May-June Update

Central Plains Water was set up by Christchurch City and Selwyn District Councils in March 2000 to investigate ways to improve the security and prosperity of the Central Canterbury region through water management schemes that enhance ecological and recreational values while providing opportunity for agricultural and horticultural diversity.

Further information can be obtained from the Central Plains Water website http://www.cpw.org.nz/
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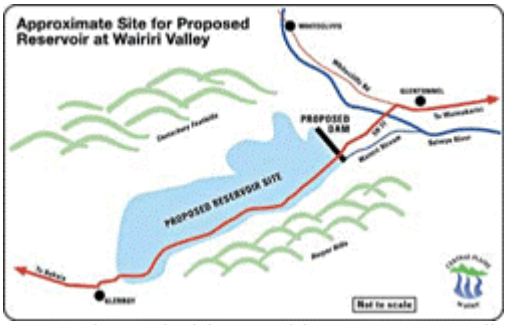
Wairiri Valley site selected for further study



Wairiri Valley has been identified as the best site for a 1,000-hectare storage reservoir to serve a large irrigation scheme for the central Canterbury Plains.
This site scored best from a technical point of view and also ranked well against alternatives considered by community representatives involved in the selection process.

Based on initial studies, Wairiri appears to have a sound geological base, gives options for the transportation of water from the Rakaia River or Lake Coleridge and has a very small natural catchment, minimising the risk of the reservoir overflowing during heavy rain.
Construction of a scheme is currently estimated at about $100 million. Detailed work on options for raising this money from stakeholders and others will be undertaken later this year.

This is just one of the many questions to be answered before a scheme could go ahead. Glentunnel, Coalgate, Whitecliffs and surrounding communities have identified issues in relation to a large body of water sitting in their neighbourhood, Wairiri Valley landowners will require compensation, and many geological, environmental and cultural considerations will need thorough investigation.
A social and economic impact assessment carried out by Central Plains Water last year concluded a large water enhancement scheme could result in up to 4,000 jobs and be worth $600 million a year to Canterbury.
Other locations considered as potential reservoir sites were in the Upper Selwyn River at Whitecliffs Valley and at High Peak Station.

Community issues raised

'Will it attract boaties and windsurfers?' 'What happens when it is emptied during the summer?' 'How much are you prepared to pay to inundate my farm?' 'What if it bursts or overflows and causes a flood?'

Recent meetings in Glentunnel, Whitecliffs and Glenroy raised these and other questions about what a water storage facility would mean to neighbours if the plans proposed by Central Plains Water go ahead.
Held leading up to the decision to proceed with detailed investigations into the Wairiri Valley site, the meetings were attended by a total of almost 200 people, all keen to find out how a reservoir to store water for irrigation might effect their lifestyles.

It is quite clear that there will be some effects that may be positive for some people, and some that might be negative to others. Central Plains Water has stated from the beginning that if there is a general will to go ahead with a scheme, it must seek solutions that minimise, avoid or mitigate the negatives.

More detailed answers to specific questions such as recreational use of a reservoir, impacts on the Selwyn River, the possible re-routing of the state highway, fluctuating water levels and stock access to the water are expected by the end of the year. In the meantime, Central Plains Water intends to work closely with residents of the communities in and around the identified site to find ways of addressing the concerns that have been expressed.

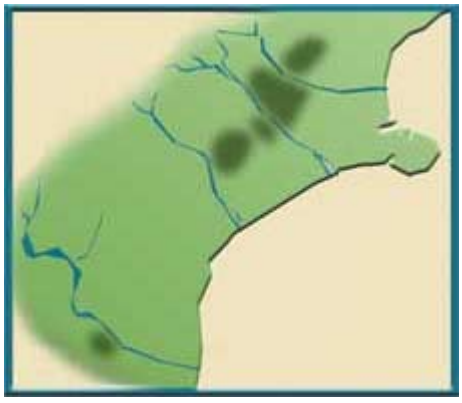
Water Storage the way to overcome drought

Through this summer, much of eastern New Zealand, including the Central Plains area, has suffered near-drought conditions, or worse. The use of surface water for irrigation has been restricted from the Waiau to the Waitaki – at precisely the time when it is most needed to maintain production.
The rationale behind proposals announced by Central Plains Water late last year is to overcome this problem – and to provide water for irrigation when it is most needed.

'Harvesting' a fraction of the abundant quantities of water that flow to sea from the Waimakariri and Rakaia Rivers during the winter and spring is the key to these proposals. The water would then be stored in a reservoir to be created in the foothills for release when most needed to irrigate Central Canterbury's rich – but dry – soils.
A water storage facility – which might also have potential for recreational use – is the key to ensuring the reliability of a large-scale environmentally sustainable community irrigation scheme. Taking water for storage when available will enable irrigation to continue when minimum river flows demand restrictions be placed on surface water irrigation during dry summers like the one just passed.

Central Plains Water's proposed community irrigation scheme could provide water to 84,000 hectares on the upper plains between the Rakaia and the Waimakariri. The proposals assume a water requirement of 680 million cubic metres through an irrigation season. Based on the driest summers over the past 25 years, calculations are that a reservoir with a capacity for 250 million cubic metres would be required to reliably irrigate this area.

Water to flow south of the Rakaia…



Barrhill Chertsey Irrigation Scheme, aiming to provide water to up to 40,000 hectares of land on the south bank of the Rakaia River, received resource consent from Environment Canterbury recently.

Promoter of the scheme, the Barrhill Chertsey Irrigation Company, is now consulting local farmers to discuss the next steps, which will include detailed engineering design and financing options.

Meeting with potential objectors to the scheme very early in the piece and working with them to resolve all identified issues in advance – well before any substantive scheme design has been put on paper – meant there were no objections at the hearing. This is a relatively new approach to planning large community projects, and one Central Plains Water is also following. Such an approach follows the spirit of the Resource Management Act.

Any calculations Central Plains Water has done for the use of Rakaia River water in its proposed scheme have taken into account the consents that Barrhill Chertsey has now been granted.
The Barrhill Chertsey scheme would take 17 cubic metres of water per second from the river. A reservoir concept, similar to that Central Plains Water has proposed, is one of the options that may be considered to improve the reliability of the scheme.

Up to 1,000 jobs are expected to be created as a result of the Barrhill Chertsey scheme, adding $140 million per annum to the Canterbury economy. This is in addition to the 4,000 jobs and $600 million annual economic benefit projected as a result of the Central Plains scheme.

… with proposals for more under consideration…

Meanwhile, the rest of the Mid Canterbury district could also benefit if proposals for a much larger water enhancement scheme go ahead.

Prepared by consultants Lincoln Environmental in a pre-feasibility study for the Ashburton Community Water Trust, the proposals identify opportunities that would draw water at times of higher flows from high country tributaries in the Rangitata, Ashburton and Rakaia catchments. This water would be channelled into one or more storage reservoirs, with potential sites identified in the Stour River valley and at Blowing Point in the Ashburton Gorge.

In parallel to the Central Plains proposals, water would then be released at times of low river levels to enhance flows in the Ashburton River and for irrigation. This would extend irrigation to some 153,000 hectares of Mid Canterbury farmland, of which about 70,000 hectares is already irrigated.
The Ashburton Community Water Trust is seeking the views of Mid Canterbury people on the study before deciding on its next steps.

… and still more in prospect further south

State-owned power generator Meridian Energy is investigating a project that would include a large-scale irrigation scheme from the Lower Waitaki River.
Meridian's preliminary investigations show potential for nearly 39,000 hectares of new irrigation as a consequence of a 62 km canal on the south bank of the river. The canal would be principally for hydro generation, incorporating six power stations.

According to Meridian, no dams or storage lakes would be required in what is described as a 'low-impact' proposal that will leave significant flows in the Lower Waitaki River, preserving the existing river ecosystems and meeting the needs of other river users.
Figures released by Meridian suggest that irrigating 39,000 hectares would add 1,800 full-time jobs and $145 million of value to the South Canterbury-North Otago region. The company estimates the whole project will cost about $970 million.

Access to water spells land use change in Waimakariri

Waimakariri Irrigation Ltd is nearing the end of its second season. The scheme uses 8.5 cubic metres per second of water from the Waimakariri River to irrigate approximately 14,000 hectares between the Waimakariri and the Eyre rivers in Waimakariri District.

In the 18 months since water became available, a number of significant changes have taken place. These include:

- Conversion of dryland farms to intensive pastoral farming, specifically dairying, including dairy herds among the largest in the country.
- Growth of specialty crops with specific properties for seed multiplication and supply to overseas markets, requiring tight specifications only realistically achievable with a reliable water supply.
- Associated with these developments is increased employment and new families moving into the district.
- In addition, on the edge of the Waimakariri Irrigation scheme area is one of Canterbury's largest horticultural enterprises, supplying six days per week to all South Island wholesale markets, exporting onions, cabbages and carrots to Japan and growing the cabbages that end up in KFC's coleslaw.

All of these developments have only been made possible as a result of access to a dependable supply of water for irrigation.

Groundwater issues subject of study

To help work out what impact a community water enhancement scheme might have on groundwater, Central Plains Water, in partnership with Environment Canterbury and the Institute of Geological and Nuclear Sciences, is carrying out a hydrological study of the whole region.
This study will use a model covering all the aquifers and other underground water systems from the Ashley to the Ashburton Rivers.

The first version of this model is completed. It is be able to predict where water will go after it falls on the land.
For example, if it were built, the scheme would apply up to 65 cubic metres of water per second to the 84,000 hectare identified area bounded by the foothills, the Rakaia and Waimakariri rivers and a line running approximately from Rakaia to Aylesbury. The questions that concern many in relation to the proposals are 'Will

this increase the risk of flooding in areas around Leeston and Southbridge?' and 'Will it be easier or more difficult to draw well water in areas like Dunsandel, Rolleston and West Melton?'

A groundwater model will provide much more reliable answers to these questions than have previously been available. With further refinement, by mid to late 2002 the model is expected to be able to accurately predict impacts on groundwater levels and spring flows at specific locations.

Feasibility work scheduled to continue

Feasibility work is set to continue throughout this year on Central Plains Water's proposals for water enhancement in Central Canterbury and will be completed in December
Following the recent selection of Wairiri Valley as the best site for a storage reservoir, detailed investigation of the site will be undertaken, including

- topographic survey to confirm availability of the required storage capacity.
- a geographical investigation to determine suitability for dam construction.

This will be followed by further scrutiny to answer the following questions.

- Is it bankable?
- Is it affordable?
- Are the effects ok?

Central Plains Water's technical team will carry out these investigations working closely with the consultative working party of community representatives from various localities, and interest groups with a stake in the issues, including potential water users.
Assuming this process can achieve answers acceptable to all stakeholders, the next stage will be to seek resource consent, which is anticipated to occur next year.

Consultation programme highlights issues

Central Plains Water's programme of public consultation will continue – in parallel with the technical work that is being carried out into the feasibility of a water enhancement scheme.
The focus of the consultation programme is a consultative working party, made up of representatives from a wide range of different community and interest groups. Over the next few months, this working party will meet regularly to help test and define the characteristics and viability of the developing proposals – and to compare these to a future with no community water management scheme.

Sustainability is one of the concepts discussed in this forum. Sustainability has been defined as: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Three aspects underpinning sustainability are environmental protection, economic growth and social equity. These are the guiding principles of the Resource Management Act and are what Central Plains Water must demonstrate if it is to succeed.
Issues likely to be discussed by Central Plains Water's consultative working party over the next few months include:
Establishing a clear understanding of the total resource under consideration – both surface water and groundwater.
Looking at the effects of taking the quantity of water required from the identified sources.
Examining the environmental impacts of irrigation on the Central Canterbury Plains at the scale proposed.

Angling body outlines priorities

Fish and Game New Zealand has been an active stakeholder in the ongoing development of Central Plains Water's proposals.
While Fish and Game does not have a position on the proposals presently under consideration, it has indicated that its main environmental bottom-lines for a scheme are:

- No fish kills
- Effective screening of water takes – including appropriate screen and mesh sizes, positioning, approach velocity and suitable escape routes

- Maintenance of the life-supporting capacity of all affected waterways
- Avoiding environmental damage that may be caused by cumulative and secondary impacts of the scheme.

Fish and Game has also made it clear that is unlikely to support a challenge to the National Water Conservation Order on the Rakaia River.

Project now on line

Central Plains Water is now on line.
The website, at http://www.cpw.org.nz/ covers background to the work that is being carried out into the feasibility of water enhancement for the Central Plains.
It will be regularly updated as the project progresses.