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309

Manuherikia Catchment Water Strategy Group

c/- Kate Scott
BTW South Limited
PO Box 302
Cromwell 9342

MT IDA DAM – UPDATED INFORMATION – JUNE 2014

Dear Allan

On May 21 we submitted our geotechnical report for the project (*ref: 1378110270_3000-3080-308-LR-Rev0*) and on May 23 a summary letter for Mt Ida (*ref: 1378110270_3000-3080-308-LR-Rev0*). This letter¹ is in response to your query about providing updated indicative cost information to landowners. The summary follows:

- The Mt Ida reports by Hamilton (2006) and Pickens (2005) estimated a dam at Mt Ida as costing approximately \$10M and a distribution system estimate/upgrade of approximately \$12M. The total cost was therefore of around \$22M. This is understood (*Compass pers.comm.*) to translate to \$11,000 per hectare (assuming 2,000 hectares irrigated).
- Given that eight or nine years has passed since the above reports were completed, the 2005/06 estimates should be updated to take into account inflation. After taking advice from economists (*Compass*), we understand that adding 5 % compounding inflation for eight years is reasonable. This updates the costs to \$15M for the dam and \$17M for the distribution system. The total cost is therefore of around \$32M. This equates to a total cost of approximately \$16,000 per hectare.
- Based on our recent investigations, we believe that the seismic hazard at the proposed dam site is considerable (this was not fully understood in 2005/06). The faults underlying the dam will necessitate considerable additional design challenges that will significantly increase the costs. Ultimately, the faults may not allow for a dam design that meets an acceptable level of risk at the currently proposed location. It is likely that unusual measures will need to be incorporated in the design to allow consenting.
- We also have new information (again, not fully understood in 2005/06) characterising the low strength of clay materials that underlie about half of the dam. These will necessitate greater excavation in this area and consequently increased earthworks costs.
- The design complexity that results from the significant faulting and soft underlying materials are likely to increase the dam build cost by some 50 to 100%. This puts the dam build cost into the range of \$23 - \$30M which translates to a total scheme cost of approximately \$40 - \$47M. This effectively doubles the cost from the 2005/06 estimates i.e. \$20,000 - \$23,500 per hectare.

¹ This letter is subject to the attached limitations.



- As you aware we were seeking accurate survey data at the Mt Ida location because it allows for a reasonable derivation of dam height, depth, width, volume, storage, spillway design and offtake structures which is required for detailed costings.

Based on the above approximations, it appears that, even when viewed optimistically, the cost will be double that which was originally expected. We are therefore seeking guidance from the MCWSG on how to progress.

As outlined in our earlier letter, two potential alternative water sources exist for Mt Ida (pumped water from Falls Dam and/or extending/upgrading the Mt Ida race). Our recommendation would be to pursue these options instead of the currently proposed dam design.

We look forward to your considered response.

Yours sincerely

GOLDER ASSOCIATES (NZ) LIMITED



Richard Little
Water Team Manager

RL/IL/TM/sb

CC: Kate Scott

Attachments: Report Limitations

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