

# Canterbury Water Management Strategy

Bryan Jenkins, John Friend & Gerald Midgley

## The context

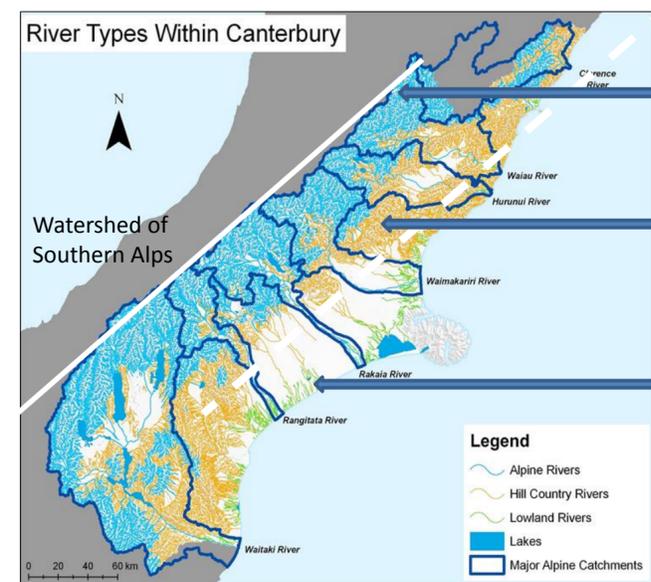
### CANTERBURY

Largest region in New Zealand: 4.54 million hectares  
Population more than 500,000  
Situated on dry east coast of the South Island  
Environment and Economy dependent on water

- 58% of NZ's allocated water
- 70% of NZ's irrigated land
- 65% of NZ's hydro storage
- High quality untreated water for Christchurch
- Braided rivers, high country and coastal lakes and lowland streams
- Driest region in terms of potential evaporation deficit



### RIVER SYSTEMS IN CANTERBURY REGION



Alpine Rivers with headwaters in the Southern Alps

Hill Country Rivers with headwaters in the foothills of the Southern Alps

Lowland Rivers which are spring-fed from groundwater on the Canterbury Plains

### NATURAL RESOURCE MANAGEMENT IN NZ

- Regional Councils formed in 1989 with geographical boundaries based on catchments
- Regulatory body for resource management with elected council
- Resource Management Act (1991): effects-based management to promote sustainable management
- Land use responsibilities with Districts and Cities
- Ministry for the Environment established with powers to produce national policies and standards
- Appeals to the Environment Court with ability to review technical merit

## Afterwards

### THE FOUR SELECTED STRATEGIC ORIENTATIONS

Immediately after the workshop, the members of the CWMS management team refined the wording of the four selected strategic orientations to reflect the shared understanding during the course of the workshop

- Continuing to improve the current approach**
- Advance environmental protection before developing significant infrastructure**
- Reconfigure consents and infrastructure for protection and repair of the environment, improved reliability of supply and for development**
- Advance infrastructure with strong requirements for environmental repair and protection**

### EVOLUTION OF STRATEGIC OPTIONS

There was an initial stand-off between:

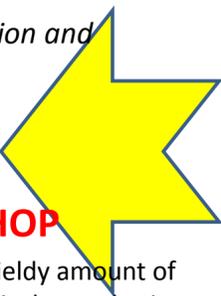
- storage is the answer to water availability problems in Canterbury
- no storage because land use intensification impairs water quality

Shift in position of opposing views to accommodate views of others:

- pro-storage became Option D: *advance infrastructure with strong requirements for environmental repair and protection*
- anti-storage became Option B: *advance environmental protection before developing significant infrastructure*

New option from identifying shortcomings of current practices:

- Option C: *reconfigure consents and infrastructure for protection and repair of the environment, improved reliability of supply and for development*



### AFTER THE STRATEGIC OPTIONS IDENTIFICATION

- Public consultation on Strategic Options
  - little support for A; B and D evenly divided; C direct support and dominant second choice
- Sustainability evaluation of Strategic Options
  - A unsustainable; B met environmental but not economic criteria; D met economic but not environmental criteria; C met all sustainability criteria
- Strategic Framework document developed as commitment package
  - set of proposed immediate actions (e.g. nutrient limits)
  - set of explorations to deal with uncertainty areas (e.g. sustainable methods of storage)
  - set of understandings about how deferred choices were to be addressed (i.e. region and zone implementation programmes through community-led region and zone committees)

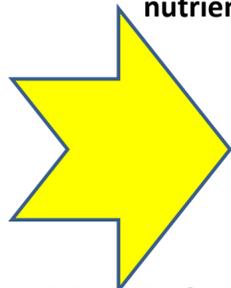
### A FACILITATOR'S REFLECTIONS ON THIS WORKSHOP

- a brief yet pivotal event in a long-running programme in which an unwieldy amount of information had been generated through technical investigations and political consultation
- steering group members represented sharply opposing interests, yet they had already spent much time listening to and recognising the interests of the others; this appeared to take the edge off the argumentation in the workshop
- prior formulation of policy areas and tentative strategic directions by the CWMS management team had anticipated the workshop approach
- sensitivity to the need to accept *Tangata Whenua* as a parallel holistic framework of evaluation, rather than reflecting the interests of one indigenous stakeholder group
- provided a non-confrontational space for evaluation by testing the compatibility between options within a set of specific policy areas
- a set of broader options enabled reference to be made to earlier use of the strategic choice approach in the UK to the design of county land-use *structure plans*.

# The challenge

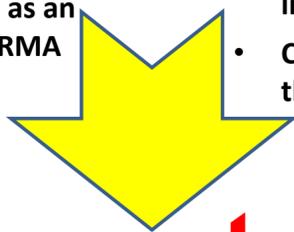
## SUSTAINABILITY LIMITS OF WATER RESOURCES REACHED

- Rapid increase in demand for water (highest in OECD)
  - expansion of dairying
- Water Availability
  - run-of-river takes on restriction
  - groundwater zones at allocation limits
- Cumulative Effects of Water Use
  - water quality impacts from land use intensification
  - ecological health effects from diminished flows, increased nutrients and sediment



## PARADIGM SHIFT NEEDED IN WATER MANAGEMENT

- Water allocation and availability which addresses sustainability limits and climate variability
- Management of cumulative effects of water takes and land use intensification
- Shift from effects-based management of individual consents to integrated management based on water management zones
- Need seen for a strategic, collaborative systems approach as an alternative to project-based, adversarial approach under RMA



# Problem structuring

## IMPACTS OF REDUCED FLOWS



Figure 3.26 Filamentous algae and thick mats in the Pareora River at Holme Station Bridge after prolonged periods of low flows (March 2003)

## INITIAL COLLABORATIVE SUPPORT TOOLS

- Use of *OpenStrategy* framework to document water uses and benefits from facilitated stakeholder workshops
- Identification of 10 principles based on stakeholder values to underpin the water management strategy
- Summarised the ranges of uses and benefits of multiple stakeholders
- *OpenStrategy* framework designed to develop an overall strategy by linking projects and their results to achieve desired uses and benefits
- Complexity of Canterbury water management meant there were thousands of linkages to be considered

## ADOPTION OF STRATEGIC CHOICE APPROACH

- Needed a different approach to development of strategic options
- Adoption of *Strategic Choice Approach* because it was suited to environments where inter-organisational collaboration is essential to service delivery
- Method of problem structuring rather than problem solving
- *Strategic Choice Approach* is designed for finding solutions to complex problems where there is:
  - incomplete information
  - many interconnecting issues
  - uncertainties about possible effects of options
  - multiple interests with conflicting objectives

## STRATEGIC CHOICE WORKSHOP

23-24 Feb 2009 at the Holiday Inn on Avon, Christchurch

### Before the workshop:

The CWMS management team selected seven key *policy areas* from a wider set, and identified a range of feasible options with each. The selected policy areas were:

- *Environmental flows?*
- *Water quality?*
- *Land use?*
- *Water allocation?*
- *Demand management?*
- *Infrastructure?*
- *Biodiversity?*

A broader and more tentative set of four [or possibly five] contrasting *strategic orientations* was also identified as a basis for assessment of the policy options during the workshop.

## PARTICIPANTS IN STRATEGIC CHOICE WORKSHOP



Background: flipchart grid showing workshop outcomes in terms of compatibility of options in seven key policy areas [columns] with a set of 4/5 tentative strategic orientations [rows] .

3<sup>rd</sup> left: Bryan Jenkins; 5<sup>th</sup> left John Friend, facilitator; 3<sup>rd</sup> right: Bede O'Malley, chair of CWMS steering group; other members of steering group representing different stakeholder interests e.g. water rights, nature conservation, commerce, irrigation, health, government.

## CWMS MANAGEMENT TEAM PLAN PUBLIC CONSULTATION



Leading members of the CWMS management team discuss their schedule for taking the results shown on the wall to the left through into their forward public consultation programme.