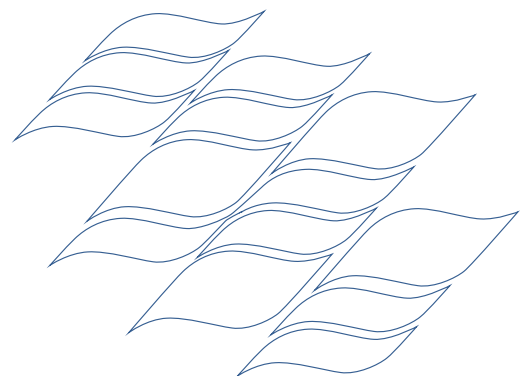


Appendix 22

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Lower Fitzroy River Estimate of Holding Costs,
correspondence 28 September 2009
(GHD Pty Ltd)





28 September 2009

Gladstone Area Water Board
147 Goondoon Street
GLADSTONE QLD 4680

Our ref: 41/20736/395779
Your ref:

Attn: Mr Richard West

Dear Richard

Lower Fitzroy River Infrastructure Project Estimate of Holding Costs

Further to your recent request for advice in support of GAWB's submission to the Queensland Competition Authority regarding the June 2010 review of customers' water prices, we summarise below the indicative expenditure GHD estimates will be needed for the period July 2010 through to June 2030, in order to maintain and hold the capability GAWB will have attained from the completion of Phases I and II of the Detailed Business Case.

We understand GAWB will provide from its own records, costs incurred up to and including 30 June 2010, from a combination of actual costs expended, as well as the forecast/budget for 2009/2010.

In preparing these indicative costs we have assumed the following:

- ▶ That there will be no construction of the infrastructure during 2010 – 2030. (for the purposes of this submission, any GAWB costs relating to construction (Phases III to VI) will be taken into account in a separate price review after the construction of the infrastructure has been triggered.
- ▶ GAWB's share of the costs will be 50%.
- ▶ Estimates are in current dollars with no escalation factor applied.
- ▶ All costs relating to Phases I and II have already been taken into account by GAWB even though some may occur July to August 2010.

Indicative Expenditures

1. Mothballing Existing Work

If there is any prospect of an appreciable delay between Stages 2 and 3 (or any other stages for that matter), it is almost certain that much of the intellectual capital currently on held the project would be diverted to other projects with no certainty of returning.

It would therefore be advisable to "mothball" all work completed to date, such that the corporate knowledge held by all existing project participants (including project proponent team members) is documented for future use by other parties.



Whilst the project records are reasonably robust as they stand, there would be some work required to ensure that thorough documentation regarding the project is laid down for periodical uploading over future years.

Suggested allowance: \$50,000 Lump Sum

2. **Review of Approvals Legislation**

Environmental legislation changes frequently, and for this reason it is recommended that for any period of abeyance, an annual review of legislative changes and developments is carried out.

The objective would be to identify any emerging gaps between the approvals in place at the time of putting the project on hold, and contemporary requirements. It would not be likely that staff familiar with the project would be available each year to participate in this work

Suggested allowance: \$25,000 per year

3. **Review of Fish Passage**

It is unlikely that the designs as developed during Stage 2 of the project will require any appreciable modification prior to construction, on the grounds of technological development. The only exception to this however, is the proposed fish passage. The body of knowledge and experience in relation to fishway design is developing rapidly (in comparison to dam design) and it is expected that there will continue to be changes in approach on a regular basis.

Consequently, we believe that a prudent approach would be to revisit the fish passage design on a two year cycle. Concept design is currently being prepared in Stage 2 for the purposes of cost estimates and securing timely agency approval. We suggest that the concept be reviewed on a bi-annual basis against contemporary practices and lessons learnt from other fishways in Central Queensland and elsewhere. Consultation with Fisheries authorities would also be appropriate. Both engineering and biological input would be required.

Suggested allowance: \$30,000 every two years

4. **Ecological Overview, Review of EIA Recommendations, and EPBC Condition Review**

It would be prudent for the project proponents to physically review the environmental conditions and circumstances on a regular basis, to ensure that EIA recommendations and EPBC conditions remain relevant and appropriate for this project.



Over time, many new conditions can arise that impact on the appropriateness of EIA findings, and new knowledge or understanding of the environment may indicate that changes to EIA recommendations would be appropriate. For example, changes in land use, new infrastructure development, additional research on existing flora and fauna, and even discovery of new species within the habitat, would all provoke reconsideration of the EIA.

We note that this is not so much required due to any "horizons" embodied within the relevant approvals, but to keep track of changes that may affect the relevance or effectiveness of recommendations made in relation to environmental management and mitigation. Our recommendation is therefore based on the proponent's legal obligations under the relevant legislation to do no harm. It would also be an appropriate level of "due diligence" to ensure that these reviews were carried out, which would also yield valuable additional baseline information.

Review of the social and environmental circumstances pertinent to the project should also be allowed for on a bi-annual basis.

Note that this does not include allowance to address any identified changes in circumstances, but to identify them only.

Suggested allowance: \$50,000 every two years

5. **River Flow Review**

Rainfall records will continue to accumulate over time, and consequently there could be some change in the modelled yield associated with expanded statistical data. We would therefore suggest that a review of the records and rechecking of models every five years or so, would be a reasonable response to the risk that rainfall patterns are changing, or that the historical records existing at today's date does not adequately reflect true probabilistic rainfall patterns.

This new information would be of particular value in two areas - reconfirming the projects ability to meet demand and reliability expectations, and also to reconfirm adequacy of environmental flow provisions.

Suggested allowance: \$150,000 every five years

6. **Review Hydraulic Modelling**

There are a number of potential one-off triggers that could occur during any period during which the project is "mothballed". These include:

- Change in software - it is anticipated that DERM will move from the IQQM modelling tool to another platform at some stage in the not-too-distant future, and consequently, it would be appropriate that if the project was on hold, to revisit the hydraulic modelling at that time;



- Change in development status of Nathan or Connor Dams - any significant change in the project status of these projects would necessitate revisitation of the modelling;
- Change in the Regional Water Resource Plan - changes to the regional water objectives and outcomes would drive review of the modelling.

Suggested allowance: \$150,000 Lump Sum

7. **Review of Risk Register**

Part of the "moth-balling" process would be to update the Risk Register. It would be prudent to then re-visit this Register regularly over the span of any project hiatus to ensure that any changes in the risk profile and any opportunities are captured and responded to.

A short one-day risk workshop should be convened periodically with key discipline leads (excluding any consequent actions to address emerging risk issues).

Suggested allowance: \$15,000 every two years

8. **Changes in Circumstances**

Each of the above reviews is capable of identifying necessary changes to the design of the infrastructure. In the above discussion on fish passages, we have suggested an allowance for budgeting purposes to address probably changes. However, each of the other estimates covers only a review process, and it is possible that such reviews will lead to redesign work. We have not attempted to quantify such additional work.

The proponents should allow for this risk within their forward budgeting. It is not possible for GHD to readily quantify what this investment into a "sinking fund" should be, and the proponents should take their own advice in relation to this. Nevertheless, if there was a 1% probability in any given year that completed work would need to be redone, an annual investment of 1% of \$14,600,000, might be a defensible quantum.

Suggested allowance: \$150,000 Lump Sum



In Summary

	Item cost	Cost over 20 yrs
1. Mothballing Existing Work	50,000 Lump Sum	50,000
2. Review of Approvals Legislation	25,000 yearly	500,000
3. Review of Fish Passage	30,000 2 yearly	300,000
4. Ecological Overview	50,000 2 yearly	500,000
5. River Flow Review	150,000 5 yearly	600,000
6. Review Hydraulic Modelling	150,000 Lump Sum	150,000
7. Review of Risk Register	15,000 2 yearly	150,000
8. <u>Changes in Circumstances</u>	150,000 Lump Sum	150,000
		\$2,400,000
GAWB's share (50%)		\$1,200,000

We trust that this is of assistance. Should you have any questions, please call the undersigned at your convenience.

Yours faithfully
GHD Pty Ltd

Murray Wilson
Project Manager
(07 3316 3149)