



*Prepared for the Manuherikia Catchment Water  
Strategy Group*

# **Manuherikia Catchment Study Stage 3**

**Planning Issues**

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# Manuherikia Catchment Study

## Stage 3

### Planning Issues



Ministry for Primary Industries  
Manatū Ahu Matua



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Date: December 2012  
Reference: 6-XI012.00  
Status: Final

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## Executive Summary

Options for the improvement and upgrading of irrigation schemes within the Manuherikia catchment have been proposed by various Aqualinc reports. The studies conclude that the Manuherikia Valley is not water short and that options exist to increase storage for water harvesting and to make scheme modifications and upgrades to improve water use efficiency.

Statutory approvals are required for the proposal to construct new works, to upgrade existing infrastructure and to continue to operate and maintain the physical infrastructure of the schemes.

The proposal to construct additional water storage dams will require a full analysis of the effects of the additional storage and the changed downstream flow management to demonstrate that the regime will provide reliability for irrigators while providing opportunities for enhanced environmental flow considerations. At the same time, the raised water levels above the dam must be shown to be able to be managed to minimise the effects on the lake margins and on upstream ecosystems. The significant changes proposed will need to be discussed openly with river interest groups and stakeholders to obtain their “buy in” to the proposals.

An aspect of the proposals that needs to be further considered is the likelihood of the Otago Regional Council imposing a “sinking lid” approach to the allocation status of the catchment. This approach may limit the allocation of water for irrigation in order to lower the total primary allocation to the rate that is closer to the Schedule 2A Primary Allocation. Such an approach may limit the total area able to be irrigated without storage.

Proposed Plan Change 6A to the Regional Plan: Water has introduced some uncertainty around the future management of rural water quality and the obligations or limitations that will be placed on rural land users. Because the proposed plan change is still within the submission phase, changes to the proposed rules and limits are possible. Once the outcome of the hearings process is known, the consent requirements of discharges associated with irrigated land will be clearer.

Other consents and approvals will be required from Otago Regional Council and from Central Otago District Council. These approvals will be better defined when the scheme proposals reach the feasibility stage and the actual activities proposed have been defined.

# 1 Introduction

The irrigation development potential of the Manuherikia Valley in Central Otago is currently being investigated as part of Stage 3 of a comprehensive full catchment water strategy study. Aqualinc is leading this study, and Opus has been engaged to provide specialist advice on planning inputs required to implement the currently preferred development scenario.

The Aqualinc High Level Options report identified 10 possible irrigation development options that were the subject of workshops. The workshops identified the 5 most favourable options that have been examined in more detail to pre-feasibility stage.

The further work included a new Omakau high race as an option for servicing the bulk of the irrigable land in the Upper Manuherikia Valley. The Upper and Lower Valley distribution reports examine options for improving supply reliability, extending the command area and implementing efficiency improvements.

This report examines implications of the planning and other statutory obligations of the redevelopment of the schemes assuming that the high race option, “Scenario 4” is developed. The report also addresses the planning issues around implementing other upgrading and improvement proposals for the irrigation schemes within the Manuherikia Valley.

This report should be read in conjunction with the Land, Hydrology, High Level Options, Falls Dam, Upper and Lower Valley distribution reports that summarise the development scenarios.

This study has been made possible by the generosity of the following who have contributed by way of direct funding or by in-kind contributions. The Manuherikia Catchment Water Strategy Group is grateful for this support and wish to thank the following:

- Ministry of Primary Industries with funding via the Irrigation Acceleration Fund;
- The Otago Regional Council (ORC);
- The Central Otago District Council (CODC);
- The Manuherikia Community.

## 2 Development Options

The development options that have been included in the Planning Issues report are:

- Raise Falls Dam and new high race.
- Hope Creek Dam.
- Improve Manuherikia Irrigation Scheme efficiency.
- A new dam supply to Galloway.

Separate studies have already examined the Mt Ida Dam proposal and the pumped scheme from Lake Dunstan.

Scenario 4 is presented in the “Upper Manuherikia Valley distribution” report (September 2012) and in the “Falls Dam Redevelopment Engineering Prefeasibility Study” (October 2012). The elements of Scenario 4 are:

- A high dam at the Falls Dam site, with a full supply level of 588m above sea level to supply water to the following downstream races on the Manuherikia:
  - » A proposed new 68km long High Race from the Manuherikia River at approximately 470m above sea level, downstream of Loop Road bridge, to the Matakanui Station boundary;
  - » Retention of the Omakau Main Race and supplementing water in the Omakau Main Race from the High Race;
  - » Retention of Blackstone Hill Race;
  - » Greenfields High Race intake;
  - » Blacks Flat (Ophir);
  - » Thurlow Manuherikia River take
- Utilising run-of-the-river water for the following intakes:
  - » Lauder Creek intake;
  - » Thomsons Creek intake;
  - » Minor Dunstan Range Tributaries west of Omakau township;
  - » Thurlow Pool Burn take.
- Some existing private takes will be taken over by the scheme, with irrigation water supplied from the scheme races.

Modelling of catchment flows has been carried out to demonstrate that a total area of 21,000ha can be fully irrigated while maintaining flexibility of downstream flows for management of aquatic ecosystems utilising the same or lower primary allocation as is currently consented out of the Manuherikia Valley.

In the Lower Manuherikia Valley, upgrade proposals are proposed to improve the efficiency of the delivery system. Options being considered include:

- Upgrading existing intakes and distribution to include automation;
- Piping sections of distribution, including partial pressurisation;
- On-farm storage;
- Pumped supply from Lake Dunstan and/or the Clutha River;

- New high level dam on the Manor Burn.

These proposals will allow an increased area to be irrigated utilising primary allocation water taken from Manuherikia River, Chatto Creek, Manor Burn and some minor tributaries.

In the Ida Valley, a new dam on Hope Creek has been identified to increase the available water storage volume for the Upper Manor Burn.

## 3 RMA Authorisations for Irrigation Activities

The redevelopment and operation of existing irrigation schemes and private irrigation activities within the Manuherikia catchment will require authorisations under the RMA that are consistent with the planning instruments in place at the time.

The report: Manuherikia Catchment Study: Stage 3, Implications of a "Do Minimum" Option, September 2012 was prepared by Opus International Consultants Ltd to examine the planning implications of carrying out the minimum upgrades necessary to continue to operate the existing irrigations schemes. The report included detail of the current planning documents that are likely to apply to continuation of the schemes.

The same planning documents have been considered for the redevelopment options. These documents are not listed in detail in this report, but are referred to where relevant and are discussed further in the following sections.

### 3.1 Water Measurement Regulations

These regulations require that by 10 November 2016, all water takes that exceed 5 litres per second will be measured and recorded. ORC will require automatic flow measurement and recording with telemetry on irrigation scheme takes.

### 3.2 NPS for Freshwater Management

This NPS sets out objectives and policies that direct local government to manage water within set water quantity and quality limits. Water quality and quantity limits must reflect local and national values. The NPS encourages integrated management of land and water resources.

Based on the limits set, freshwater resources can be allocated to users while providing the ability to transfer entitlements between users to maximise the value gained from water. Over-allocation must be reduced over agreed timeframes.

The NPS took effect on 1 July 2011. Some of the policies in the NPS take effect immediately, while others are able to be implemented over time in consultation with the stakeholders.

The Land and Water Forum (LAWF) has released its third and final report on freshwater management. The report proposes a collaborative approach to decision-making at catchment level so that the limits set are fair and equitable and allow for continued economic growth at community level. The Ministry for the Environment will provide recommendations to the Minister on water policy options. These may or may not become a part of the NPS.

### 3.3 Regional Plan: Water for Otago

The Regional Plan: Water for Otago (RPW) became operative on 1 January 2004. The purpose of the RPW is to promote the sustainable management of Otago's water resources. To achieve this, the Plan has policies and methods, including rules, to address issues of use, development and protection of Otago's freshwater resources, including the beds and margins of water bodies. The RPW is the primary instrument that regulates the taking and using of water for irrigation and other rural purposes.

### 3.3.1 Water Allocation

Policies relating to the allocation and use of water link the taking of water to the purpose of use; promote shared water management; and give preference to local water for local use; and define the relationship between groundwater and surface water allocation where the resources are hydraulically connected.

Current water abstractions from the Manuherikia are all classified as Primary Allocation under Policy 6.4.2(b) of the RPW.

The ORC has reported that the Manuherikia catchment is “over-allocated” as the sum of consented takes exceeds mean flow of the catchment.<sup>1</sup> Under Policies 6.4.2(b) and 6.4.2A of the RPW, the ORC can decide to grant a replacement water permit for primary allocation for an amount of water that is no more than the amount taken in the five years preceding the application. That means that, if less water has consistently been taken than is consented under an existing water permit, the new permit granted may be limited to this lesser amount. In making the decision, the ORC will consider the application in the context of the soil moisture deficit and climate records (seasonal extremes) for the corresponding five year period.

Applications to take water for water harvesting during higher flows will be considered in terms of RPW Policy 6.4.9(b) where the minimum flow is set at a higher value to provide for the protection of aquatic ecosystems, natural character and other existing lawful users of the water.

The policies and rules around water allocation are intended to improve water resource efficiency by reducing unutilised consented primary allocation. This is referred to as the “sinking lid approach” that seeks to restore the primary allocation to the values specified in Schedule 2A of the RPW. For the Manuherikia catchment, the primary allocation in Schedule 2A is set at 3,200l/s. This is compared to the actual consented allocation of 28,681l/s.

### 3.3.2 Minimum Flows

A minimum flow of 820 litres per second has been set in Schedule 2A of the RPW for the Manuherikia River at monitoring site MS 8 in the upper Ophir Gorge. ORC is investigating a minimum flow for the river Between MS 8 and the Clutha River. In addition, the ORC has carried out some preliminary investigations into ‘management flows’ for residual flows on the main tributary catchments. All replacement water permits to take water from the catchment will have a minimum flow condition applied.

### 3.3.3 Water Quality

The RPW includes policies and rules for the protection and enhancement of freshwater quality. Proposed Plan Change 6A (PPC6A) introduced water quality limits for inland surface water bodies and limits on the discharges applied to production land where they are about to enter water. Hearings are being held on submissions to the Proposed Plan, with decisions on the submissions due to be available by the end of 2012.

The proposed water quality policies and limits will apply to irrigated rural land irrespective of the land use if the proposed plan change is implemented in its original format. Whatever is the outcome of the hearings, future management of irrigated land is likely to require water quality

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<sup>1</sup> Otago Regional Council, “Surface Water Resources of Otago”, August 2008

management and self-monitoring to ensure compliance with the relevant policies and rules that are implemented.

### **3.3.4 Activities in Beds and Margins of Lakes, Rivers and Wetlands**

Policies and rules of the RPW cover the use, erection, alteration, extension, removal or demolition of structures; bed disturbance; the introduction of vegetation; the deposition of any substance; drainage or reclamation; and the removal of any plants.

### **3.3.5 Damming Water**

The RPW includes policies and rules relating to manage effects of new and existing dams including upstream and downstream effects. Policy 6.5.3 covers the effects of fluctuating water levels on the upstream environment, while Policy 6.5.4 deals with the management of flows downstream of dams to provide for instream values.

Dam structures are also covered by the Dam Safety provisions of the Building Act 2004.

## **3.4 Central Otago District Plan**

Currently most activities carried out by individuals and irrigation companies to maintain and operate irrigation are permitted under the Central Otago District Plan (CODP). Proposed Plan Change 5 (PPC5) included measures to regulate effects on landscape values and the external appearance of structures in rural areas.

Any new developments would need to be considered under the provisions of the plan that are relevant at the time of construction including earthworks, external appearance of some structures and ground disturbance under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS).

## **3.5 Other Approvals**

Some activities relating to redevelopment or replacement of scheme elements may require approvals under any of the following processes.

### **3.5.1 Archaeological Sites – Historic Places Act**

The Historic Places Act (HPA) requires that an authority is obtained before any archaeological site is disturbed or destroyed. A desk top study will be carried out at feasibility stage to determine the presence or otherwise of archaeological sites within or close to proposed construction areas.

### **3.5.2 Freshwater Fisheries Regulations**

The Freshwater Fisheries Regulations (FFR) include provisions to protect fish passage at structures within watercourses. These provisions are administered by the Department of Conservation.

The Regulations require provision to be made for fish passage when facilities such as new or modified culverts, fords, dams, weirs and diversions on natural waterways are proposed. Approval of a structure under the RMA that includes fish passage does not replace the obligations under the FFR. An exemption can be sought where a Council has imposed appropriate conditions for

structures relating to fish passage. Ultimately approvals may be required under both the RMA and the FFR.

### **3.5.3 Work in Road Reserve Land**

Activities within State Highway and Council road reserves will require approvals prior to any work commencing. Approvals will include: service agreements, authority to carry out work on a state highway (for State Highways); road opening notices (for Council road reserves); and approved temporary traffic management plans.

### **3.5.4 Activities on Crown Land**

Crown Land includes land that is administered by the Department of Conservation (DoC) and Land Information New Zealand (LINZ). Crown Land is most commonly land within or adjacent to riverbeds, reserve land, or pastoral lease land.

The ownership status and location of land likely to be affected by construction will be determined at feasibility stage.

## 4 Resource Consents for Redevelopment and Operation of Schemes

Applications for water permits to take water for the proposed redevelopment of the irrigation schemes on the Manuherikia Valley main stem will be considered generally under the provisions described above in Section 3. The provisions of any relevant proposed plan changes will also be relevant.

Table 1, below summarises the activities proposed and corresponding resource consent requirements. Some activities are permitted subject to conditions. In the event that the conditions cannot be met, the resource consent status is stated below.

*Table 1: Resource consent requirements*

<b>Activity</b>	<b>Plan</b>	<b>Rules &amp; Policies</b>	<b>Status</b>
Take and use water as primary allocation at existing location.	RPW	12.1.4.4, 12.1.4.8 6.4.0A, 6.4.2, 6.4.2A, 6.4.3, 6.4.7	Restricted discretionary
Transfer location of take for water taken as primary allocation to a new site.	RPW	6.4.17	Discretionary implied by RMA s136.
Take and use water as supplementary allocation at Falls Dam.	RPW	12.1.4.7, 12.1.5.1 6.4.0A, 6.4.9(b)	Restricted discretionary, Discretionary
Take and use water as supplementary allocation at another site.	RPW	12.1.4.7, 12.1.4.8 6.4.0A, 6.4.9(b)	Restricted discretionary
On-farm storage dam water depth less than 3m and volume less than 20,000m <sup>3</sup> not in a catchment.	RPW	12.3.2.1	Permitted
Dam water at an existing consented dam site.	RPW	12.3.3.1(i) 6.5.2, 6.5.3, 6.5.4	Restricted discretionary
Dam water at a new or raised existing dam site; and exceed permitted dimensions.	RPW	12.3.4.1(i) 6.5.2, 6.5.3, 6.5.4	Discretionary
Diversion of to allow erection, repair or maintenance of a lawful structure.	RPW	12.3.2.3 12.3.4.1(i)	Permitted Discretionary
Permanent diversion of a waterbody.	RPW	12.3.4.1(i)	Discretionary

Activity	Plan	Rules & Policies	Status
Discharge water to water from a dam to the downstream watercourse.	RPW PPC6A	12.C.1.6	Permitted
Discharge water to water from an irrigation distribution system to water.	RPW PPC6A	12.C.1.6	Permitted
Discharge water or contaminants to water or land where it may enter water. <b>This rule has been removed by PPC6A.</b> PPC6A will only consider a short term discharge if it exceeds contaminant levels. (Rule 12.C.2.1).	RPW	12.13.1.1	Discretionary
Placement of a pipe or cable over or under the bed of a watercourse.	RPW	13.2.1.1, 13.2.1.2 13.2.2.1	Permitted Restricted discretionary
Construction of an intake in, on or under the bed of a lake or river.	RPW	13.2.1.4 13.2.3.1	Permitted Discretionary
Erection of a dam within a watercourse.	RPW	13.2.3.1	Discretionary
Repair, maintenance, extension, alteration, replacement or reconstruction of an existing lawful structure in the bed of a lake or river.	RPW	13.3.1.1, 13.3.1.2 13.3.2.1	Permitted Restricted discretionary
Demolition of an existing lawful structure in the bed of a lake or river.	RPW	13.4.1.1 13.4.2.1	Permitted Restricted discretionary
Alteration of the bed of a lake or river to erect a structure, to carry out maintenance and repairs, or to demolish a structure.	RPW	13.5.1.1 – 13.5.1.4 13.5.3.1	Permitted Discretionary
Placement of a structure within 7m of the margin of any river.	RPW	14.4.1.1 14.4.2.1	Permitted Discretionary
Discharge of dust to air from construction activities.	Regional Plan: Air	16.3.13.1 16.3.14.1	Permitted Discretionary
Structures in the Water Surface and Margin Area exceeding 9m <sup>2</sup> and 2m high with appearance controls.	CODP	5.7.4A(viii) 5.7.3(a)	Permitted Discretionary

Activity	Plan	Rules & Policies	Status
Operation of existing utilities.	CODP	13.7.5	Permitted
Operation, maintenance or repair of a utility.	CODP	13.7.7	Permitted
Underground an in ground utilities including ancillary pump stations and intakes.	CODP	13.7.9	Permitted
Other buildings associated with utilities less than 20m <sup>2</sup> and/or 4m high with appearance controls.	CODP	13.7.6	Permitted
Telecommunications structures including antennae, cabinets and structures with size and appearance limits.	CODP	13.7.11	Permitted
Utilities not complying with Standards or permitted conditions.	CODP	13.7.16	Discretionary

## 4.1 Taking and Using Surface Water

### 4.1.1 Applications to Take and Use Water

The rules that prescribe the taking and using of water are set out in Section 12 of the RPW. The taking of water as primary allocation is a restricted discretionary activity. Primary Allocation water will generally continue to be taken at the existing location utilising improved intake and distribution works. The taking of some Primary Allocation water may be transferred to a more convenient and effective location. This is discussed further below.

The taking of water as supplementary activity under Policy 6.4.9(b) is a discretionary activity.

For Rules 12.1.4.4 and 12.1.4.5 of the RPW that cover applications to take surface water from the Manuherikia Catchment as primary allocation, the restricted discretionary activity considerations are listed in Rule 12.1.4.8.

The restricted discretionary considerations in Rule 12.1.4.8 were described in detail in the Opus report: Manuherikia Catchment Study: Stage 3, Implications of a "Do Minimum" Option, September 2012, and are not repeated in this report.

As noted above, the Manuherikia catchment is considered to be "over-allocated", so applications to take water as Primary Allocation will be considered rigorously by ORC to ensure that all of the considerations listed in Rule 12.1.4.8 are able to be satisfied. The "sinking lid" policy implies that reducing the total consented take will be a consideration.

A scenario that has not been clarified in discussions with ORC, is the possibility that the replacement consents on the Manuherikia may be granted only for the areas that are currently irrigated and only if efficiency improvements have been made. Further discussions will be required to clarify this before advancing to feasibility investigations.

#### **4.1.1.1 Transfer of Water Permit Take Location**

Under the proposal, some intake locations will change and applications will need to be made under section 136(2)(b). Applications to transfer a water permit to another site will be considered under a similar process to an application for resource consent. The applications will be made concurrently with the water permit applications and are considered under Policy 6.4.17 of the RPW.

#### **4.1.1.2 Water Harvesting and Supplementary Allocation**

Policy 6.6.2 of the RPW supports water harvesting: the storage of water during periods of high availability for later use. As the existing primary allocation for the catchment is not available as run-of-the-river during the summer months due to low flows, water harvesting can be used when there is excess surface water available that can be stored in reservoirs for summer use. This water harvesting will improve the reliability of the primary allocation water supply.

Rules 12.1.4.7 and 12.1.5.1 of the RPW provide for the taking of “harvested” water where there is no supplementary allocation listed in Schedule 2B. There are currently no such takes consented within the Manuherikia catchment. Applications to take water as supplementary allocation will be considered under Policy 6.4.9(b) of the RPW. This policy allows consideration of supplementary allocation subject to effects on aquatic ecosystem values, natural character and existing downstream water users.

The proposal to extend the area irrigated using stored water harvested during high flows will only be successful if the proposed water abstraction regime will result in a guaranteed improved flow regime in the catchment. Further, the proposal will need to have the support of all river interest groups and stakeholders.

The Aqualinc report: ‘Manuherikia Flow Regime and Water Quality Impacts’, October 2012, proposes a range of flow management regimes for the Manuherikia River downstream of Falls Dam based on flow modelling.

## **4.2 Water Storage Dams**

### **4.2.1 Existing Dams**

Existing dams will require resource consents to replace the existing permits that expire in 2021. The damming of water that is currently authorised is a restricted discretionary activity. The application to continue damming must consider the downstream effects of continuing to operate the dam as well as the effects of the impoundment itself. This is discussed further below.

Because the nature of an irrigation dam is to have a variable water level and exposed lake bed during summer, replacement dam permits may require consideration of the management of the lake margin to minimise the effects.

## 4.2.2 New or Raised Dams

Any new dams proposed or the proposal to raise Falls Dam will require consents as discretionary activities under Rule 12.3.4.1(i).

Applications to dam water require consideration of effects both upstream and downstream of the dam structure. The management of the dams will need to include provision for at least the following:

- The requirements of natural and human use values both upstream and downstream of the dam;
- The natural character of the waterbody;
- Any amenity values supported by the water body;
- The flow management regime that provides for downstream flushing to provide for the removal of excess algal growths or accumulation of sediment;
- The needs of lawful consumptive water users;
- Lake margin stability, including erosion control and management of dust at times of low water level.

The long term safety of dam structures is regulated under the Dam Safety provisions of the Building Act.

### 4.2.2.1 On-farm Storage

Unless pressurised supply systems are developed, then many properties will require on-farm storage to be able to meet efficiency improvements. The construction and operation of on-farm storage may require resource consent and/or building consent depending on the scale and location of the dam.

Upgrading the distribution to pressurised pipe supplies has a number of advantages, including removing the need for on-farm storage and pumping.

## 4.3 Discharges

### 4.3.1 Discharge of Water to Water

Discharges of water to water will continue to occur at some scheme intakes, at dams and at by-wash locations that remain within the upgraded distribution system. The aim of the proposal is to eliminate the discharge of excess irrigation water from individual properties to surface water and to groundwater.

PPC6A seeks to minimise or eliminate direct discharges of contaminants to water by encouraging appropriate land management practices.

Schedule 16 of PPC6A proposes allowable limits on certain contaminants that may be discharged to water.

The rules for discharges to water and to land that may enter water are covered by the RPW and PPC6A. Some discharges will continue to be permitted, however there will be some discharges under the proposal that may become discretionary activities, requiring consent.

PPC2 increased the number of Regionally Significant Wetlands within the Manuherikia catchment. Discharges to these wetlands are now specifically included in PPC6A. Some irrigation infrastructure or irrigation runoff may discharge to Regionally Significant Wetlands.

The detail of discharge permit requirements will be clearer at feasibility stage.

### 4.3.2 Discharge of Sediment

The discharge of sediment to water is permitted (e.g. from cultivated or disturbed land) provided:

- Sedimentation does not occur after rainfall stops;
- More than one hour after rainfall stops, the turbidity of the discharge is below 40 NTU where it is about to enter water;
- More than 12 hours after rainfall stops, the turbidity of the discharge is below 5 NTU where it enters water.

Under the currently proposed rules in PPC6A, any other discharge of sediment to water where no sediment control measures have been taken is prohibited.

### 4.3.3 Prohibited Discharges

A number of discharges are prohibited by the current rules in PPC6A. These include discharges:

- Having an odour, oil or grease film, scum or foam or floatable material where it is about to enter water;
- Increasing the colour; reducing visual clarity; developing an odour; or developing an oil or grease foam, scum or foam in the receiving water;
- That result in flooding, erosion, land instability, or property damage;
- That contain sediment and no measure has been taken to avoid sediment runoff;
- Of animal waste effluent to a water body; to saturated land; to a conduit to water, or to the bed of any lake or river or wetland; that enters water from land; that results in ponding.

Some of the discharge rules included in PPC6A are complex in that they inter-relate and so must be read in their entirety to comprehend their implications for rural activities.

As a result of the hearings on PPC6A, these rules may change in the decisions version of the proposed plan change.

The potential effects of discharges to land and water resulting from the proposed scheme improvements are discussed in the Aqualinc report: 'Manuherikia Flow Regime and Water Quality Impacts', October 2012. The report discusses how some of the water quality effects can be managed to minimise the discharge of contaminants.

These effects will be considered further at the feasibility investigations stage.

## 4.4 Works In and Adjacent to Waterbodies

The proposal includes the construction, removal or modification of structures that will affect waterbodies, including dams, intakes, siphons, pipelines, flow measuring devices, discharge outlets, and cables. Some irrigation intakes will require on-going annual or more frequent maintenance to retain their effectiveness.

Construction, removal, modification and maintenance of structures including the associated bed disturbance are permitted for smaller scale activities. Activities within the bed of a waterbody that exceed the limits of the permitted rules will require resource consent as a discretionary activity.

Considerations for structures and disturbance activities in watercourses where consents are required include:

- Effects natural and human use values of the waterbody, including access along the waterbody;
- Effects on the natural character of the waterbody;
- Effects on any amenity values supported by the water body;
- Effects on the flow and sediment processes, including flood carrying capacity;
- Any heritage values associated with the waterbody or structure;
- The stability and function of the structure or activity;
- The method, duration and effects associated with the construction of the structure or activity;
- The needs of lawful consumptive water users.

Feasibility studies will determine the scale and nature of activities within and around waterbodies.

## **4.5 Discharges to Air from Construction Activities**

The construction activities will generate some dust, especially during dry weather conditions. The Regional Plan: Air permits the discharge of construction related emissions from to air provided that the emissions are not noxious, dangerous, offensive or objectionable at or beyond the boundary of the property.

Most construction activities are able to meet these conditions provided that some form of dust control measures are utilised when emissions may be generated. At this stage of investigations, no consents are expected to be required for discharges to air.

## **4.6 Maintenance and Construction of Utilities Activities not within Waterbodies**

Most existing or proposed utilities works are permitted by the CODC District Plan. Buried utilities, such as pipelines and cables, where the ground disturbance is returned to its previous condition, is permitted and is not affected by earthworks rules. Structures may require consents where they are within the Water Surface and Margin Resource Area, or where their appearance or dimensions do not meet the permitted standards.

The requirement for consents under these provisions will be determined once the nature of the activities are defined.

Activities that involve the disturbance of land that may include a HAIL site (Hazardous Activities and Industries List) may require resource consent from CODC. Within the project area, HAIL sites may include:

- Land where agricultural chemicals have been stored, mixed or applied;
- Land where fertiliser has been stored;
- Current or historic livestock dip or spray operations;

- 
- Persistent pesticide storage or use including market gardens, orchards, glass houses or spray sheds;
  - Pest control operators' storage, preparation and cleaning;
  - Sites of storage tanks for fuel, chemicals or liquid waste;
  - Gun clubs or rifle ranges;
  - Mining activities.

The existence of potentially contaminated land within the proposed project area will be considered further once the detail of the proposed activities is known.

## 5 Conclusions

This report takes a “broad brush” perspective of the planning approvals that may be required to authorise the upgrading of the irrigation schemes within the Manuherikia catchment and to provide for the on-going operation and maintenance of the schemes.

The RMA provisions will require some improvements in the operation of the schemes irrespective of any proposed “major” works. This is described in other reports prepared for this catchment study.

The future management of freshwater in New Zealand is undergoing changes that are reflected in the changes to the Regional Plan: Water for Otago, both current and proposed, and the implementation of the National Policy Statement on Freshwater Management. The Land and Water Forum has recommended further initiatives on the future of freshwater and land management. The details of future water management tools should be better defined when feasibility investigations are underway.

Feasibility investigations of the preferred options for the on-going operation of the schemes will better identify the elements of the schemes that will require resource consents and other statutory approvals.

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