

Manuherikia Valley Water



A Community Approach to Water Use and Management

Community Proposition

For Manuherikia Catchment Water Strategy Group

20 April 2013

This Document

This document is designed to build a consensus on rural water use in the Manuherikia and Ida Valleys and is the outcome of community-wide consultation undertaken by the Manuherikia Catchment Water Strategy Group. Described as a “touchstone” document, it is a statement of intent for the development of rural water resources in these Valleys. It is not a legal or statutory document and its purpose is not to compromise, conflict with, diminish, replace or remove the need to comply with other legal requirements, agreements, community plans, applicable Acts, regulations and bylaws. It is intended to be complementary with them.

Background

- The Manuherikia Catchment is made up of two principal valleys and dividing hills of approximately 3,000 square kms of which 60,000ha are suitable for irrigation. These valleys are the Manuherikia and Ida Valleys. Of this area, currently 15,000ha is fully irrigated, and 10,000ha is partially irrigated.
- The Manuherikia River system in Central Otago is a unique catchment in terms of climate, topography and water management history. The history of development in the area goes back to gold mining times and current water consents are, in fact, mining privileges. This system transitions to ordinary RMA-based water consents in 2021. Some farmers still use old gold mining works and channels for the movement of irrigation water. This change presents an opportunity to take a catchment-wide approach to develop an integrated catchment solution for water management and associated land use.
- The current irrigation schemes date from the 1930s with the extensive use of border dyke and contour (wild flood) systems. Use of modern irrigation techniques is growing though Pivots, for example, are so far limited to a few farms in the lower catchment, though their use is growing.
- One of the community’s long term goals reflected in a number of Central Otago District Council and Otago Regional Council documents is to realise potential growth and prosperity. Water is a key resource in achieving these outcomes in its contribution to agriculture, tourism and the general well-being of the community.
- While not water-short on an annual basis the Manuherikia can often be water-short at critical times of the growing cycle. Current irrigated water is supplied by several dams, some very old and will eventually become unserviceable. This stored water is fully utilised and reliability is relatively low. There is no more in-catchment water available on a run-of-river basis. Flood irrigation techniques are used to spread water during the shoulder seasons – spring and autumn. Further development will require significant new water storage facilities.
- The Manuherikia Catchment Water Strategy Group has considerable support from the Otago Regional Council and the Central Otago District Council in its endeavours to modernise and upgrade water management.



Benefits

An assessment is currently being made of the wide range of benefits that will arise for the community from the irrigation scheme. An obvious benefit would be improved farm incomes and the flow-on resulting in more jobs and enterprise for the region. These benefits will accrue not only to the rural population but to the town of Alexandra and its immediate environs and the Maniototo.

Besides these benefits it is expected to reverse the current population decline and bring people to the region which will expand schools, health and community services. The nature of the development will be such that tourism and recreational pursuits will be supported and help expand and possibly enhance the range of attractions in the region.

A major positive outcome would be improvement of the river, stream and wetland environments providing a healthy and productive habitat for indigenous species as well as sport fish. Significant opportunities exist for improving water quality and habitats.

What is intended, therefore, is a development that brings with it a wide range of benefits not only for agriculture but for the community as a whole.

The Project

The final configuration of the proposed irrigation facilities has yet to be decided. What is known is that significant storage capacity is required. To finally decide the best configuration extensive feasibility work is required. The options being investigated include:

- Raising or renewing the Falls Dam, including upgrading as required

- Investigating potential dam sites in the Mt Ida and Manorburn Catchment
- Improving efficiencies in the existing irrigation schemes
- Gravity pipe supply from Lake Dunstan

Feasibility work is required to assess the benefits and impacts of each of these options and synergies that may exist between them. The results of feasibility work will be made public so that a community-wide assessment can be made of the best way to develop the irrigation resource. Preparations for the feasibility work are underway and it is expected to be completed during 2014.



Key Considerations

While the benefits outlined above are sought and valued, they should be viewed in a broader context. That context is made up of a range of considerations which are outlined in this section.

1. Community Considerations

There have been a number of recent opportunities for the community to express its preferences for the development of the region such as consultations run by the Central Otago District Council. There is a certain consistency in what members of the community are seeking and it includes the following:

- **More resilient communities** – businesses, schools, community services, job opportunities, retention of rural populations
- **Greater security that comes from prosperity** – water security, greater land use opportunities, fire and frost protection, increased value from production

- **Protection of community assets and values** – water quality, environmental values, heritage, succession, recreation and community values
- **Continuity** – recognition of heritage and creation of opportunities, innovation, retention of young people, investment

2. Farming Considerations

The region has been settled for a long time and the rural community has been through many phases of development to the more mature stage it has now reached. There are values which are important to this community:

- **Heritage, family and community pride** – adding value to property and community for successive generations – not just economic value but social, cultural and environmental value.
- **Animal Welfare** – producing well-bred and well-conditioned stock receiving adequate feed and protection in summer and winter
- **Farm management** – managing properties, updating and maintaining the farm asset, gaining optimum returns reflecting market conditions, seasons and financial requirements
- **High standards** – seeking and achieving the high standards

3. Other Important Considerations

There are strong sentiments connected with Central Otago characterised by a sense of stewardship - “we do not inherit the earth from our parents - we borrow it from our children”. The essential character of Central Otago has particular meaning for those who live there and the increasing number of people who visit. The essence of the Central Otago regional identity is captured in the phrase “a world of difference”. Those who live there are charged with managing this place, their place, and have a duty to ensure that it is not transformed in ways that detract from those qualities that emphasise its points of difference.

For many, the strong seasonal colour palette is reflected in the regional identity, which represents Central Otago’s climatic extremes. The most distinctive point of difference is colour – the blue of the big sky and the gold of the rolling hills.

Distinctiveness means different things to different people but in the words of the Central Otago District Council (Regional Identity document) such diversity means that decisions should be made in business with the community in mind and in harmony with the natural environment. One of the nine values of the Regional Identity is that “we should protect and celebrate our rich heritage in landscapes, architecture, flora, fauna and different cultural origins”.

Central Otago’s unique character gives rise to a number of important considerations when contemplating land and water management in the area:

- location, being nestled in glaciated valleys surrounded by mountains
- distinctive dry and arid appearance, particularly the low rolling hills providing a unique colour palette
- vastness, sparseness and sheer space with the relative absence of settlement which make it a unique landscape in New Zealand terms
- heritage status characterised by small towns and settlements with distinctive architecture, much of it dating back more than a century and in many cases either preserved or faithfully restored
- predominantly dryland pastoral heritage which has been a strong definer of the appearance of the landscape over many decades of human habitation
- historical status, notable for points of interest in national and regional history
- cohesive social fabric born of multiple successive generations farming in the area
- water, dams, streams, rivers and wetlands will function effectively as habitats for fish and wildlife and are attractive for tourism and recreation

The area makes a significant contribution to agricultural productivity, particularly from fine wools. Irrigation will enhance this productivity and potentially broaden the range of land use and thereby strengthen the base of the local economy.

The scale of irrigation contemplated has the potential to change aspects of the region's appearance as well as impacting on environmental values. If this is to happen then it needs to be done carefully to ensure the unique character of the area remains.

In this respect it needs to be noted that in terms of development, agriculture is not the only interest. Parts of the area such as St Bathans, have aspirations for carefully managed development of tourism, recreational and artistic uses. With appropriate collaboration these different approaches to development are compatible.

Vision

The desired outcome for irrigation in the catchment is:

“A thriving valley community that uses its water resources in a sustainable and cooperative way”

If the programme is successful, within 10 years:



- water users will have access to reliable water, which will be used productively and efficiently
- while aspects of the appearance of the area may have changed the landscape will have retained key elements of its essential character
- water-based ecosystems, habitats and biodiversity will be showing significant improvement
- water quality indicators will be showing signs of improvement
- opportunities for recreation activities will have been enhanced and the area's positive reputation in this regard preserved
- the value derived from primary production will be increasing, and the net value added by reliable irrigation to the local economy will be increasing
- farming and irrigation development will co-exist easily with other forms of development such as tourism
- people will feel they are being treated fairly and involved in decision-making on water-related matters
- development will have taken account of social, cultural and economic considerations

Fundamental Principles

To guide development in the area the following fundamental principles have been identified as vital to the management of the environment:

- **Sustainable management**
Water is a public resource to be managed in accordance with sustainability principles.
- **Guardianship**
All users of water in so doing accept the responsibilities of guardianship of it.
- **Kaitiakitanga**
The exercise of Kaitiakitanga by Ngai Tahu applies to all water and lakes, rivers, hapua, waterways and wetlands, and shall be carried out in accordance with tikanga Maori.
- **Priority uses**
The planning of natural water use is guided by the following:
 - First order priority considerations: the environment, customary uses, community supplies and stock water;
 - Second order priority considerations: irrigation, renewable electricity generation, recreation and amenity.
- **Natural character**
The natural character (mauri) of the region's rivers, lakes, streams, groundwater and wetlands is preserved and enhanced.
- **Biodiversity**
Eco-system values including Indigenous flora and fauna, sports fish and game and their habitats in rivers, streams, lakes, groundwater, wetlands and dryland habitats are valued.



- **Water quality and effects**
The actual or potential cumulative effects the taking and using of water resources can have on waterways are recognised and managed within defined limits.
- **Integration**
There is a strong emphasis on the integration of water and land management including protection of water-related and dryland indigenous biodiversity, trout and game bird productivity and enhancement of water quality.
- **Infrastructure**
The need for sustainable and efficient use of water in existing and new infrastructure is recognised.
- **Access**
Public access to and along rivers, lakes, waterways and wetlands is maintained and, where appropriate, enhanced. Access may need to be limited in situations including where environmental risk, public safety, security of assets, cultural values, biodiversity and farm management require.
- **Community and commercial use**
Water resources are used sustainably to enhance quality of life:
 - Where water is abstracted, it is used efficiently, effectively and sustainably
 - Land use, industry and business practices do not adversely impact on natural water quality and biodiversity
 - Discharges to waterways are minimised and do not compromise quality
 - Land use impacts are monitored and best practice approaches are encouraged.
- **Caution**
A pre-cautionary approach is taken when information is uncertain, unreliable or inadequate.

Land and Water Management

This section examines the impacts of the irrigation scheme on the specific aspects of the land and water system. It deals with these matters under five headings:

- Rivers, lakes and streams
- Native and introduced species
- Landscape
- Vegetation and land use
- Recreational use

The key issues and outcomes sought are not necessarily exhaustive although attempts have been made to be as thorough as possible.



Rivers, Lakes, Streams , Groundwater and Wetlands

Description:

The main river in the area is the Manuherikia River. Its headwaters are in the Hawkdun Range and it is fed by tributaries from the Hawkdun and Dunstan Ranges. Those tributaries include the Dunstan Creek, the Manorburn and the Idaburn. There is a large number of smaller tributaries. It empties into the Clutha and is the largest tributary of the Clutha.

The Otago Regional Council in its State of the Environment monitoring reporting describes the main stem of the Manuherikia River as having very good water quality in its headwaters, but the lower Manuherikia and some tributaries exhibit somewhat lower standards of quality.

Key issues:

- Maintaining minimum flows on the main river and subsidiaries
- Natural flow variations in the main river
- Scarce water shared among many
- Weed presence in the river bed
- Declining water quality in the lower reaches
- Water quality impacts of increased irrigation
- Irrigation infrastructure impacts
- Potential impacts on groundwater
- Preservation of Dunstan Creek (and any other creeks or streams?)
- Loss of wetlands through conversion to pasture
- Riparian margins being degraded

Outcomes sought:

- Maintaining minimum river flows that support healthy aquatic eco-systems
- Overcoming seasonal supply variation with storage
- Maintaining acceptable water quality levels and where quality is poor action is taken to improve it

- Control of effluent and contamination releases
- Maintaining multiple uses and users
- Maintaining braided river habitats
- Increase in wetland and riparian habitats
- Protect and enhance riparian margins for habitat and water quality protection

Indigenous and Introduced Species

Description:

The Manuherikia River is the fourth most significant trout fishery in Otago. It contains a significant population of trout with four introduced fish species: Brown Trout, Rainbow Trout, Brook Trout and Perch. Fishing is undertaken both in rivers and dams noted for their scenic attributes. There is an abundance of safe, easy access spots suitable for family outings. Water resources within the catchment provide habitat for a variety of waterfowl and wading birds including indigenous species such as the black fronted tern. The extend of indigenous bird species is not fully understood.

Besides introduced species, there are nine native species including galaxiids and freshwater crayfish. These are distributed through the catchment.

The valleys contain remnant indigenous dryland habitat though the extent of these are limited and not known, especially in the valley floors.

Key issues:

- Protection of spawning areas
- Protection of the Falls Dam fishery during reconstruction
- Not enabling trout access to key galaxiid habitats
- Protection of dryland and saline species
- Potential loss of habitat (flora and fauna) due to inundation when dam is raised

Outcomes sought:

- Protection of both the native and introduced fisheries
- Protection of spawning areas
- Access to waterways for fishing
- Retention of natural biodiversity where possible
- Better understanding and status of dryland ecosystems and habitats

Vegetation and Land Use

Description:

Pre-European vegetation cover of the catchment was short tussock grassland on the terraces, fans and lower-mountain slopes, while tall tussock grassland dominated by snow tussock occupied the higher mountain slopes. Land cover has been modified with the spread of introduced plants, rabbit infestation, burning and over sowing of introduced pasture grasses. Pastures have been gradually improved through the application of science and good farming techniques.

Soils which are a combination of alluvial and loess are of moderate fertility. Land use is primarily sheep and beef grazing in the upper catchment with more intensive farming in the lower irrigated areas. There is also some cropping and the beginning of dairying and wintering for dairy herds in irrigated areas. Vineyards have also been established in the low reaches of the river on the terraces.



Overall the land use appearance is pastoral. Hot and dry in the summer and cold in the winter, the vegetation takes a long time to recover where landscape modifications are made. Land use intensification will be a result of further irrigation development. Controlling the loss of nutrients below the root zone and contaminants in overland flow will be a challenge and require careful management.

Key issues:

- Maintenance of natural valleys including flow regimes and riparian management, e.g. the Dunstan Creek Valley
- Extension of intensive land use and irrigation across the valley floor
- Risks of pollution from more intensive land use and the danger of the release of contaminants
- Loss of tree and shrub cover due to pivots
- Loss of indigenous dryland vegetation

Outcomes sought:

- Efficient nutrient management by all irrigators
- Effective riparian margins on all streams and rivers within irrigated areas
- Minimal loss of contaminants from irrigated areas to waterways
- Adoption of good management practices to protect waterway health by irrigators and community
- Preservation of Dunstan Creek Valley
- Expansion of lifestyle involvement in the area (often associated with vineyards)
- Alternative vegetation compatible with pivots – such as replanting outside the arc of pivots
- Encouragement of wetlands to enhance water quality and biodiversity

Natural Character

Description:

The overall impression of the landscape is one of spaciousness – big country, big sky. It has a folded and low rolling appearance with distinctive ridgelines. It also has a distinctive colour palette which is a combination of natural and man-made features. Behind the foothills are higher ranges of mountains which form a prominent enclosing natural backdrop. Lakes, rivers and occasionally wetlands are important natural elements along with areas of tussock and native shrublands.

Key issues:

- Limitations on landscape modification – especially on the surrounding hills
- Low impact on landscape appearance – especially on the surrounding hills
- Visual impact of irrigation plant and equipment especially on the hills, but also the valley floors
- Maintenance of vegetation around pivots, particularly trees.

Outcomes sought:

- Minimum visible landscape change on elevated areas
- Retention of natural appearance of surrounding hills and natural valleys
- Development of alternative vegetation cover compatible with pivots and other aspects of irrigation development.

Recreational Use

Description:

The principal water-related recreation activity in the catchment is trout fishing for which the rivers and lakes are extensively used. Game bird hunting for paradise and mallard ducks is a popular water-related recreational activity in rural areas during late autumn and winter and for upland game in spring. There is some pleasure boating on the Falls Lake. Most other lakes are too small for extensive recreation. The Oteake Conservation Park in the north of the region offers fishing, hiking, mountain biking and four wheel drive access. Hunting is popular in the area.

The very successful Central Otago Rail Trail passes through part of the region and represents a significant and expanding tourism asset. Quaint bed and breakfast and café establishments are springing up in various parts of the region. Preservation of the iconic look and feel of the area is vital to the continued success of these types of ventures.

Kayaking is enjoyed on several sections of the Manuherikia. Swimming, picnicking and ice skating are major uses of the lower Manuherikia and Lower Manorburn Dam.

Alexandra is a small tourism centre. The attractive presentation of the town for passing tourist traffic is important. As a result of the Rail Trail the profile of other towns is increasing such as Ranfurly.

Key issues:

- Access to waterways

- Water quality (presence of campylobacter and E.coli) during the summer bathing season and for kayakers and especially after heavy rainfall



- Encouragement of tourism
- Tourism management regarding the key values and unique nature of the area

Outcomes sought:

- Continuing access for fishing
- Sufficient water quality for bathing in key popular summer bathing locations (e.g. Galloway on the Manuherikia River)
- Access for hiking, hunting and other outdoor sports
- Good visitor behaviour by tourists and those taking advantage of the environment to ensure that the unique character of the region is retained
- Protection and enhancement of lake and river character for the appreciation of visitors

Land Ownership

Description:

While in the hills and mountains there are significant tracts of Department of Conservation land, the easily accessible areas of the valley are used for pastoral farming and horticulture, and are in private ownership. There is a mix of new and long term residents, however, a significant number of farming families have long term commitments to the area.

As a consequence there is a strong emotional tie to the land, together with long term memory of its capability and potential. The climatic extremes make farming in the area not always an easy living,

as a result of which the rural community has a rugged determination and strong sense of stewardship.

Key issues:

- Limited financial resources for development
- Financial stress caused by climatic events
- Balanced development with an emphasis on sustainability
- Potential loss of cultural (farming) heritage such as old buildings, machinery and dwellings as a result of modernisation
- Erosion of property rights
- Increased farmer debt

Outcomes sought:

- Continuing rural cooperation
- Recognition of private property rights and responsibilities
- Recognition of the sense of responsibility and stewardship that private ownership can bring
- Close association of irrigation development and heritage values
- Sufficient feasibility assessment to assess the right levels of investment and debt required

Monitoring and Reporting

The key to effective community relations is transparency. In that respect it is important to be able to track performance against the outcomes sought by the Manuherikia Catchment Water Strategy Group, report these to the community and act where outcomes are not being achieved.

Already there are monitoring and compliance procedures required by the Regional and District Councils. Any monitoring undertaken in association with this community proposition would be intended to help the community have confidence that the intentions outlined in the proposition turn into reality and would be subject to consultation with the community. It is not intended to in any way replace statutory monitoring.

In that respect the Strategy Group will do the following:

- **Multi-stakeholder Group**
From time to time (at least annually) a meeting of stakeholders associated with the project will be undertaken to report on progress with the project and against the outcomes in this document.

- **Measurement and Reporting**

In addition, steps will be taken to put in place a programme of measurement and public reporting. This will partly be done in association with the Otago Regional Council which undertakes its own reporting, but where additional reporting is required this will be undertaken.

- **Project Progress Reporting**
The irrigation programme is a major long term initiative. There are a number of steps and stages in its evolution right through to full operation. The progress of the programme will be fully reported at all stages.

For Further Information

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Submissions

A draft of this document was circulated for public submissions. All submissions, written and verbal, were considered by the authors and significant inputs were made to it as a result. Some submission material was received by the authors as part of consolidated feedback from the project strategy group as a result of which the contributors are not acknowledged separately.

Those parties who provided written submissions are listed below. Organisation identification is listed where it is understood the submission is on behalf of the particular organisation.

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