

# water

• for the

# waimea basin

Newsletter 16 • October 2012

## Waimea Water Augmentation Committee (WWAC)

### Message from the Chairman

Last summer was the first since the formation of WWAC (9 years) that we averted any water rationing on the Waimea Plains. In fact, it was hardly a summer at all.

Given very wet conditions this spring it's hard to imagine irrigation, let alone rationing, yet these same conditions were the precursor to the 2000/2001 drought.

While things may appear to have been quiet, work on the project continues, with detailed design, governance and ownership structures and of course funding models. The Committee has been working diligently and has taken on board the ideas shared through the consultation process. Through that we established that essentially everyone agrees with the need for this project, but funding is an issue for all of us. As I have said before, the Committee is acutely aware of the financial pressure people are experiencing and a lot of work is going into refining the funding model to come up with a palatable outcome. This work needs to happen in tandem with the detailed design work currently under way.

Our ongoing discussions with Nelson City Council leave us confident they will still come to the party by way of the Annual Plan process. Nelson can see the regional benefits this project brings, both economic, environmental and recreational. Their financial contribution is not essential until the construction process starts, which we anticipate will be 2014, however the Committee continues to have their input via the NCC Deputy Mayor and Principal Advisor Utilities.

It is important that we remember that we are effectively operating

under a moratorium to enable us to find a solution to the water shortage. The status quo cannot continue.

I'm also pleased to report that Committee member Neil Deans, from Fish and Game, has been heavily involved in the Land and Water Forum and has been able to transfer some of his learnings from the WWAC project to that forum. (Land and Water Forum is a national pan industry, multi stakeholder group initiated by the Minister for the Environment to assess and make recommendation on water allocation and policy).

The next stage in the project is to work through the Council consenting process and further the discussions with landowners over land acquisition.

**Murray King, Chairman**  
**Waimea Water Augmentation Committee**



*Neil Deans presents to environmental groups*

### Nelson City Council Still Supporting Dam Project

Despite not making the cut for NCC's LTP, the council has given an assurance that it is keen to continue discussions with the Waimea Water Augmentation Committee to develop the Waimea Community Dam.

"The proposed dam is a regionally important project and Council believes there is an economic benefit for Nelson ratepayers even though the location is in Tasman."

Council is also keen to know the funding split and the level of

support from water users in Tasman District.

NCC is represented on the WWAC committee by Deputy Mayor Ali Boswijk and Principal Advisor Utilities Phil Ruffell.

To date Nelson City has contributed a total of \$413,000 (excluding GST) since 2007/2008, of which \$200,000 was for the feasibility studies in 2007/08 - 2009/10 years, and \$213,000 was for the detail design work which started in the 2010/11 year and is to be completed in the 2012/13 year.

# Site Investigations at the Dam – Tonkin & Taylor – Project Engineering

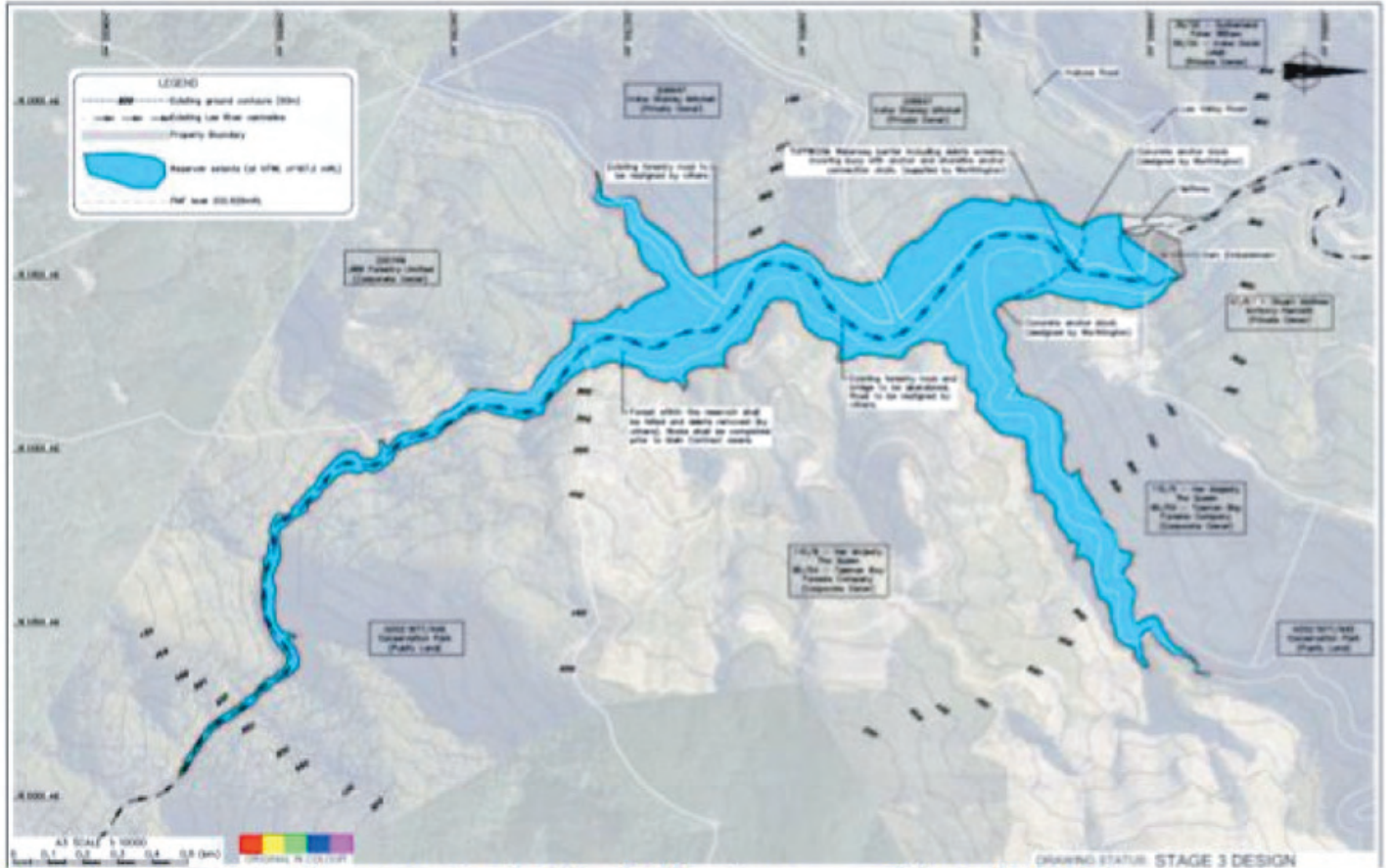


Figure 1: Plan showing the approximate extent of the dam reservoir (shaded blue)



Figure 2: Fording the river and drilling to check dam foundation conditions and carry out water pressure testing

The site investigations are currently entering their final round of reviews before issuing a report for the Committee.

Investigations at the dam site to date include topographical surveys and geotechnical investigations. Topographical information has been collected using traditional survey methods as well as LiDAR (Light Detection And Ranging). LiDAR is a survey method where a laser is projected from an airplane and the time taken for the laser to return is used to calculate the elevation of the ground. This was used at the Lee Valley dam site and reservoir to build a 3D computer model of the site and determine the ground contours. This in turn has been used as the basis for calculating the reservoir storage and extent and also the volume of the dam embankment.

Geotechnical investigations carried out at the dam site are now entering the final stages. To date these investigations include geological mapping by a team of engineering geologists, drilling, test pitting, geophysical investigations and laboratory testing of rock and gravel materials found at the site.

The investigations have involved:

- Excavating trenches around the dam site to assess the depth to hard rock.
- Drilling holes between 20 and 60m long and water pressure testing the rock (Figure 2).
- Excavating over 25 test pits in the alluvial gravel to assess the quantity available for use in the dam and also to make concrete.
- Two seismic refraction lines.
- Compaction trials to assess how well the rock in the dam will perform (Figure 3).
- Laboratory testing of the rock to assess its properties such as its permeability, grading, density and chemical composition.





Figure 3: Excavation of trenches on site and compaction trials

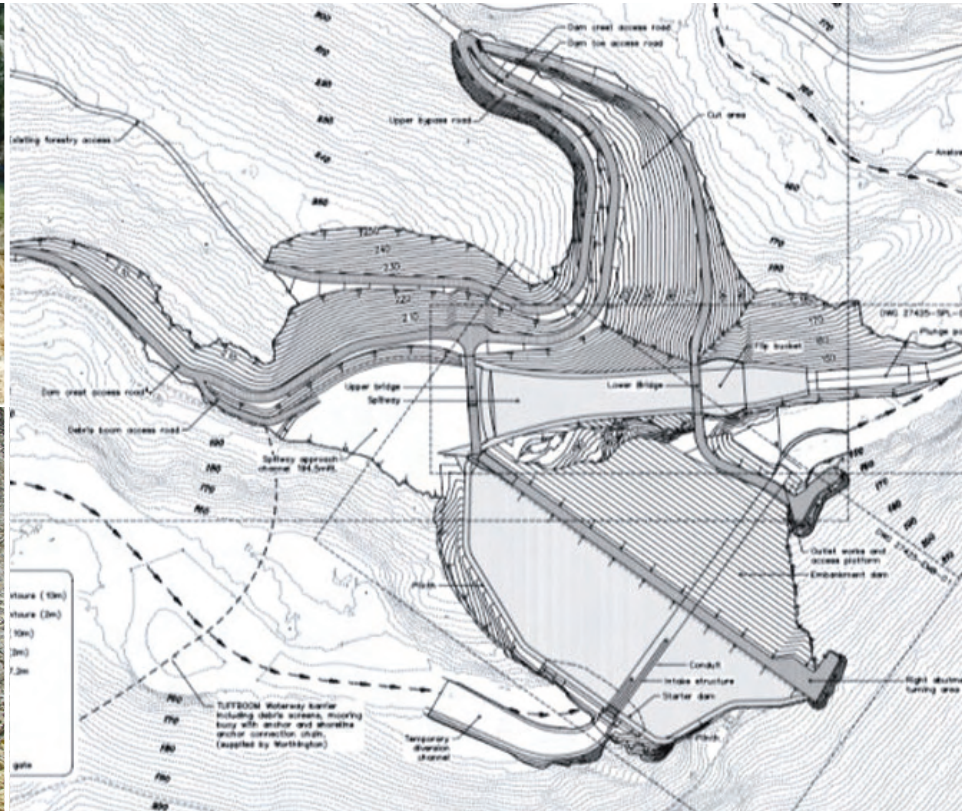


Figure 4: Plan showing the current draft dam design arrangements (subject to review)

The water pressure testing provides guidance on the possibility of leakage in rock fractures and whether those fractures need to be sealed with grout (concrete slurry).

A seismic refraction survey was undertaken at the dam site. This survey involves laying a line of geophones along the ground surface and then detonating a small explosive charge at one end of the line. The geophones measure the time taken for the shockwave from the explosive to travel through the ground below. The varying time provides an indication of the rock quality below ground level. Pits have been excavated along the seismic lines to calibrate the results of the seismic refraction lines. Two seismic refraction lines were carried out; one line was carried out along the spillway alignment, and the other along the left hand side of the plinth.

The compaction trials confirm that approximately half to two thirds of the rock that will be excavated from the spillway at the Lee dam is suitable for use as rockfill to build the dam embankment. The remainder of the rock is too weathered to be used and will be placed as fill downstream of the dam - probably adjacent to Anslow Creek.

### Detailed design

The detailed design of the dam is almost 80% complete and is undergoing review. Once the review is complete the drawings and design report will be issued to the Committee. The dam arrangements are shown in Figures 4 and 5. The dam when complete will be approximately 52m high at the river's deepest point. The proposed spillway is designed for a flow more than three times that normally passing over Huka Falls on the Waikato River. Figure 1 shows the extent of the reservoir (shaded blue).

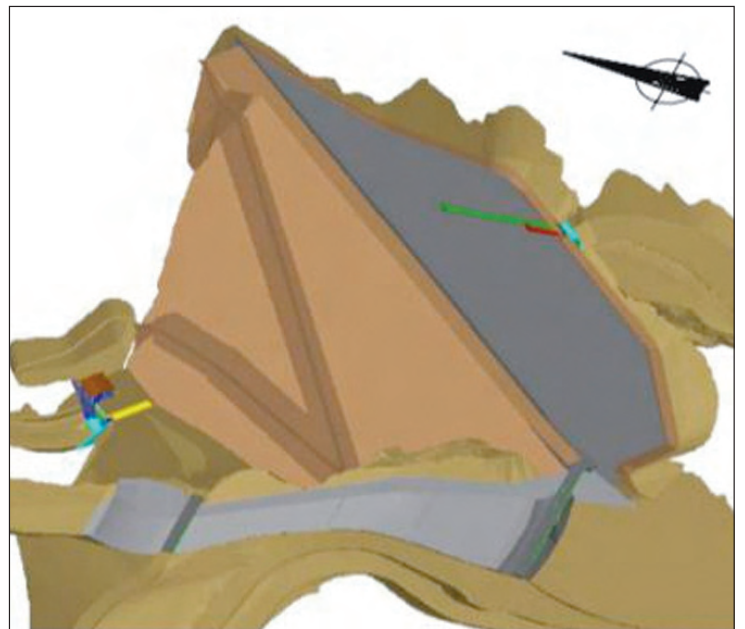


Figure 5: Image showing the completed dam. The Spillway is shown in grey at the bottom of the image.



# Environmental and Recreational Interest Groups

WWAC members met with representatives of environmental and recreational interest groups on 31 July to give an update on the Lee Dam project.

Those present raised questions about earthquake risk, in light of recent events in New Zealand. They were advised that the earthquake risk modelling for the dam was done after the February 2011 earthquake in Christchurch, including a site-specific seismic assessment.

The environmental benefits of flow in the river, re-vegetation work around the dam site, predator control and improved access to the dam site were discussed. Re-instatement of the original riverside walking track was identified as the most likely access option.

Some present were surprised to learn that no new water permits had been issued on the Waimea Plains since 1994.



Joseph Thomas presents to environmental groups

View reports and progress on the project on the new WWAC website [www.waimeacomunitydam.co.nz](http://www.waimeacomunitydam.co.nz) or on the Tasman District Council website [www.tasman.govt.nz/link/leedam](http://www.tasman.govt.nz/link/leedam)

If you would like to receive your future WWAC newsletters via email please notify Committee Secretary Valerie Gribble - [valerie.gribble@tasman.govt.nz](mailto:valerie.gribble@tasman.govt.nz).

### This project is funded by:

- Tasman District Council
- Nelson City Council
- Waimea Plains water users and landowners
- Community Irrigation Fund
- Fish and Game New Zealand Nelson Marlborough Region

### In kind support is received from:

- Iwi
- Department of Conservation

Keep up to date by searching for "Lee Dam"



## WWAC Members

Murray King (Chairman, Lower Confined Aquifer)	03 544 8465
Dennis Cassidy (Delta Zone)	03 544 2852
Kit Maling (Waimea East Irrigation Co)	03 544 0536
Stephen Sutton (Waimea West)	03 544 4026
David Easton (Upper Confined Aquifer)	03 526 6854
Julian Raine (Golden Hills/Hope Aquifer)	03 547 5338
Barney Thomas (Nelson iwi)	03 547 4934
Deputy Mayor Tim King (TDC)	03 542 3849
Peter Thomson (TDC)	03 543 8440
Neil Deans (Fish and Game)	03 544 6382
Jo Gould (DOC)	03 546 3132
Martin Rodd (DOC)	03 528 1429
Phil Ruffell (NCC)	03 546 0359
Deputy Mayor Ali Boswijk (NCC)	027 482 1462

**WWAC members are available to answer your questions.**

## Lee/Wairoa Liaison Group

Terry Trembath (Lee Valley)	03 542 3387
Allen and Maree Parsons (Wairoa)	03 541 9637
Wayne Neal (Lee Valley)	03 542 4424
Tony Chivers (Wairoa)	03 541 8810
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