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Newsletter 8 • July 2008

Waimea Water Augmentation Committee (WWAC)



Looking out over the Waimea Plains with Waimea River flowing through.

Message from the Chairman

The Waimea Water Augmentation Committee (WWAC) has recently received an updated progress report from our lead consultants Tonkin and Taylor. Despite some challenging climatic conditions progress has been on target.

The report has refined and confirmed the final dam size determined by meeting all current shortfalls, expected water demands in the future and providing an adequate minimum flow in the lower Waimea River. Various contingencies have been included such as providing for highest water requiring crops and areas outside the immediate supply area. Allowances have also been made for future residential growth. As a result the final dam storage size has been set at 13 million cubic metres.

In addition to providing this update the consultants have been busy with exploratory geological work to determine the exact dam site. From this work it has been concluded that a site further upstream from the original site may be more appropriate and have more suitable materials.

Initial work on various economic and ownership scenarios has also been workshopped between the committee and our consultants. We are now awaiting their recommendations.

In early July 2008 I was part of a WWAC delegation that presented an update of the project to four Government ministers in Wellington. The meeting was facilitated by the Minister of Agriculture.

WWAC is keen to keep the community informed of developments with the project and a public meeting is planned for Wednesday 20 August 2008 at 7.00 pm at the Hope Community Church. We hope to see you there and are happy to answer any questions you may have.

Murray King
Chairman
Waimea Water Augmentation Committee (WWAC)

Progress report on Stage Two investigations

In June 2008 Tonkin and Taylor reported back to WWAC the findings of its geotechnical, water storage and drought security investigations of the site in the Lee Valley under consideration for a dam.

Geotechnical findings

The geotechnical investigations have provided valuable information about the availability of suitable material in the area to build a dam, the make up of foundation rock and the stability of surrounding hillsides.

Dam type

The findings conclude that material available near the site appears to be suitable for a concrete faced rockfill dam (CFRD).

There is no suitable material to build an earthfill embankment dam within an economic distance of the dam site. Suitable material may be available approximately 18km downstream.

Engineering investigations

The right abutment and the foundation rock in the area of the proposed dam have been shown to be of poor quality because of fractures and fissures.

Because of this it would not be well suited for the construction of a concrete faced rockfill dam, and would be more suited to an earthfill embankment dam. This would have significant cost implications with sourcing the earthfill material and any extra foundation stability work.

A landslide on the left bank of the river is likely to need significant remediation work if it is within the dam reservoir area.

While the issues that have surfaced at the original dam site are not insurmountable, they will have significant cost impacts on the project.

Alternative site

As a result of these findings Tonkin and Taylor undertook preliminary investigations on a site about 1km upstream of the proposed site.

Surface mapping indicates that there is higher quality rock and that the area is outside identified faults.

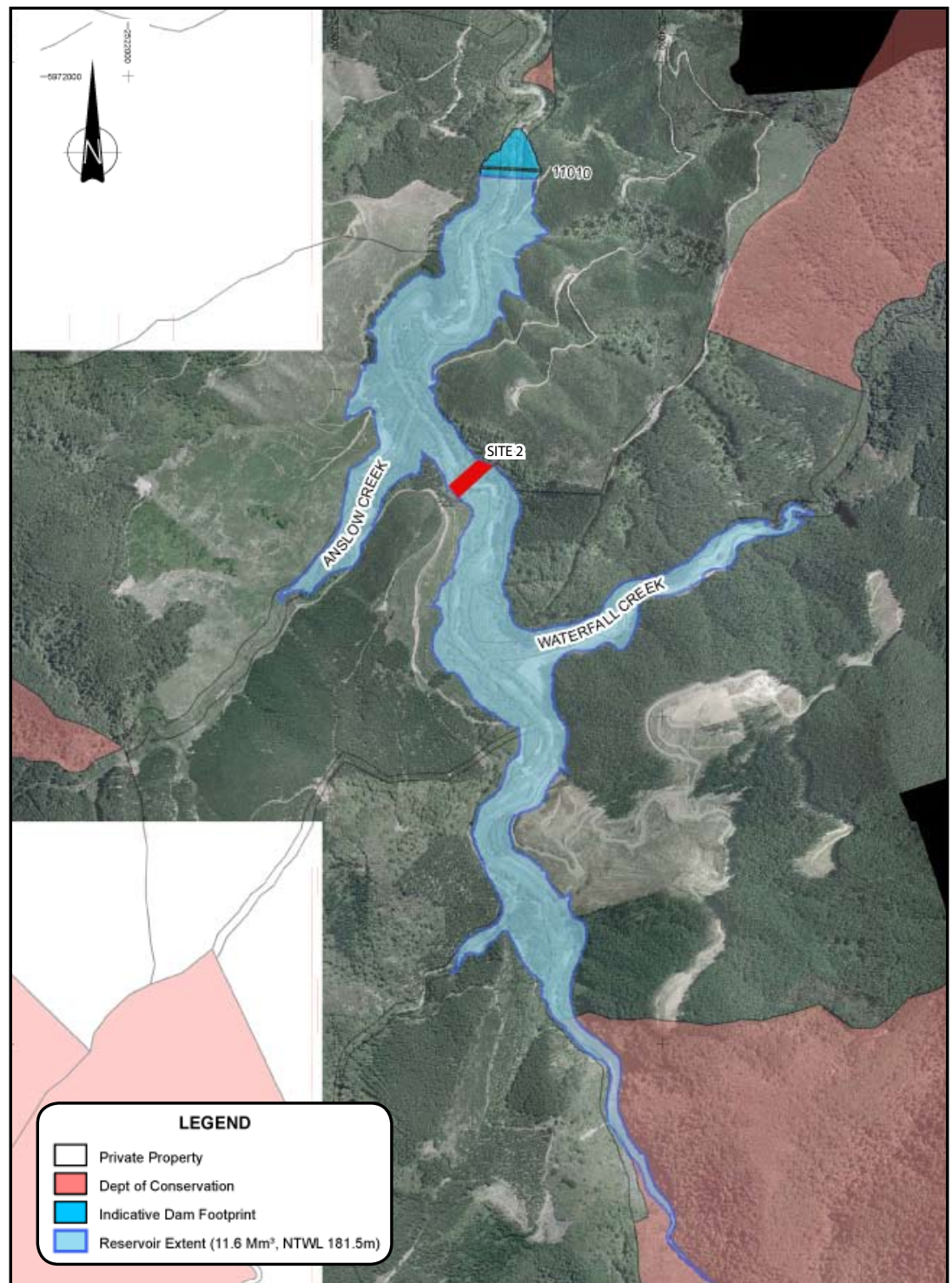
Material for a concrete faced rockfill dam would be available near the site. Again, material for an earthfill embankment dam would need to be imported from outside the valley.

Recommendation

As a result of these findings it was recommended that WWAC consider extending the current Phase 2 Feasibility Study to investigate further the foundation rock at the upstream site. This will involve some additional cost and time, but has the potential to deliver a solution that ultimately has cost savings for the project.

On the consultants' recommendation WWAC has agreed to them conducting further geotechnical investigations upstream.

Water modelling for the dam has been based on flows measured at a site upstream of Waterfall Creek and this would not be affected by a move in the dam's siting.



Water storage volumes and drought security

At a workshop in October 2007 the WWAC Technical Group agreed to work to a 60 year return period drought standard. Phase 1 studies showed that a 13 million m³ capacity storage dam would provide that drought security.



Upper Lee catchment above the cement works.

Current analyses indicate that for the same drought standard a lesser storage capacity of 12 million m³ would be sufficient. The lower storage requirement in comparison with Phase 1 is anticipated to be mainly the result of refinement in demand, distribution and modelling.

Future water demand

There have been some changes to the parameters for water demand from those used in Phase 1 studies:

- The total irrigable area has been increased from 5600 ha to include an additional 250 ha, which provides for some area of Rabbit Island to be irrigated.
- The water requirements have been calculated as if the area is all in pasture, which has a high water demand. The previous water requirements were based on a mixture of pasture, grapes or olives, and apples or kiwifruit, based on soil type.
- Urban and industrial water supply demand is to be based on a 100 year planning horizon, with the annual pattern and peak groundwater take rate provided by Tasman District Council.

The following parameters remain unchanged from Phase 1 studies:

- Future regional need (possibly Nelson City) for a constant surface water take of 22,000 m³/day (254.6 litres per second).
- Minimum residual flow at Appleby Bridge to be retained at 1100 litres per second.
- Dam storage capacity to be based on a 60 year drought return period.
- Minimum residual flow at the base of the dam to be equal to the mean annual flow.
- The proportion of the actual area needing irrigation is 80 percent.

Hydrology update

Council installed a flow recording station on the Lee River upstream of Waterfall Creek and started monitoring flows on 20 April 2007. The catchment area above the recording station is approximately 65.3km². A full year of flow data from the station is available. The total discharge May 2007 to May 2008 was 78.2 million m³.



Looking down Waterfall Creek to the confluence with the Lee River, Anslow Creek is on the top right.

Next Stage

Work will now proceed to finish investigations into the alternative site upstream. The ecological, governance, ownership and funding investigations are continuing as scheduled.



The site upstream now targeted for further investigation.

Ministerial briefing

A WWAC delegation, including Chairman Murray King, Deputy Mayor Tim King, Project Manager Joseph Thomas, Neil Deans from Fish and Game and iwi representative Barney Thomas, presented a briefing paper to the Ministers of Agriculture, Economic Development, Conservation and Crown Land at Parliament on 7 July 2008. DOC representative Martin Heine was also there to advise the Minister of Conservation on behalf of the Nelson Marlborough Regional Conservancy. The aim was to inform the ministers of progress to date on the project and to get support and guidance for the acquisition of crown forest and DOC land in the proposed dam area. This was a follow up visit to a visit in November 2006. Once again the project was very positively received and endorsed by the ministers as an example of a true community project solving a community problem. The ministers have indicated their intention to support it through the next stages.

Public Meeting

A public meeting to discuss the Lee Dam project will be held at the Hope Community Church, Ranzau Road, Hope on Wednesday 20 August at 7.00 pm. All welcome.



The Waimea Plains around Brightwater.



This project is also supported by:

- Waimea Plains water users and landowners
- Fish and Game New Zealand, Nelson Marlborough Region.

In kind support is received from:

- Iwi
- Department of Conservation

WWAC Members

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WWAC members are available to answer your questions.

Lee/Wairoa Liaison Group Volunteers

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