



Report 10.211
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Committee Regional Sustainability Committee
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Stuart Macaskill Lakes – revised construction programme for upgrade works

1. Purpose

To advise the Committee of the revised construction programme for raising the water levels and seismic upgrade of the Stuart Macaskill Lakes, and the impact of this change on the timing of capital expenditure.

2. Significance of the decision

The matters for decision in this report **do not** trigger the significance policy of the Council or otherwise trigger section 76(3)(b) of the *Local Government Act 2002*.

3. Background

Capital funding was included in the LTCCP over financial years 2009/10 to 2012/13 for work to upgrade the seismic performance and raise the water level of both lakes.

The funding was based on a preliminary programme that showed completion of design, consent applications and contract documents before the end of this financial year, followed by tender and contract award in late August 2010, and on-site construction commencing in November. The timeline allowed 3 months for contractor mobilisation and delivery of materials. Lake 2 would not be drained until tenders had closed and prices were known. The construction work for Lake 2 was programmed over the summer of 2010/11 and Lake 1 over the summer of 2011/12.

As our consultants progressed with the design and developed the project programme, it became clear that the design and consenting phase would take longer than expected, which has created a number of issues and increased the risks for construction work on Lake 2 over the 2010/11 summer. Our review of these issues and risks has resulted in the decision to revise both the project programme and construction methodology.

4. Comment

4.1 Issues with the current programme

Installation of the lake liner needs dry weather, which means the work needs to be carried out over summer; November is regarded as the earliest month to start the work. Due to the extra time required for design, the timeline for activities through to November 2010 has been shortened and overlapped in the current programme. This has created the following issues:

- Lake 2 would be empty and dry before tender prices are known. This carries the risk that tender prices may not be acceptable, or only partially acceptable, and delay the work over summer of 2010/11.
- The contract would not be awarded until late October, giving only a few weeks for mobilisation and obtaining materials (with the Christmas holiday period in-between)
 - Rock for embankment buttressing has historically been difficult to obtain in the quantities required. The time allowed is assessed as inadequate, particularly without incurring a cost penalty
 - The delivery time for the supply of the membrane liner is uncertain as it relies on the overseas source
 - The short mobilisation period provides little opportunity to utilise any contractor innovation in the construction methodology.
- The time allowed to obtain consents should be adequate, but a significant delay would impact on awarding the contract and the construction programme. Issuing a building consent for a large dam is a very new process and is not routine, creating a measure of uncertainty over the timing.

4.2 Discussion on the Programme

The issues and timing conflicts identified above are a consequence of a timeline based on Lake 2 being upgraded over this coming summer and carrying out the buttressing work, the lake lining and ancillary modifications (e.g. spillways and wave wall) in a single construction contract.

The driver behind carrying out Lake 2 upgrade this summer was to provide additional storage as early as possible to increase the security of supply. Whilst security remains an important issue, annual water consumption for the last three years has not risen despite a population increase, and summer demand (both average and peak day) has fallen for the last two years.

Some of the demand reduction is likely to be weather-related, and some due to demand management by the four cities plus a greater awareness of water conservation by consumers. Therefore not having the extra available from the lake upgrade for another 12 months should be easily managed and carries a much smaller risk than proceeding under the current construction programme.

As the owner of a large dam and the regional regulator of large dams, it is appropriate for GWRC to be proactive in meeting the requirements of dam safety legislation. The seismic upgrade should therefore be completed within a reasonable period of time. Completion within approximately 4 years is believed to be a reasonable period given the extent of the work and the low level of risk. The revised construction programme meets that timescale.

The external buttressing of the embankments is general civil engineering work, whilst the internal lining and ancillary work is more specialised. This provides the option of separating the contracts and the timing of the work. It allows the external buttressing to be tendered in 2010 and provide more time to obtain supplies before starting site construction in 2011. Lake 2 lining and ancillary work would then follow over the 2011/12 summer.

4.3 Revised Construction Programme

Although the details of a revised construction programme are still being developed, the timeline for key construction activities are:

Line and raise Lake 2	November 2011 to October 2012
Line and raise Lake 1	November 2012 to October 2013
Embankment buttresses	from March 2011 onwards

4.4 Impact on Capital Expenditure

The revised construction programme will substantially reduce capital expenditure on the project for the 2010/11 and 2011/12 financial years, but increase expenditure over the following two years. Based on the approved scope of work, expenditure is forecast as follows:

Financial Year	Capex Budget (\$million)	Forecast Expenditure (\$million)
2009/10	\$0.8	\$0.73
2010/11	\$7.14	\$3.25
2011/12	\$7.75	\$6.11
2012/13	\$0.09	\$4.96
2013/14	\$0	\$0.73
Total	\$15.78	\$15.78

5. Communication

A media release providing the reasoning behind the revised construction programme would be appropriate.

6. Recommendations

That the Committee:

1. **Receives** the report.
2. **Notes** the content of the report.
3. **Supports** the revised construction programme for raising the water level and seismic upgrade of the Stuart Macaskill Lakes.
4. **Notes**, subject to approval of recommendation 3, that the Council's 2010/11 Annual Plan will incorporate the revised cash flow.

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