Executive	Present during all interviews.
James Stewart	Operations Business Unit Manager	Discussion on CAPEX budgeting and expenditure procedures, detailed discussion on most engineering projects.
Richard West	Engineering Specialist	Detailed discussion on engineering projects with focus on major projects including Saddle Dam No 3 and the Offline Storage and Re-Pump Station.
Kevin Frost	Financial Controller	Clarification of definition of capital expenditure, depreciation calculations and use of asset data.
Dean Tappin	Operations and Maintenance Service Manager	Discussed discretionary expenditure for treatment plants / pump stations and general electrical/mechanical spend.
Anthony Ottaway	Pricing Officer	Brief explanation of actual expenditure records setout and notation.
John Stewardson	Recreation Manager	Discussed recreation expenditure including upgrades to GAWB owned dwellings.
Bernadette Le Grand	Commercial Business Unit Manager	Discussed hatchery relocation and corporate expenditure on business systems.
Robyn Bray	Business Systems Compliance	Explanation of GAWB procedures and systems relating to budgeting and capital program delivery.
Geoff Howse	Senior Water Engineer	Discussions regarding project delivery. Responsible for Boat Ck Pump Station.
Rosemary Fredriksen	Projects Administrator	Discussions regarding project delivery and asset management.

3.3 Assessment of Capital Expenditure Forecasts

The project investigation included a backward look at 5 specific projects commenced in the period 2005 to 2009. The approach involved taking a view of capital efficiency based on need, and a review of capital planning processes comprising:

- Asset management;
- The robustness of appraisal and cost estimates;
- The approach to procurement; and
- The effectiveness of project management.

A view of capital efficiency can be derived from quantitative and qualitative reviews of available data. The key factors impinging on efficiency are the unit costs of implementation, the planning, design and procurement processes and the selection of appropriate solutions. Trends in selected unit costs were examined. An assessment of the procurement process was made to compare with best practice. Combining these factors enabled a view to be derived on the potential for further improvement against best practice and how this could be achieved over time.

3.4 Assessment of Asset Management Planning

GAWB owns water assets with a current replacement cost of approximately $425 million. Asset renewals and replacement represent a major proportion of GAWB's ongoing annual capital expenditure program.

Asset management planning and processes were therefore considered and how they have been used to forecast expenditure. Review of asset management planning required a combination of qualitative and quantitative assessments.

For the qualitative assessments, investigations were carried out to determine whether appropriate methods, processes and systems are in place to manage assets through the whole process. We look to see if the asset management practices and processes implemented within GAWB address the whole asset cycle from asset planning, creating, operating, managing, replacement and disposal.

The quantitative assessment followed a trail from the long term investment requirements through the asset management planning processes to underlying assumptions, methodologies and performance data. It was important to determine a view as to whether the process is robust and assumptions are well founded and prudent.

4. SERVICE STANDARDS

GAWB's policy in respect to service standards (contained within the SAMP Service Standards Plan – GAWB04) is to:

- *Understand, facilitate and satisfy the water requirements of current and future customers;*
- *Ensure that the services are delivered at a commercially acceptable price which ensures GAWB's profitability;*
- *The service standards are reflective of current actual standards and are sustainable; and*
- *Review the level of service taking into account changes to relevant standards and guidelines.*

The following extract is derived from SAMP Service Standards Plan – GAWB04

The service standards adopted by GAWB reflect the fact that GAWB is a bulk water supplier to industry and the public. The service standards acknowledge the importance and impact on industry of maintaining a consistent and predictable flow of water.
GAWB's assets are predominantly of a large scale and constructed from materials which are highly robust reducing the likelihood of asset failure. To ensure that the supply and delivery system can provide the service standard required, the following have been set in place:

- *Regular inspection of assets, the timing of which is based on asset condition and risk to supply capability;*
- *An asset management system is being developed to enhance the inspection and maintenance process;*
- *Monitoring of water quality at key points in the treatment process and distribution system;*
- *Continuous monitoring of system demand and pressures at key delivery points;*
- *Annual updating of projected demands;*
- *Participation in planning processes which highlight future regional development and demands;*
- *Maintaining treated water quality within current guidelines;*

As a bulk water service provider, almost all of GAWB's customers are supplied pursuant to individual contracts. Consequently, there is no legislative requirement for Customer Service Standards to apply. It is intended that the provisions of supply contracts may eventually override the Customer Service Standards. Service standards were last reviewed in January 2007.

GAWB's performance against service standards is considered to be good with few reported complaints and non-conformances (refer the 2006/07 and 2007/08 GAWB SAMP Annual Reports).

5. DEFINITION OF CAPITAL EXPENDITURE

GAWB's definition of a capital asset is effectively a *'past event for future economic benefit'* with the following recognition thresholds which apply:

1. $5,000 minimum asset values
2. $1,000-$5,000 – recorded for taxation purposes
3. $100-$1,000 – considered to be an expense item but also recorded for taxation purposes.

We have advised GAWB on the need for a single policy to guide capital expenditure budgeting which includes clear definitions and examples. We have been advised that GAWB is in the process of finalising such a policy, which is to be adopted by its Board and will be consistent with Accounting Standards.

6. ASSESSMENT OF CAPITAL EXPENDITURE 2005-2009

The scope of works required Cardno to assess the appropriateness of capital expenditure on the following 5 projects totalling $11,191,000. These projects were commenced after 2005:

Table 3 Capital expenditure on 5 projects carried out since 2005

Project name	Authorised Expenditure	Actual Expenditure ($ '000)					Forecast Expenditure to Complete	Total Expenditure
	$ '000	05/06	06/07	07/08	08/09	09/10	$ '000	$ '000
Northern Assets purchase from CSC	1,854 [1]	1,928					Nil	1,928
Yarwun Water Treatment Plant – Upgrade stage 1	2,423 [2]		23	1,757	806		Nil	2,587
Awoonga Dam High Voltage Upgrade	1,617 [3]			162	696	434	325 (Nov 2009)	1,617
Telemetry & Control System Integration	2,775 [4]			392	2,310	12	90 (Feb 2010)	2,715
Land Acquisition	Various projects	393	82	125	543		1,200	2,344
Total								**11,191**

[1] Resolution reference 05-16-08

[2] $250k Resolution reference 07-13-06 2, $173k Resolution reference 08-13-09

[3] Resolution reference 09-17-09

[4] $2,675k Resolution reference 09-08-03, $100k Resolution reference 10-05-09

These projects are all supported by business cases. All projects appear to be justified and to have been carried out at reasonable cost.

7. ASSESSMENT OF CAPITAL PROGRAM 2009 TO 2019

The "base case" capital program examined in detail in this report appears in Appendix A. This capital program has been provided by GAWB and excludes most expenditure associated with growth in water demand. The establishment of new industry or growth in existing industry would trigger additional capital expenditure over this base case scenario.

7.1 Major Capital Items

The following capital projects with a project value in excess of $3 Million were examined in particular detail.

Table 4 Major Capital Project Summary

Project	Estimated Capital Cost ($M)	Financial years to be delivered
Saddle Dam No 3	22.00	2010/11 to 2012/13
Offline Storage Dam and Re-Pump Station	19.10	2009/10 to 2011/12
Boyne Island Raw and Potable DICL Pipeline Sections Replacement	3.4	2016/17 to 2018/19
Golegumma Treated Water Pipeline	5.4	2010/11 to 2014/15
Total	**55.30**	

7.1.1 Saddle Dam No 3

The objective of the project will be to maintain system integrity and ensure compliance with licence conditions. During 2008-09, GAWB completed an investigation into acceptable flood capacity for Awoonga Dam and observed that Saddle Dam no 3 was only marginally compliant. At the request of the Dam Safety Regulator, GAWB undertook an acceptable flood capacity assessment (refer Appendix B document 8).

GHD report dated 3 September 2009 (Refer Appendix B document 57) provides additional information on Saddle Dam no. 3 options. Option 4 (new embankment dam to RL 55) provides the most environmentally sound and lowest risk method of upgrading Saddle Dam.

The project is considered to be justified and the estimate is considered to be within acceptable bounds at this time, based upon the planning work that has been completed as at the date of this document.

7.1.2 Off-Line Storage Dam and Re-Pump Station

The need for an offline storage and re-pump station was supported in the R_2A February 2009 Critical Assets Due Diligence Review report (Refer Appendix B document 3) as a solution that would address external threats at the Awoonga Pump Station.

The current network arrangements require raw water to be pumped from Awoonga Dam to Toolooa Reservoir nightly. The water is then distributed throughout the network the following day. Given this arrangement there is limited time available for preventive or corrective maintenance to the system without causing significant interruption to supply.

The provision of an 2 week + off-line storage facility near existing Toolooa reservoir and associated pumping station is proposed to address the threat of credible risks that may result in supply interruptions or failures of up to 14 days.

The loss of pumping capability from Awoonga Pumps Station is identified in GAWB's Operations Risk Register as a severe inherent risk.

It is noted that the estimate carried out by Aurecon (Refer Appendix B document 60) applies a 30% contingency.

The project is considered to be justified and the estimate is considered to be within acceptable bounds at this time, based upon the planning work that has been completed, as at the date of this document. Further changes in estimated cost are possible as detailed scoping and design is carried out.

7.1.3 Boyne Island Raw and Potable DICL Pipeline Sections Replacement (Red Mud Dam)

This project involves the relocation of 3.7km of both the raw and treated water pipelines that run from the Toolooa chlorinator plant to Boyne Island. Ductile iron sections of both pipelines are nearing the end of their useful lives. This has been confirmed by investigations carried out by Alf Grigg and Associates. The existing pipelines are in the vicinity of a red mud dam owned and operated by QAL who are proposing an expansion of the red mud dam system around 2012.

The total project has been estimated at $8.85 million but only $3.4 million is included in budget. It is expected that QAL will pay for the balance of the expenditure associated with the realignment around the red mud dam expansion. It is noted that GHD has applied a 30% contingency to the project estimate.

The project is considered to be justified and the estimated cost is within expected bounds.

7.1.4 Golegumma Treated Water Pipeline

GAWB is proposing to replace severely corroded sections totalling approximately 14km of the 20km Golegumma pipeline. The objective of the project is to maintain system integrity. A number of breaks have occurred on the pipeline and a remaining economic life for this asset of <5 years was identified in the Alf Grigg and Associates report (Refer Appendix B document 14). The estimated capital cost was increased by $1 million to include a section of the pipeline between Skyring Hill Road and Benaraby Booster Pump Station.

The project is considered to be justified as it has the potential to impact on GAWB's service standards if the work is not completed. The estimated cost is within expected bounds.

7.2 Overall Assessment

A summary of the individual projects including the documentation available to justify the project, the associated cost estimate and some brief comments on each project are provided in Appendix C. The following table outlines confidence levels used to assess the estimated cost.

Table 5 Project estimate confidence level

Rating	Description	Typical Expected Accuracy
1	Good planning background and confidence in the estimated cost.	+/- 15%
2	Estimated cost is considered to be reasonable for the level of planning carried out.	+/- 30%
3	Further work is needed to scope the project	unspecified

There appears to be reasonable justification for proposed capital projects overall. For most projects there is supporting documentation to justify the project. However, in some instances, concerning lower value projects, we have been unable to identify documentation to indicate that the projects have been scoped in sufficient detail to allow them to be estimated with confidence by the date that this report was finalised.

The outcome of the detailed examination of each project is summarised as follows.

Table 6 Summary of individual project examination

GAWB Project Area	Total Expenditure 2009/10 to 2018/19 ($)	Percentage of total spend	Total Number of projects	Number of Projects with estimate confidence rating for each project area		
				1	2	3
Awoonga Dam	25,218,648	22.9%	14	4	9	1
Contingent Supply Strategy	13,740,262	12.5%	Not part of scope	Not part of scope	Not part of scope	Not part of scope
Land Management	1,425,000	1.3%	1	1	0	0
Recreation and Hatchery	1,446,090	1.3%	18	3	12	3
Delivery	52,039,985	47.4%	32	9	17	6
Treatment	10,824,435	9.8%	15	2	12	1
Corporate	5,206,690	4.7%	19	2	9	8
Totals	**109,901,110**		**99**	**21**	**59**	**19**

The analysis has demonstrated that that the scoping and estimating of projects in the high value project areas of Awoonga Dam, Delivery and Treatment is generally acceptable. Proposed expenditure in other areas is generally less well defined.

The combined value of projects with the same confidence rating was also examined and is presented in the following table. Less than 9% of proposed expenditure is associated with projects with a confidence rating of 3 assigned to the project estimate. The high value associated with projects with a confidence rating of 2 is considered reasonable for medium to long term expenditure forecasts.

Table 7 Capital Expenditure Level versus Project Estimate Confidence

	Confidence rating for project estimates			Totals
	1	2	3	
Combined total expenditure for each confidence rating * ($)	8,585,958	79,084,890	8,490,000	**96,160,848**
Percentage of total spend for each confidence rating *	8.93%	82.24%	8.83%	**100.0%**
* Excludes expenditure associated with the Contingent Supply Strategy				

8. ASSET MANAGEMENT

GAWB's asset management system is based upon a 2005 desktop assessment by SMEC (Appendix B document 69) of all assets, updated where better quality data exists (such as that derived from a detailed condition assessment report).

As at the date of this report, GAWB's incorporation of this data into its Corporate Information System appeared relatively elemental. This issue has been identified by GAWB staff and steps are being taken to improve its use and functionality.

A significant portion of renewals expenditure has been forecast using the information from the asset management system.

GAWB have commissioned a Life Cycle Analysis report from GHD (refer Appendix B document 46). This report provides a comprehensive prediction of CAPEX and OPEX expenditure with assets identified to an appropriate sub-level. This information needs to be input into GAWB's asset management software and it is understood that GAWB intend to give some priority to this work.

9. RENEWALS EXPENDITURE

GAWB owns and operates water assets with a current replacement cost of almost $425 million (refer Table 7 below) with asset lives ranging from a few years in the case of plant and equipment to 100 years for Awoonga Dam. The vast majority of GAWB's assets (eg dam, pipelines, treatment plants, tanks and land) have asset lives in excess of 40 years.

Table 8 GAWB Asset Value Summary

Description	Acquisition Cost (30-6-09) ($)
Infrastructure Assets	396,682
Buildings and Improvements	12,237
Minor Plant and Equipment	1,619
Motor Vehicles	63
Assets under construction	5,426
Sub Total	**416,027**
Land	8,759
TOTAL	**424,786**

For GAWB's "base case" 10 Year Capital Works Program, expenditure on asset renewals represents just under a third of the total program in the next 10 years or $33.77 million.

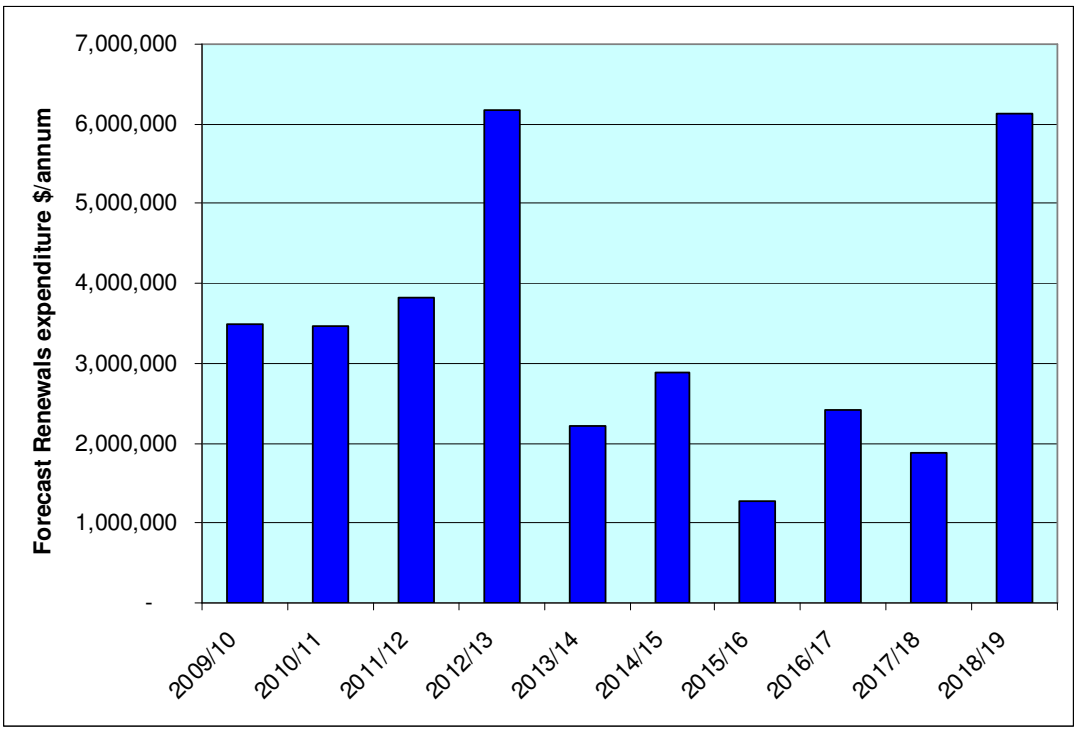
There is little if any current benchmarking information on the level of renewals expenditure for water authorities within Australia. We have therefore benchmarked against data from the late 1990's. The Australian Non Major Urban Water Utilities Performance Monitoring Report 2000-2001 included comparisons of renewals expenditure as a percentage of total asset replacement cost for a number of Australian Non-Major Urban water utilities over a four-year period from 1997/98 to 2000/01. The average renewals expenditure across some 30 water utilities averaged 0.5% to 0.6% per annum over the reporting period. This compares with GAWB's average percentage renewals expenditure over the 10 year period, 2009/10 to 2018/19 of 0.79%.

We note that renewals expenditure over the first four years of the programme is high with generally lower renewals expenditure in the remaining six years. Refer to Figure 3 below. We questioned GAWB as to the reasons for this expenditure profile and were advised that it reflected a lack of renewals expenditure in the past which has resulted in a number of major assets being identified as having reached or nearing the end of their useful life and therefore requiring replacement.

Although the renewals expenditure over the next few years is high there are adequate condition assessment reports by independent consultants and documented justifications for the major items of expenditure and accordingly we find the expenditure justified. There is insufficient documentation available at the time of audit to accurately assess if the proposed renewals expenditure over the latter six years of a 10 year capital expenditure program is adequate. Much of this forecast expenditure has been derived from replacement costs and asset lives in the asset management system from the 2005 SMEC asset valuation and is not based on specific asset condition assessment and performance data. However given the nature of the assets involved, the current remaining asset lives and the overall level of renewals expenditure forecast over the 10 year period we consider the quantum appears reasonable when compared with like organisations.

Future renewals expenditure should be reviewed in light of improved asset condition and performance data.

Figure 2 GAWB Forecast renewals expenditure 2009/10 to 2018/19



10. GAWB'S ABILITY TO DELIVER THE CAPITAL PROGRAM

10.1 Planning Processes

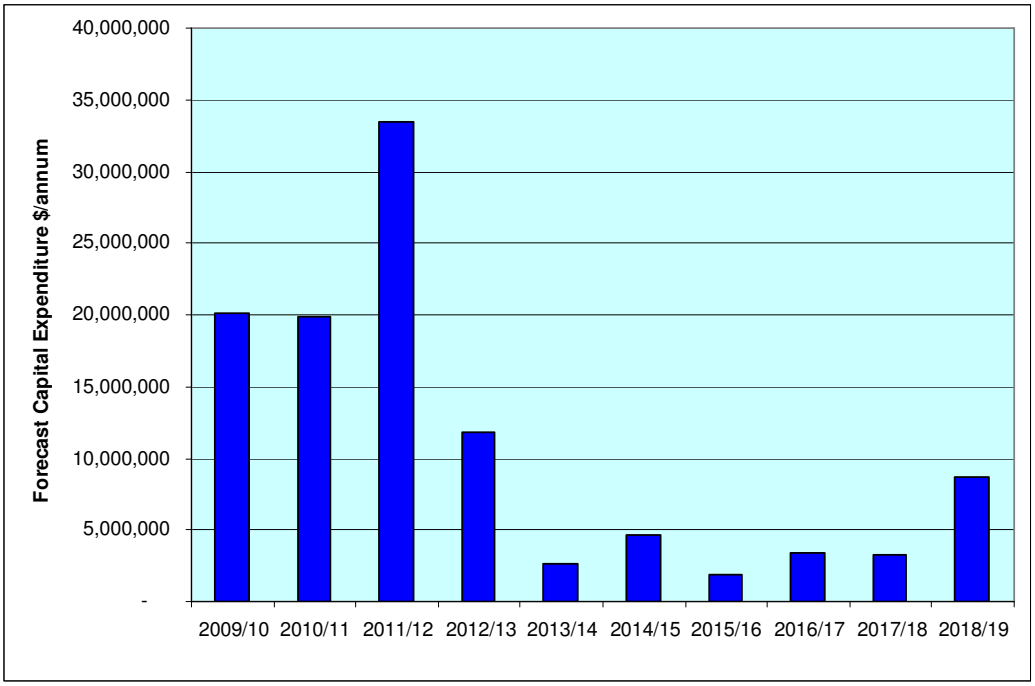
We have reviewed GAWB's capital expenditure planning processes. Planning and concept design including the preparation of preliminary and detailed estimates is generally undertaken by external consultants who develop reports and designs identified and scoped by GAWB.

The GAWB corporate management system includes documented guidelines for the development of business cases for expenditure projects. While the process is well documented our review found that the guidelines were not always utilised for lower value projects before their inclusion on the capital program.

10.2 Delivery of the capital program

The following figures shows the next 10 years planned capital expenditure and highlights the significant hump of expenditure over the next few years.

Figure 3 Capital Budget Expenditure 2009-10 to 2018/19 (Excludes Fitzroy Pipeline Expenditure)



The following table outlines some detailed information regarding the number of projects and expenditure planned for the current and following 3 financial years.

Table 9 Capital Budget 2009-10 to 2012-13

	Capital Works Budget ($)	Value of Major Projects ($) *	Capital Works Budget exc Major Projects ($)	Percentage of budget in Major Projects
2009/10	20,181,249	10,862,762	9,318,487	53.8%
2010/11	19,850,195	11,850,000	8,000,195	59.7%
2011/12	33,518,691	26,160,000	7,358,691	78.0%
2012/13	11,853,968	5,560,000	6,293,968	46.9%

* Saddle Dam No 3, Offline Storage Dam/Re-Pump Station, Golegumma pipeline and Contingent Supply Strategy. The Boyne Island Raw and Potable DICL Pipeline sections replacement does not occur during this period.

There is a significant increase in planned capital work over the short term for GAWB. Whilst the number of projects has not increased significantly the dollar value of projects has increased considerably to a peak expenditure of $33.5 million in 2011/12. This excludes expenditure associated with the Gladstone to Fitzroy Pipeline. Approximately 64% of capital expenditure over this 4 year period is associated with 4 major projects. The planning, superintending and managing of large projects can be outsourced to ease the day to day demands on GAWB staff.

GAWB is resourced at a relatively lean level and will need to be cognisant of this when planning for the delivery of capital projects over the next 4 years. We consider that GAWB should develop a delivery strategy including active consideration of alternative models in addition to more traditional methods for delivery of its program.

11. CONCLUSIONS

Recent work commissioned by GAWB has thrown up a number of challenges to address in the short term. The recent work includes a detailed risk review and report titled *Critical Assets Due Diligence Review, R_2a Risk and Reliability and Associates, February 2009,* additional regulatory requirements emanating from an annual dam inspection and asset condition assessments. The result of this is a sharply increased capital works program 2009/10 to 2012/13.

The findings from this investigation are as follows:

1. GAWB has robust planning and procurement processes in place but we found that these processes were not always utilised for lower value projects;
2. The 5 projects reviewed that were commenced between 2005 and 2009 appear justified and delivered at reasonable cost;
3. Proposed capital expenditure 2009/10 to 2018/19 is considered to be appropriate. Whilst all projects are considered to be justified, there are varying quality of scoping which impacts upon the accuracy of the forecast expenditure, especially with smaller projects;
4. GAWB appears to generally be meeting agreed service standards;
5. GAWB's incorporation of its asset data into its Corporate Information System appears relatively elemental. This issue has been identified by GAWB staff and steps are being taken to improve the system but this may impact upon the quality of its renewals forecasts;
6. Planned renewals expenditure over the next 10 years compares favourably with available benchmarking information from other water utilities but further work is required on condition and performance assessment to improve the accuracy of expenditure forecasts; and
7. Renewals expenditure over the next few years is high but there are adequate condition assessment reports by independent consultants and documented justifications for the major items of expenditure and accordingly we find the expenditure justified. Proposed renewals expenditure over the latter six years of the 10 year capital expenditure program appears reasonable but should be the subject of further detailed evaluation over the next few years.

APPENDIX A

GAWB Base Case 2009-2019 Capital Program Summary

	Proposed 2009/10 Capital Plan				Forward Projections 2009 - 2014									
Project Area	Activity Area	Project Name	Causation	Total for 2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Storage	Dam	Awoonga Dam - Intake Tower Cranes Upgrade	2	453,919										453,919
Storage	Dam	Awoonga Dam - instyall guard rails at intake tower	3	11,000										11,000
Storage	Dam	Awoonga Dam - Replacement of coarse screens in intake tower	2	-	60,000									60,000
Storage	Dam	Awoonga Dam - Remote Operation of River Discharge Valves	3	-	320,000									320,000
Storage	Dam	Awoonga Dam - Saddle Dam No 3	3	-	1,500,000	15,000,000	4,500,000							21,000,000
Storage	Dam	Awoonga Dam - Raising Left Abutment	3	-			1,000,000			-	-			1,000,000
Storage	Dam	Awoonga Dam - Pump Station road resurfacing	2	-			24,500							24,500
Storage	Dam	Awoonga Dam - Hard stand replacement	2	-	80,000									80,000
Storage	Dam	Awoonga Dam - Wall Access road construction 500m section	3	-	40,000									40,000
Storage	Dam	Dam Level Indicator - Intake Tower	3	25,000	-	-	-							25,000
Storage	Dam	Catchment Gorindwater Monitoring installation of bores	3	98,020										98,020
		Awoonga Dam - STP monitoring bores	3	30,500										30,500
Storage	Dam	Gauging Station Upgrade - Milton & Marlua	3	115,000										115,000
Storage		Equipment replacements as per schedule from price model	2		39,121		246,532	175,717	121,626	40,969	570,136	395,390	371,218	1,960,709
DAM				733,439	2,039,121	15,000,000	5,771,032	175,717	121,626	40,969	570,136	395,390	371,218	25,218,648
Cont. Supply	CSS	Lower Fitzroy Weirs - Planning Stage	4	6,072,790	30,000				290,000			40,000		6,432,790
Cont. Supply	CSS	Desalination	4		790,000	30,000			135,000					955,000
Cont. Supply	CSS	Transition and management stage for Gladstone Fitzroy Pipeline Project	4	4,289,972	530,000	130,000	60,000	95,000	782,500	60,000	60,000	285,000	60,000	6,352,472
CONTINGENT SUPPLY STRATEGY				10,362,762	1,350,000	160,000	60,000	95,000	1,207,500	60,000	60,000	325,000	60,000	13,740,262
Storage	Land	Land rationalisation includes survey expenses, purchases see project plan CS2008-004 and board presentation of 31 January 2008	3	1,025,000	200,000	200,000								1,425,000
LAND MANAGEMENT				1,025,000	200,000	200,000	-	-	-	-	-	-	-	1,425,000
Storage	Rec Area	Awoonga Boat Ramp Additional Carparking	3	-	50,000									50,000
Storage	Rec Area	Replacement of RTV	2	-			25,000							25,000
Storage	Rec Area	Waterfall Pump Upgrade (including holding tanks)	2	20,000										20,000
Storage	Rec Area	Walkway Pontoon	3	-	40,000		40,000		40,000					120,000
Storage	Rec Area	Replacement Mowers x 2	2	35,090										35,090
Storage	Rec Area	Boat Motor replacement	2	-		20,000								20,000
Storage	Rec Area	Road Resurfacing	2	-	80,000	87,000	87,000							254,000
Storage	Rec Area	Bobcat	5	-	60,000									60,000
Storage	Rec Area	House - Kitchens & bathrooms replacement	2	-	40,000	20,000	20,000	20,000	30,000	30,000	30,000	30,000	30,000	250,000
Storage	Rec Area	Recreation Area - Additional Shelter	3	-			50,000							50,000
Storage	Rec Area	Rec Area - Playground Shadecloth Replacement	2	-	20,000			20,000						40,000
Storage	Rec Area	Boynedale Lookout Additional Shelter	3	-	70,000	15,000								85,000
Storage	Rec Area	Boynedale Bush Camp Additional Toilet	3	35,000										35,000
Storage	Rec Area	Boynedale Bush Camp - replace shelter	2	-		40,000								40,000
Storage	Rec Area	Kalinda Information Centre	5	52,000										52,000
Storage	Hatchery	Hatchery Tank Heating System Upgrade	5	-	30,000									30,000
Storage	Hatchery	Hatchery Mains Board Upgrade	2	-	80,000									80,000
Storage	Hatchery	Hatchery Relocation	2	-	200,000									200,000
RECREATION & HACTHERY				142,090	670,000	182,000	222,000	40,000	70,000	30,000	30,000	30,000	30,000	1,446,090
	STORAGE SUBTOTAL			**12,263,291**	**4,259,121**	**15,542,000**	**6,053,032**	**310,717**	**1,399,126**	**130,969**	**660,136**	**750,390**	**461,218**	**41,830,000**
Delivery	Dam	Awoonga Dam - Power Supply - High Voltage Upgrade	2	801,089										801,089
Delivery	Dam	Awoonga Dam - Pump Station Building Refurbishment - Design	2	-		200,000	2,000,000							2,200,000
Delivery	Dam	Awoonga Dam Buildings and Facilities	3	-	50,000	50,000								100,000
Delivery	Dam	Awoonga Dam - Chlorine Building Structure Upgrade	3	-	100,000									100,000
Delivery	Dam	Awoonga Dam - VFD and Control Building Structure Upgrade	3	-	500,000	500,000								1,000,000
Delivery	Dam	Awoonga Dam - Pumps 1 & 2 - Replacement of Non-Return Valves	2	50,000	100,000									150,000
Delivery	General	Control Systems Integration - Telemety & flowmeters	2	100,000										100,000
Delivery	General	Flow Meters Replacement Program	2	100,000					133,471					233,471
Delivery	General	Flowmeter Upgrades - Stage 2	3	450,000										450,000
Delivery	General	Fitzsimmons Street Flow Meters & MM Cross Connection	3	993,000										993,000
Delivery	General	Toolooa Reservoir - Seal Replacement	2	-	250,000	250,000	-							500,000
Delivery	General	Toolooa Chlorinator and Pump Station Road Access	3	-	50,000	400,000								450,000
Delivery	General	Fitzsimmons Street Reservoirs - Post-tensioning Refurbishment	1	1,001,151										1,001,151
Delivery	General	Mt Miller Reservoir - Post tensioning refurbishment	1		450,000									450,000
Delivery	General	South Gladstone Reservoir - Roof Replacement	3	925,000										925,000
Delivery	General	Roof Replacement - Fitzsimmons Street 50ML Reservoir	3	-	100,000	1,000,000								1,100,000
Delivery	IT	Boat Creek Raw Water Network - Reinstatement	1	750,000										750,000
Delivery	Pipeline	Awoonga to Gladstone Pipeline - 700mm Replacement for Lining Failure	2	200,000	500,000									700,000
Delivery	Pipeline	Distribution Network Pipeline Replacements/Upgrades	2	-					500,000	500,000	500,000			1,500,000
Delivery	Pipeline	Installation Scour Valves - Toolooa to Fitzsimmons RW Pipeline (RW2 1080)	2	100,000	125,000									225,000

	Proposed 2009/10 Capital Plan				Forward Projections 2009 - 2014									
Project Area	Activity Area	Project Name	Causation	Total for 2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Delivery	Pipeline	Scour Protection - Mt Miller RW Pipeline	3	30,000										30,000
Delivery	Pipeline	Purchase land Mt Miller pipeline	1	175,000										175,000
Delivery	Pipeline	Pipeline Replacement - Golegumma TW Pipeline	2	-	400,000	1,000,000	1,000,000	1,000,000	1,000,000			500,000	500,000	5,400,000
Delivery	Pipeline	Pipeline Replacement - QAL Pipeline	2	-	200,000	700,000	800,000							1,700,000
Delivery	Pipeline	Pipeline Replacement - East End TW Pipeline	2	-	200,000	500,000	500,000	500,000						1,700,000
Delivery	Pipeline	Online Turbidity analysers	3		56,500									56,500
Delivery	Pipeline	Online Flouride analysers	3		33,500									33,500
Delivery	General	Mt Miller Reservoir - Inlet modification	3		100,000									100,000
Delivery	Strategy	Boyne Island Raw & Potable DICL Pipeline Sections Replacement	2	-							400,000	1,000,000	2,000,000	3,400,000
Delivery	Strategy	Boyne Island Reservoir - Chlorination Unit	3	-		120,000								120,000
Delivery	Strategy	Off-Line Storage Dam and Re-Pump Station	1	500,000	8,600,000	10,000,000								19,100,000
Delivery	General	Equipment replacements as per schedule from price model	2		93,705	47,896	655,416	232,292	541,203	359,757	195,163	614,927	3,755,915	6,496,274
	DELIVERY SUBTOTAL			**6,175,240**	**11,908,705**	**14,767,896**	**4,955,416**	**1,732,292**	**2,174,674**	**859,757**	**1,095,163**	**2,114,927**	**6,255,915**	**52,039,985**
Treatment	WTP - Gladstone	GWTP Replace the Carbon Batching and Dosing Plant	3	500,000	1,340,000									1,840,000
Treatment	WTP - Gladstone	GWTP Replace the Polyelectrolyte Batching & Dosing Plant	3	200,000	245,000									445,000
Treatment	WTP - Gladstone	GWTP Emergency Power Supply	1	-	500,000	1,500,000								2,000,000
Treatment	WTP - Gladstone	GWTP Roof Replacement - Clear Water Storage Plant 1	2	-							250,000			250,000
Treatment	WTP - Gladstone	GWTP Roof Installation over Plant 2 Flash Mixer and Clarifiers	3	-	100,000	300,000								400,000
Treatment	WTP - Gladstone	GWTP Replacement of Roof of Main Building	3	100,000	400,000									500,000
Treatment	WTP - Gladstone	GWTP Replacement of air compressor	2	22,718										22,718
Treatment	General	Water Quality - Fluoridation of Potable Water	3	1,530,886										1,530,886
Treatment	General	Water Quality - Fluoridation of Potable Water (Subsidy)	3	(1,530,886)										- 1,530,886
Treatment	WTP - Gladstone	GWTP New Water Sampling Facility	5	-	200,000									200,000
Treatment	WTP - Gladstone	GWTP Upgrade Clarifier No. 2 Flow Baffle	3	50,000										50,000
Treatment	WTP - Gladstone	GWTP Turbidity Meters and Instrumentation Upgrade	3	100,000										100,000
Treatment	WTP - Gladstone	GWTP - Sludge Dewatering Facility	5		100,000	1,000,000								1,100,000
Treatment	WTP - Yarwun	YWTP - Upgrade roof, doors & windows to cyclone rating	3	-	100,000									100,000
Treatment	WTP - Yarwun	YWTP - Installation of roof over clarifier	3			200,000								200,000
Treatment	General	Equipment replacements as per schedule from price model	2	-	190,653	133,091	220,042	28,875	342,514	596,488	769,741	225,073	1,110,240	3,616,717
	TREATMENT SUBTOTAL			**972,718**	**3,175,653**	**3,133,091**	**220,042**	**28,875**	**342,514**	**596,488**	**1,019,741**	**225,073**	**1,110,240**	**10,824,435**
Corporate	General	Head Office - Install Roller Shutters and window tinting	3	50,000										50,000
Corporate	General	Head Office - Ground Floor Switchboard Replacement	3	61,500										61,500
Corporate	General	Head Office - Down Stairs Switchboard Replacement (air conditioning unit)	2	-	50,000									50,000
Corporate	General	Head Office - Emergency Generator	3	38,500										38,500
Corporate	General	Head Office - Replace Air-conditioning - 2 units on roof	2	-	200,000									200,000
ADMINISTRATION				150,000	250,000	-	-	-	-	-	-	-	-	400,000
Corporate	IT	IS Software & Systems - GIS & Navision Integration	5	120,000										120,000
Corporate	IT	IS Software & Systems - HR/Payroll	5	80,000										80,000
Corporate	IT	Compliance System for legislative requirements	3	80,000										80,000
Corporate	IT	Contract Management Solution	5	50,000										50,000
Corporate	IT	IS Software & Systems - Water Quality Recording System	3	50,000										50,000
Corporate	IT	IS Hardware - 2 x Switches (managed network switches)	2	25,000										25,000
Corporate	IT	VOIP Unified Communications Solution	2	150,000	60,000		15,000		10,000		10,000			245,000
Corporate	IT	Electronic Security/Surveillance System	1	-	50,000		10,000			60,000				120,000
Corporate	IT	ERP/Asset maintenance Review	5	-				300,000					500,000	800,000
Corporate	IT	UPS Replacement	2	-		15,000		15,000						30,000
Corporate	IT	Server Room Cooling System	2	-					40,000					40,000
Corporate	IT	VMware software for Disaster Recovery network	3	15,000										15,000
Corporate	IT	SharePoint additional tools	5	50,000	10,000	5,000		5,000		10,000		10,000		90,000
INFORMATION TECHNOLOGY				620,000	120,000	20,000	25,000	320,000	50,000	70,000	10,000	10,000	500,000	1,745,000
		Equipment replacements as per schedule from price model	2		136,716	55,704	600,478	217,136	719,805	253,750	598,704	112,471	366,926	3,061,690
	CORPORATE SUBTOTAL			**770,000**	**506,716**	**75,704**	**625,478**	**537,136**	**769,805**	**323,750**	**608,704**	**122,471**	**866,926**	**5,206,690**
														-
	Grand Total			**20,181,249**	**19,850,195**	**33,518,691**	**11,853,968**	**2,609,020**	**4,686,119**	**1,910,964**	**3,383,744**	**3,212,861**	**8,694,299**	**109,901,110**

APPENDIX B

Documents Accessed

No.	Title	Author	Date	Notes
1	Awoonga Dam Annual Dam Inspection	GHD	July 2009	Includes detail of comprehensive dam inspections done in 2007 by Sunwater
2	Business Case, Control Systems Integration	GAWB,	24 October 2008	
3	Critical Assets Due Diligence Review,	R2A Risk and Reliability Associates	February 2009.	
4	Awoonga Dam HV Risk Assessment	Welcon	23 December 2008	
5	Report for Awoonga Dam Modifications, Implementation and Strategy Report	GHD,	July09	(Valve refurbishment and remote operation of River Discharge Valves)
6	Awoonga Dam intake tower cranes, Crane Modifications, ,	GHD	June 2009	$450k but only 200k in CAPEX program
7	GHD Acceptable Flood Capacity Study Awoonga Dam	Connell Wagner	20 Oct 2008	$620k
8	Report for Awoonga Saddle Dam No 3, Acceptable flood capacity assessment	GHD	June 2009	(includes $19.8M Option 4 but $24M in CAPEX budget)
9	Business Case, Yarwun Water Treatment Plant Stage 1 Upgrade,.	GAWB	November 2007	
10	Gladstone Area Water Board, Investigation of pricing practices	QCA	March 2005	
11	Statement of Regulatory Pricing Principles for the Water Sector	QCA	December 2000	
12	Quantitative risk assessment of critical assets, Yarwun and Awoonga Buildings	Worley Parsons		
13	DORC Valuation, Calliope Shire Council Water Supply Infrastructure	Davwil Designs and Management Services	April 2006	
14	Condition evaluation of raw & treated water pipeline systems & associated assets, Stage 2a report	Alf Grigg and Associates	30 September 2007	
15	Concrete Water Storage Reservoirs Risk Assessment	Izzat Corrosion and Asset Control	15 February 2008	
16	Northern Area Water Supply Strategy	MWH	July 2005	
17	System Leakage Management Plan	GAWB	September 2008	
18	Report for Awoonga Dam Pump Station, Proposed Remedial Works and cost estimate	GHD	June 2008	Total Estimate $1.37 M
19	TMP/SAMP Documents as follows; • Summary Document GAWB01 • Asset Management Plan Overview GAWB05	GAWB	October 2007	

20	SAMP annual report for Water Supply Services 2006/07	GAWB		
21	SAMP and CSS annual report for Water Supply Services 2005/06	GAWB		
22	GAWB Corporate Structure	GAWB	Rev23 26/6/09	
23	Asbestos Management Plan,	GAWB	Rev 1 27/2/09	
24	Calliope Water Supply Scheme, Strategic Plan	Calliope Shire Council	July 2007	
25	Vision Statement, Control System Upgrade	Connell Wagner	22 Nov 2007	
26	Awoonga Dam High Voltage Power Supply Upgrade	Welcon	11 March 2008	
27	Control Systems and Flow Metering Strategic Review	Welcon	23 Feb 2007	
28	2009-10 CAPEX Budget Explanation to be considered at 30 April 2009 Board Meeting	GAWB		
29	Water Quality Sampling Strategy to be considered at 30 April 2009 Board Meeting	GAWB		Capital estimate in report is $97,500
30	Information Systems Strategic Plan, 2007/08 to 2009/10	GAWB		
31	Gladstone WTP PAC Concept Design Report – Preliminary Draft	MJM Environmental	27 August 2009	PAC replacement estimate is $1.8M
32	Gladstone and Yarwun WTP Fluoride Concept Design Report	MJM Environmental	30 July 2009	Poly Plant replacement estimated at $445k
33	Boat Creek Pump Station Raw Water Network Reinstatement – Preliminary Project Estimate	GHD	12 March 2008	
34	DN700 Awoonga Dam Pipeline Remediation Works, Status Report	GHD	18 August 2009	
35	2009-19 CAPEX Budget Proposal, Operations Projects	GAWB	23 January 2009	
36	Fixed Asset Book Depreciation summary printout	GAWB	26 August 2009	
37	Awoonga Dam Pump Station Building Refurbishment Estimate of cost – excel file	GAWB		
38	Business Case Development Guidelines	GAWB	Rev 2 Rev Date 19/05/09	
39	WTP Roof Replacement Estimates	AESTEC Services	12 June 2008	
40	Project Plan Flowchart	GAWB	Rev 3 Rev Date 16/10/2007	
41	GAWB Meeting Minute No: 2009/05 P3 Item 8	GAWB	25 September 2008	GAWB adoption of Project Evaluation Guidelines and Business Case Templates

42	Business Case for Fitzsimmons Street 50ML Reservoir – Repair Works	GAWB	10 June 2009	
43	Review of Scheduled Preventative Maintenance	Hunter Water	3 August 2009	
44	QAL Red Mud Dam Pipeline Relocation Study Stage 1	GHD	February 2009	
45	Glen Eden Pump Station Water Hammer Analysis Report	Cardno	21 November 2008	
46	DRAFT-Life Cycle Analysis Report for Gladstone Area Water Board	GHD	July 2009	Includes supporting excel spreadsheet with projected CAPEX and OPEX spend
47	Operations Risk Register – GAWB Intranet	GAWB	As at 25 August 2009	
48	Condition evaluation of water supply & associated assets Stage 1a report	Alf Grigg and Associates	22 December 2006	
49	Project Initiation form	GAWB	Rev 1 25/05/2009	
50	Project Closure Report	GAWB		
51	Project Plan Template <10,000	GAWB		
52	Project Plan Template $10,000 but less than $350,000	GAWB		
53	Project Plan Template - Greater than $1million but under $5million	GAWB		
54	Project Plan/Business Case Variation	GAWB		
55	Email John Stewardson to Chris Hegarty	GAWB		Recreation Road areas
56	Email James Stewart to Chris Hegarty	GAWB		Reservoir roof information
57	Awoonga Dam AFC Assessment Option 2E additional information	GHD	3 September 2009	Recommends Saddle Dam No 3 Option 4 at $22m. Inc attached sketches and guidelines for stabilizing waterways.
58	Awoonga Dam (ID # 0211)Dam Safety Condition Schedule For: Gladstone Area Water Board	DERM	September 2009	Draft for discussion with GAWB
59	Board Paper - 2009-10 CAPEX Budget Explanation	GAWB	21 April 2009	Contains short narrative on most projects in 2009/10 budget.
60	Pre-feasibility Estimate for site 2	Aurecon	4 September 2009	Estimate for Offline Storage and Re-pump Station - $19.1 million
61	Sth Gladstone Reservoir -Email James Stewart to Chris Hegarty	GAWB	25/08/2009	Scope and estimate for Roof replacement
62	Historical CAPEX delivery - Email Jim Grayson to John Graham	GAWB	8 September 2009	Clarifies previous performance in terms of projects completed and actual expenditure
63	2008 Annual Report	GAWB	29 September 2008	
64	New, replacement, repairs, maintenance definitions – email from Penny Fiddes	GAWB	10 September 2009	

65	Business Case/ Project Plan CS2009-002 Lake Awoonga Land Rationalisation Project	GAWB	Monday 15 December 2008	
66	Email from Peter Kastrup to Richard West – Design sketches	ARUP	20 July 2009	Design sketches relating to Toolooa Reservoir seal
67	Toolooa Reservoir, Movement Interpretation report Draft 1	ARUP	June 2009	
68	Acquisition of Yarwun Potable Water Infrastructure	GAWB	29 June 2006	Relates to Northern Assets purchase (based on DORC)
69	Asset Valuation – June 2005 – Final Report	SMEC	September 2005	
70	Email Jim Grayson to John Graham	GAWB	5 Oct 2009	Current Asset valuation summary
71	Fitzsimmons St 50ML Reservoir Additional Repair Works Business Case Variation No. 1	GAWB	18 Sept 09	Proposed CAPEX now increased from $771k to $1001k after further investigation work
72	Accounting advice relating to the capitalization considerations for certain costs at specific reservoirs and dams	KPMG	16 Sept 2009	
73	Replacement of zero turn mowers – Project Plan	GAWB	16 Sept 2009	
74	Waterfall pump upgrade - project plan	GAWB	8 Sept 2009	
75	Kalinda Information Centre - Project Plan	GAWB	8 Sept 2009	
76	Boyne Catchment – Groundwater Investigation Stage 1 - Project Plan	GAWB	25 May 2009	Includes a variation 8/9/09 for CAPEX to design and install boreholes
77	Assessment of Environmentally Relevant activities	GAWB	7/9/09	Includes a variation 1 8/9/09 to include $30k CAPEX for design and drilling boreholes.
78	Water Monitoring and Controls Systems (SCADA Telemetry & Information Systems Upgrade Project) – Project Plan Variation	GAWB	21/9/09	Includes $100k to complete project
79	Business Case for Dam Safety Compliance Works	GAWB	16/9/09	
80	Business Case For Fitzsimmons Street Reservoir-Meters and Interconnection	GAWB	May 2009	$993k inc contingency
81	Head office ground floor Switchboard Replacement – Project Plan	GAWB	22/7/09	$36.5k
82	Excel spreadsheet – 'Replacement Assets'	GAWB	unknown	Draws on asset information and predicts renewals expenditure
83	Business Case - Purchase of Calliope Shire Council's (CSC) Potable Water Infrastructure at Yarwun	GAWB	May 2006	

APPENDIX C

Individual Project Assessment

	Proposed 2009/10 Capital Plan					
Project Area	**Activity Area**	**Project Name**	**Total**	**Documentation to justify**	**Cardno assigned confidence rating for estimated cost**	**Cardno Assessment Notes**
Storage	Dam	Awoonga Dam - Intake Tower Cranes Upgrade	453,919	Doc 1,6,35	1	Requirement of regulator. New valve and vents. Various supporting documentation.
Storage	Dam	Awoonga Dam - instyall guard rails at intake tower	11,000	nil	2	Based on GAWB estimate - expect costs to be reasonable
Storage	Dam	Awoonga Dam - Replacement of coarse screens in intake tower	60,000	Doc 79	3	Cost estimated based on GHD report for other works but job yet to be fully scoped.
Storage	Dam	Awoonga Dam - Remote Operation of River Discharge Valves	320,000	Doc 1,5,35	1	Requirement of regulator. Reports by GHD to justify.
Storage	Dam	Awoonga Dam - Saddle Dam No 3	21,000,000	Doc 8,35,57	2	Requirement of regulator. Several related reports and estimates by GHD. Best estimate given available information at this time.
Storage	Dam	Awoonga Dam - Raising Left Abutment	1,000,000	Doc 35	2	Requirement of regulator. GHD reports explain project and estimate cost.
Storage	Dam	Awoonga Dam - Pump Station road resurfacing	24,500	nil	2	GAWB estimates based on area and unit rates
Storage	Dam	Awoonga Dam - Hard stand replacement	80,000	nil	2	GAWB estimates based on area and unit rates
Storage	Dam	Awoonga Dam - Wall Access road construction 500m section	40,000	nil	2	GAWB estimates based on area and unit rates
Storage	Dam	Dam Level Indicator - Intake Tower	25,000	nil	2	Cost expected to be reasonable.
Storage	Dam	Catchment Gorindwater Monitoring installation of bores	98,020	Doc 76	1	Supported by a project plan. CAPEX component is to design and install boreholes.
		Awoonga Dam - STP monitoring bores	30,500	Doc 77	1	Supported by a project plan. CAPEX component is to design and install boreholes.
Storage	Dam	Gauging Station Upgrade - Milton & Marlua	115,000	Doc 59	2	Not fully scoped at this stage but cost expected to be reasonable
Storage		Equipment replacements as per schedule from price model	1,960,709	Doc 82	2	Supported by calculation spreadsheet and draws on 2005 asset information
	DAM SUB TOTAL		**25,218,648**			
Cont. Supply	CSS	Lower Fitzroy Weirs - Planning Stage	6,432,790			Assessment not in project scope
Cont. Supply	CSS	Desalination	955,000			Assessment not in project scope
Cont. Supply	CSS	Transition and management stage for Gladstone Fitzroy Pipeline Project	6,352,472			Assessment not in project scope
	CONTINGENT SUPPLY STRATEGY SUB TOTAL		**13,740,262**			
Storage	Land	Land rationalisation includes survey expenses, purchases see project plan CS2008-004 and board presentation of 31 January 2008	1,425,000	Doc 59	2	Detailed business plan. Some uncertainty in cost given land acquisitions invloved.
	LAND MANAGEMENT SUB TOTAL		**1,425,000**			
Storage	Rec Area	Awoonga Boat Ramp Additional Carparking	50,000	Doc 59	2	For use in summer months to alleviate congestion. Pavement and spray seal.
Storage	Rec Area	Replacement of RTV	25,000	nil	2	Replacement
Storage	Rec Area	Waterfall Pump Upgrade (including holding tanks)	20,000	Doc 59, 74	1	To enable use of dam water rather than potable water. Supported by a Project Plan.

	Proposed 2009/10 Capital Plan					
Project Area	**Activity Area**	**Project Name**	**Total**	**Documentation to justify**	**Cardno assigned confidence rating for estimated cost**	**Cardno Assessment Notes**
Storage	Rec Area	Walkway Pontoon	120,000	nil	3	Could be public saftey issue. Solution is not fully scoped at this stage.
Storage	Rec Area	Replacement Mowers x 2	35,090	Doc 73	1	Replacement. Supported by a Project Plan.
Storage	Rec Area	Boat Motor replacement	20,000	nil	2	Replacement
Storage	Rec Area	Road Resurfacing	254,000	Doc 55	2	On basis of road areas provided Cardno estimates an annual liability for renewal of seals alone of about $70k - considered to be justified although work should be prioritised.
Storage	Rec Area	Bobcat	60,000	nil	2	upgrade of small Kubota tractor
Storage	Rec Area	House - Kitchens & bathrooms replacement	250,000	nil	2	Involves 5 GAWB owned houses. Cost expected to be reasonable.
Storage	Rec Area	Recreation Area - Additional Shelter	50,000	Doc 59	2	New shelter. Cost expected to be appropriate. Unsure of need.
Storage	Rec Area	Rec Area - Playground Shadecloth Replacement	40,000	nil	2	4 shade areas involved. Cost appears reasonable.
Storage	Rec Area	Boynedale Lookout Additional Shelter	85,000	nil	2	Upgrade of existing facility.
Storage	Rec Area	Boynedale Bush Camp Additional Toilet	35,000	Doc 59	2	One amount for upgrade and one for a new facility.
Storage	Rec Area	Boynedale Bush Camp - replace shelter	40,000	nil	3	Unsure of scope
Storage	Rec Area	Kalinda Information Centre	52,000	Doc 59, 75	1	Proposed to turn an existing café into an information centre. Supported by a project plan.
Storage	Hatchery	Hatchery Tank Heating System Upgrade	30,000	nil	2	Not scoped but cost appears reasonable.
Storage	Hatchery	Hatchery Mains Board Upgrade	80,000	nil	2	Not scoped but cost appears reasonable.
Storage	Hatchery	Hatchery Relocation	200,000	nil	3	Hatchery currently located on Port land but must move. New location and configuration is uncertain.
	RECREATION & HACTHERY SUB TOTAL		**1,446,090**			
	STORAGE SUBTOTAL		**41,830,000**			
Delivery	Dam	Awoonga Dam - Power Supply - High Voltage Upgrade	801,089	Doc 4,26,35	1	Well documented and scoped. Includes transfer monies from previous year.
Delivery	Dam	Awoonga Dam - Pump Station Building Refurbishment - Design	2,200,000	Doc 18,35,37	1	Well documented and scoped
Delivery	Dam	Awoonga Dam Buildings and Facilities	100,000	nil	2	Refurbishment/replacement general allowance
Delivery	Dam	Awoonga Dam - Chlorine Building Structure Upgrade	100,000	Doc 12,35	2	Refurbishment/replacement
Delivery	Dam	Awoonga Dam - VFD and Control Building Structure Upgrade	1,000,000	Doc 12,35	2	4 Bldgs involved - pursuant to condition assessment.
Delivery	Dam	Awoonga Dam - Pumps 1 & 2 - Replacement of Non-Return Valves	150,000	Doc 35	2	renewals
Delivery	General	Control Systems Integration - Telemety & flowmeters	100,000	Doc 78	1	To complete project carried out over previous years. Business case variation to support.
Delivery	General	Flow Meters Replacement Program	233,471	Doc 27,35	1	Well documented and scoped
Delivery	General	Flowmeter Upgrades - Stage 2	450,000	Doc 27,35	1	Well documented and scoped
Delivery	General	Fitzsimmons Street Flow Meters & MM Cross Connection	993,000	Doc 17,35,80	1	Supported by business case. Well documented and scoped. Based on Aurecon estimates.
Delivery	General	Toolooa Reservoir - Seal Replacement	500,000	Doc 35,66,67	2	Arup Report and design sketches available
Delivery	General	Toolooa Chlorinator and Pump Station Road Access	450,000	Doc 35	3	Potential safety issues with access off main road - has not been fully scoped at this time.

	Proposed 2009/10 Capital Plan					
Project Area	**Activity Area**	**Project Name**	**Total**	**Documentation to justify**	**Cardno assigned confidence rating for estimated cost**	**Cardno Assessment Notes**
Delivery	General	Fitzsimmons Street Reservoirs - Post-tensioning Refurbishment	1,001,151	Doc 71	1	Supported by a business case and detailed investigation work.
Delivery	General	Mt Miller Reservoir - Post tensioning refurbishment	450,000	Doc 71	3	Costs estimated based on Fitzsimmons St reservoir as they are similar construction and have the same problems. Detailed investigation yet to be carried out to quantify scope at Mt Miller Reservoir.
Delivery	General	South Gladstone Reservoir - Roof Replacement	925,000	Doc 56,61	1	New galvanised support frames and sheeting to replace asbestos. Roof Area 1520 sq. m
Delivery	General	Roof Replacement - Fitzsimmons Street 50ML Reservoir	1,100,000	Doc 35,56	3	GAWB estimate. Roof area about 5000 sq. m. Unsure if roof support structure to be replaced also.
Delivery	IT	Boat Creek Raw Water Network - Reinstatement	750,000	Doc 3, 33,35,59	1	Reinstatement of Pump Station to minimise supply risk. Well scoped.
Delivery	Pipeline	Awoonga to Gladstone Pipeline - 700mm Replacement for Lining Failure	700,000	14,34,35,48	2	Well investigated. Potentially 15km of pipe involved with $1M/km allowance. Rate is reasonable. $700k is for purchase and installation of inspection tees for underground section of pipeline in suburban area to permit ongoing monitoring.
Delivery	Pipeline	Distribution Network Pipeline Replacements/Upgrades	1,500,000	Doc 35	3	General allowance but it is expected that some expenditure will be required once further condition assessment is carried out to define scope and timing of any expenditure.
Delivery	Pipeline	Installation Scour Valves - Toolooa to Fitzsimmons RW Pipeline (RW2 1080)	225,000	nil	3	Replacement of leaking valves on scours. Internal GAWB estimate. Unsure of number of scours involved
Delivery	Pipeline	Scour Protection - Mt Miller RW Pipeline	30,000	Doc 35	2	Cost expected to be reasonable
Delivery	Pipeline	Purchase land Mt Miller pipeline	175,000	Doc 59	2	Supported by business case.
Delivery	Pipeline	Pipeline Replacement - Golegumma TW Pipeline	5,400,000	Doc 35	2	20km of 300dia pipeline - rate is $220/m which is considered reasonable. Estimate increased by $1m to do a section of the pipeline between Skyring Hill Road and Benaraby Booster Pump Station.
Delivery	Pipeline	Pipeline Replacement - QAL Pipeline	1,700,000	Doc 14,35	2	Alf Grigg Report indicates life has expired. 1.5km of 600 dia MSCL at $1100/km. Cost is within expected bounds.
Delivery	Pipeline	Pipeline Replacement - East End TW Pipeline	1,700,000	Doc 14,35	3	Alf Grigg Report says life <5 years. Length 4 to 5 km at $400/km. Upgrade length is uncertain.
Delivery	Pipeline	Online Turbidity analysers	56,500	nil	2	New analysers out in the system linked to telemetry
Delivery	Pipeline	Online Flouride analysers	33,500	Doc 35	2	New analysers out in the system linked to telemetry. Likely to be covered by government subsidy
Delivery	General	Mt Miller Reservoir - Inlet modification	100,000	nil	2	Modification of common inlet/outlet to new inlet over the top to get dilution effect for chlorine addition.
Delivery	Strategy	Boyne Island Raw & Potable DICL Pipeline Sections Replacement	3,400,000	Doc 44,35	2	Timing for this project depends on QAL. GHD estimates $8.9M but it is assumed sections of realignment will be funded by QAL.
Delivery	Strategy	Boyne Island Reservoir - Chlorination Unit	120,000	Doc 35	2	Risk and Regulatory - to maintain chlorine residual in network
Delivery	Strategy	Off-Line Storage Dam and Re-Pump Station	19,100,000	Doc 3, 60	2	To address risk of supply failure. Cost is based on a recent Aurecon estimate and includes a 30% contingency
Delivery	General	Equipment replacements as per schedule from price model	6,496,274	Doc 82	2	Supported by calculation spreadsheet and draws on 2005 asset information

	Proposed 2009/10 Capital Plan					
Project Area	**Activity Area**	**Project Name**	**Total**	**Documentation to justify**	**Cardno assigned confidence rating for estimated cost**	**Cardno Assessment Notes**
	DELIVERY SUBTOTAL		**52,039,985**			
Treatment	WTP - Gladstone	GWTP Replace the Carbon Batching and Dosing Plant	1,840,000	Doc 31,35	2	Cost consistent with MJM Environmental report
Treatment	WTP - Gladstone	GWTP Replace the Polyelectrolyte Batching & Dosing Plant	445,000	Doc 32,35	2	Cost consistent with MJM Environmental report
Treatment	WTP - Gladstone	GWTP Emergency Power Supply	2,000,000	Doc 35	2	To address water supply risk due to power failure. Identified as moderate risk in GAWB Risk register. GAWB Estimate.
Treatment	WTP - Gladstone	GWTP Roof Replacement - Clear Water Storage Plant 1	250,000	35,56	2	Roof Area 547 sq. m
Treatment	WTP - Gladstone	GWTP Roof Installation over Plant 2 Flash Mixer and Clarifiers	400,000	Doc 35	2	Worley Parsons Report. Clarifier roof area would be 2 x 1260 sq. m
Treatment	WTP - Gladstone	GWTP Replacement of Roof of Main Building	500,000	35,56	2	Roof Area 1064 sq. m
Treatment	WTP - Gladstone	GWTP Replacement of air compressor	22,718	nil	1	Replacement cost based on quotes.
Treatment	General	Water Quality - Fluoridation of Potable Water	1,530,886	Doc 32	1	Well scoped and estimated.
Treatment	General	Water Quality - Fluoridation of Potable Water (Subsidy)	- 1,530,886			
Treatment	WTP - Gladstone	GWTP New Water Sampling Facility	200,000	Doc 35	2	Internal GAWB estimate, will be a portable bldg, board paper to justify
Treatment	WTP - Gladstone	GWTP Upgrade Clarifier No. 2 Flow Baffle	50,000	Doc 35	2	Replacement
Treatment	WTP - Gladstone	GWTP Turbidity Meters and Instrumentation Upgrade	100,000	Doc 35	2	Amended as per James Stewart email dated 27/8/09. Was $200k.
Treatment	WTP - Gladstone	GWTP - Sludge Dewatering Facility	1,100,000	nil	3	No information available
Treatment	WTP - Yarwun	YWTP - Upgrade roof, doors & windows to cyclone rating	100,000	Doc 35	2	Based on GAWB estimate - expect costs to be reasonable
Treatment	WTP - Yarwun	YWTP - Installation of roof over clarifier	200,000	Doc 56	2	Roof Area 248 sq. m. Cost within expected bounds.
Treatment	General	Equipment replacements as per schedule from price model	3,616,717	Doc 82	2	Supported by calculation spreadsheet and draws on 2005 asset information
	TREATMENT SUBTOTAL		**10,824,435**			
Corporate	General	Head Office - Install Roller Shutters and window tinting	50,000	Doc 35	2	Part of establishing GAWB Emergency centre
Corporate	General	Head Office - Ground Floor Switchboard Replacement	61,500	Doc 35	1	Project Plan to support. Part of establishing GAWB Emergency centre
Corporate	General	Head Office - Down Stairs Switchboard Replacement (air conditioning unit)	50,000	Doc 35	2	Part of establishing GAWB Emergency centre
Corporate	General	Head Office - Emergency Generator	38,500	Doc 35	1	Has already been purchased. Part of establishing GAWB Emergency centre
Corporate	General	Head Office - Replace Air-conditioning - 2 units on roof	200,000	Doc 35	2	Renewal
ADMINISTRATION			**400,000**			
Corporate	IT	IS Software & Systems - GIS & Navision Integration	120,000	Doc 30,59	3	Part of a detailed strategy but cost uncertain.
Corporate	IT	IS Software & Systems - HR/Payroll	80,000	Doc 30,59	3	Part of a detailed strategy but cost uncertain.
Corporate	IT	Compliance System for legislative requirements	80,000	Doc 58	3	No information
Corporate	IT	Contract Management Solution	50,000	Doc 59	3	No information
Corporate	IT	IS Software & Systems - Water Quality Recording System	50,000	Doc 30	3	Part of a detailed strategy but cost uncertain.
Corporate	IT	IS Hardware - 2 x Switches (managed network switches)	25,000	Doc 30,59	2	Part of implementing new phone system. Costs expected to be reasonable.
Corporate	IT	VOIP Unified Communications Solution	245,000	Doc 30,59	3	Part of a detailed strategy but cost uncertain.
Corporate	IT	Electronic Security/Surveillance System	120,000	nil	3	May be installed at dam or other sites. Not fully scoped. Refer BLG email 26/8/09

	Proposed 2009/10 Capital Plan					
Project Area	**Activity Area**	**Project Name**	**Total**	**Documentation to justify**	**Cardno assigned confidence rating for estimated cost**	**Cardno Assessment Notes**
Corporate	IT	ERP/Asset maintenance Review	800,000	Doc 30	3	Navision upgrades - may be a need to migrate to a new system. Costs are rough estimates only.
Corporate	IT	UPS Replacement	30,000	nil	2	Replacement
Corporate	IT	Server Room Cooling System	40,000	nil	2	Replacement
Corporate	IT	VMware software for Disaster Recovery network	15,000	Doc 59	2	New software - cost expected to be reasonable.
Corporate	IT	SharePoint additional tools	90,000	Doc 30	2	Estimates based on expected software cost.
INFORMATION TECHNOLOGY			**1,745,000**			
		Equipment replacements as per schedule from price mo	3,061,690	Doc 82	2	Supported by calculation spreadsheet and draws on 2005 asset information
	CORPORATE SUBTOTAL		**5,206,690**			
			-			
	Grand Total		**109,901,110**