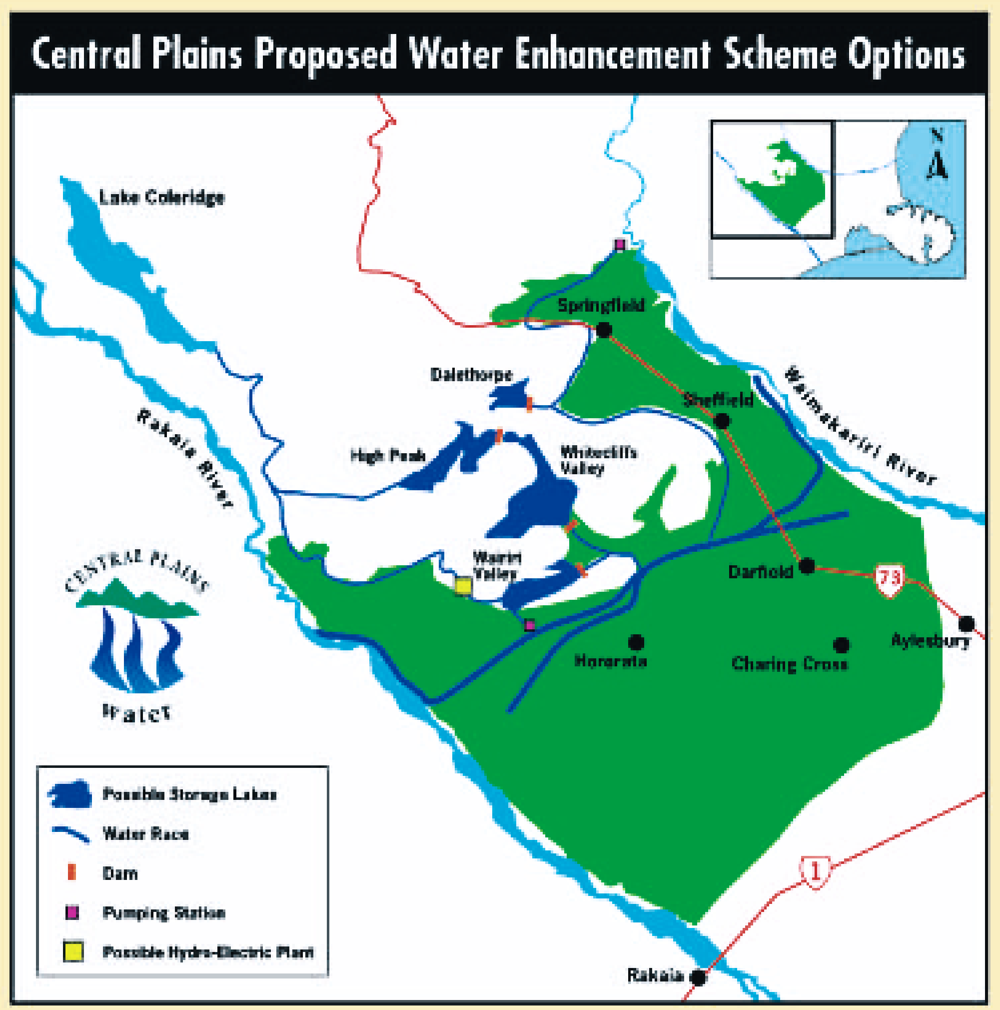
water update

Large area would be served

If the work of Central Plains Water goes ahead, and a scheme is ultimately developed, the project's technical feasibility study suggests an area of between 80,000 and 90,000 hectares on the upper plains will receive water.

Bounded by the foothills to the west and a line approximately running through West Melton, Aylesbury and Rakaia to the east, the study says it should be feasible to deliver water to this area at a price property owners will find reasonable. Analysis of soil types, availability of groundwater and relative distance from the rivers are the reasons that this area has been identified as most likely to benefit from a community irrigation scheme. Initial estimates are that the cost of this water will be less than $200 per hectare per annum – considerably lower than the cost of irrigating from groundwater to the same farms.

Irrigation to the east, lower down the plains, should also be easier, with some groundwater recharge anticipated as a consequence of the community scheme.



Central Plains Proposed Water Enhancement Scheme Options

How to deliver

To effectively supply the identified area, using modern irrigation and land use practices, would require a maximum of 680,000,000 cubic metres of water in the driest year. Lake Coleridge, the Rakaia River and the Waimakariri river are all possible sources of this much water. Each source has a variety of restrictions, meaning that a combination of two or three sources might lead to a more reliable and sustainable scheme. These restrictions have their greatest impact in summer, when demand would be at its highest.

A storage lake would ensure that water could be taken during peak flows to be used later when demand for irrigation rises. To give the scheme the reliability water users would demand, this lake would need to capable of holding 250,000,000 cubic metres of water – or equivalent to the top six metres of Lake Coleridge.

Three broad solutions have been identified as suitable sites for such a lake, fed through a variety of options:

- **Wairiri Valley**

- **The Upper Selwyn River** – either in Whitecliff's Valley just below the Selwyn Gorge, or on High Peak Station further up the river;

- **Lake Coleridge itself.**

A number of issues are associated with the identified water sources and the possible storage sites. These include their location relative to the available water and the size and location of races required to transport water from the sources to the storage; the opportunity to use the gradient down which these races would pass for hydro-generation; the reverse issue of having to pump water from some of the sources to some of the identified storage sites; the productive capacity and/or natural features of the land which would be inundated if a lake were built; the varying levels of sediment in the three sources; and the fact that Lake Coleridge is presently a hydro-generation lake, the rights to which are owned by Trust Power. Initial estimates of the total cost to design and construct each option varies slightly, but is approximately $100 million.

Personal view

"Christchurch City Council and Selwyn District Council are to be congratulated on re-visiting the possibility of irrigating the land between the Waimakariri and Rakaia rivers.

The benefits to people and the economy from such a scheme would be significant. For our area to prosper it is essential that the scheme proceed."

Pat Morrison, Sheffield

water

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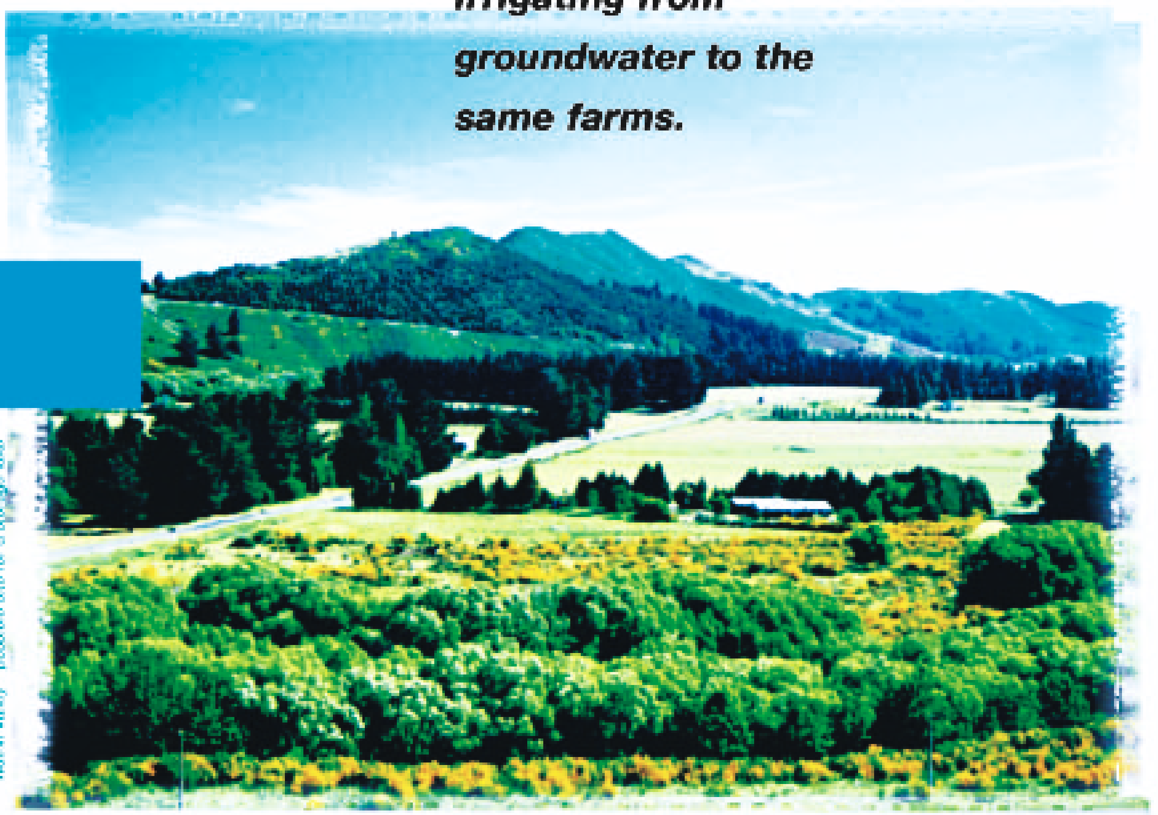
Possible separate scheme

Through the consultation process it has been noted that none of these storage options has the capacity to provide water to the Springfield-Russell's Flat area, where irrigation could bring significant benefits - particularly considering the very fertile soils in this locality. A separate scheme to accommodate the estimated 6,000 hectares of demand in this area has been scoped, drawing water from above the Waimakariri Gorge to a storage lake in the hills above Dalethorpe.



Wairiri Valley - possible site for a storage lake

Environmental features

Central Plains Water is not just about providing water for irrigation. Through a series of public meetings and in discussions held by the Consultative Working Party, a number of other environmental and recreational features have been identified as possible to achieve as part of a water enhancement project.

As the project continues into 2001, these will be tested and developed to see how they could shape the overall scheme.

Some of the concepts include: the augmentation of the Selwyn, Hororata and Hawkins rivers, the possible rehabilitation of Te Waihora-Lake Ellesmere, a trust to protect natural features that might otherwise be threatened by changing land use, safeguarding groundwater, improving drainage systems on the lower plains and protecting peat swamps.

Another objective is to protect the Rakaia and Waimakariri River flows - particularly their instream and braided river values.