

**Section 32 Report
Consideration of alternatives,
benefits and costs**

**Proposed Plan Change 6A
(Water Quality)**

**Regional
Plan: Water
for Otago**



**31 March 2012
Accompanying ISBN: 978-0-478-37629-6**

Table of Contents

1. Introduction	3
2. Background	3
3. Evaluation of strategic approaches	3
3.1 Description and assessment of four strategic approaches	4
3.2 Detailed analysis of the broad strategic options	5
3.3 Strategic approach recommendation	8
4. Development of the preferred strategic approach	8
5. Detailed analysis of an effects-based approach	9
5.1 Proposal	9
5.2 Freshwater objectives	9
5.3 Reasonable mixing	10
5.4 Setting freshwater quality limits	11
5.5 Setting Otago-wide standards and limits vs catchment-by-catchment standards and limits	13
5.6 Permitted and prohibited activity approach vs consenting activities	14
5.7 Bed disturbance	15
5.8 Targets and transition times	16
5.9 RMA simplifying and streamlining	16
6. National Environmental Standards	16
7. National Policy Statement for Freshwater Management 2011	17
8. Conclusions	18
9. Supporting information	18

1. Introduction

The impacts of contaminants in runoff, drainage and leaching (known as non-point source pollution) present one of the most serious freshwater management challenges in New Zealand.

The objective of Proposed Plan Change 6A (Water Quality) is good water quality throughout the region, from reducing the effects of land use practises.

Future plan changes are programmed to address effects on water quality from discharges of human sewage, hazardous substances, hazardous wastes (including landfills and contaminated sites), reticulated stormwater, and from industrial and trade premises

This report summarises the alternatives, benefits and costs considered as part of the assessment of Proposed Plan Change 6A (Water Quality) to the Regional Plan: Water for Otago, as required by Section 32 of the Resource Management Act 1991 (RMA).

2. Background

Otago Regional Council (ORC) has been monitoring water quality within the Otago region since 1995, and has reported on its findings in various publications including the *State of the Environment (SOE) Report - Surface Water Quality in Otago, May 2007*.

Otago's freshwater is generally of good quality, however in some areas there has been deterioration.

Since 2000, the ORC has initiated a range of farmer education programmes, became a signatory to the Dairying and Clean Streams Accord and a memorandum of understanding with Fonterra for dairy farming on "tile and mole" drained land.

Following the 2007 SOE report, a programme of education and compliance action to better address water quality was adopted (ORC report 2007/261 - *Surface Water Quality and Future Waterway Protection*).

In June 2008 the Government announced its strategy *New Start for Fresh Water* in response to deteriorating water quality. As a result, the Land and Water Forum was formed, and their report, *A Fresh Start for Freshwater*, identified outcomes and goals for freshwater management, and recommended policy changes to achieve them.

The National Policy Statement (NPS) for Freshwater Management 2011 came into force on 1 July 2011, and contains provisions for water quality that regional councils must give effect to. Regional councils must also give effect to National Environmental Standards (NES). Proposed plan change 6A (Water Quality) is considered against the NPS for Freshwater Management and current NES.

3. Evaluation of strategic approaches

Section 32 of the RMA requires consideration of alternatives and assessment of the benefits and costs of adopting any objective, policy, rule, or method in the Water Plan. The following sections discuss the costs and benefits of the broad strategic options considered and provide a more detailed analysis of the preferred option. Four strategic approaches were considered to address the impact of non-point source pollution on water quality in Otago.

3.1 Description and assessment of four strategic approaches

Strategic Option 1: Status quo

This option continues the ORC's current approach towards the management of Otago's freshwater resources and proposes no changes to the provisions of the Water Plan, the Regional Policy Statement (RPS) or any other regulatory document that manages regional water quality. State of the Environment Monitoring indicates water quality is deteriorating in some parts of Otago, therefore maintaining the status quo would not achieve the objective of good water quality.

In the longer term, maintaining the status quo could result in Otago's freshwater resources being increasingly controlled through Central Government directives, standards and guidelines.

Strategic Option 2: Voluntary approaches

This option seeks to improve water quality through the development of programs that do not force participation. Voluntary programs are often initiated as a result of the community exerting peer pressure on polluters (commercial enterprises, public organisations or individual polluters), and establish eligibility criteria, rewards and requirements for participation. The three most common types of voluntary programs are unilateral self regulation initiatives, negotiated agreement between controlling authorities and government-sponsored programs.

Voluntary initiatives are currently already promoted by the Water Plan and RPS. Even with wider community awareness, water quality in some parts of Otago is deteriorating, therefore voluntary initiatives alone do not achieve the objective of good water quality. Further strengthening of this approach does not necessarily require a change to the provisions of the Water Plan and RPS.

Strategic Option 3: Economic instruments

This option promotes the development of a range of economic instruments aimed at encouraging behaviour changes and assisting individuals and organisations with better controlling the adverse effects of their activities on the environment. Economic instruments can be design-based or performance-based incentives or disincentives, such as input taxes (tax on farm inputs, e.g. fertilisers and pesticides); ambient taxes/subsidies (e.g. subsidy when pollution drops below a certain threshold or a fine if discharged contaminants exceed this threshold); financial assistance (public funded programs to mitigate pollution or encourage private behaviour change) and tradable discharge permits.

Economic instruments available to the ORC, such as targeted rates, are not considered to be appropriate because of the transfer of liability from private to public funding to address the adverse effects of private activities. Tradable discharge permits reward those currently polluting the most, are difficult to monitor and enforce, and ultimately may not result in better water quality. These also retain a consented fixed level of pollution rather than reduce pollution through time.

Strategic Option 4: Command-control programs

This option augments the existing regulatory framework by amending and strengthening the provisions of statutes that seek to maintain and enhance the water quality of Otago's freshwater bodies. Under its RMA functions, the council may use the following strategies for the purpose of giving effect to the purpose of protecting water quality in Otago:

- Control of the use of land for the purpose of maintaining and enhancing water quality and ecosystems in water bodies (Section 30(1)(c)(ii) & (iii));

- Control of discharges of contaminants into or onto land, air, or water, and discharges of water into water (Section 30 (1)(f)).

This effectively allows Strategic Option 4 to be split into two sub options:

- 4A. Adopt an activity-based approach based on design-standards and best management practices e.g. for effluent disposal, fertiliser use, stocking rates, drainage design, sediment trapping, fencing.
- 4B. Adopt an effects-based approach to control the level of contaminants in discharges to land and water.

A command-control programme implemented through a Regional Plan is considered appropriate as it allows objectives to be achieved through control of activities or discharges known to contribute to poor water quality.

3.2 Detailed analysis of the broad strategic options

Table 3.2 below provides an overview of the benefits and costs/risks associated with the options described above.

Table 3.2 Detailed analysis of the broad strategic options

		Maintain status quo	Voluntary Approach	Economic Instruments	Command-Control Programs	
					Activity-based requirements	Effects-based requirements
Benefits/Potential Benefit	Creates a sense of ownership and responsibility among polluters		++	+ (Potential)		+ (Potential)
	Stimulates participation and cooperation		+ (Potential)			+ (Potential)
	Promotes individual autonomy, self governance and flexibility		++	+		+
	Meets the purpose of sustainable management of natural resources			+ (Potential)	+ (Potential)	+ (High potential)
	Allows for effective monitoring (well defined monitoring standards)			+	+	+
	Allows for easy enforcement or litigation	+			++	+
	Can be applied in all situations/for all types of activities		+ (Potential)	+ (Potential)		++
	Allows policy measures to be tailored to distinct local circumstances		++	++	+	++
	Promotes innovation, learning and self-monitoring		++	+		++

	Averts the risk of pollution accumulation due to land uses in lower reaches of the catchment			+		++
	Promotes consistency between local policies and national standards			+	+	+
Costs/Risks	Cost for land manager to change land management practices/production systems		Cost		Cost	Cost
	Investment security Safety from prosecution					Risk
	Desirability to introduce complementary regulations (re. enforcement) to ensure effectiveness		Cost	Risk		
	Continued degradation of water quality	Cost	Risk	Risk	Reduced Risk	
	Polluters/land-uses can remain under the radar	Cost	Risk	Risk	Risk	
	Cost for the ORC to develop/alter regulatory instruments /provide economic incentives, or develop monitoring instruments			Cost	Cost	Cost

3.3 Strategic approach recommendation

Option 4B (an effects-based approach) is recommended for the following reasons:

- Option 4A promotes the use of land-use controls and best management practices (e.g. separation distances, limits on stocking rates, fertiliser application rates). These are usually based on mathematical models connecting the land use practice with discharge contamination. Land-use controls and best management practices act as surrogates for more direct controls on the discharge of contaminants to the receiving environment. The unsure connection between land use controls and the reduction of impacts on the receiving environment still may result in ineffective control on discharge quality and poor water quality.
- Effects-based approaches automatically apply to all land uses or activities, whereas land use controls provide little assurance in terms of their ability to capture all sources of contaminant discharges.
- Option 4B promotes equality and collaboration by giving all land managers within a catchment equal responsibility to control contaminants in runoff and leaching to groundwater and soil, on their own properties. The idea of shared responsibility may generate coordinated responses to pollution and nurture cooperative arrangements between land managers.
- Option 4B provides land managers with more flexibility than Option 4A, by allowing them to consider a range of options to mitigate the adverse effects of their discharges.
- Catchment-wide water quality standards and discharge limits as promoted under Option 4B, provides a more effective response to the issue of pollutant accumulation in the lower catchments.

Option 4B requires development of a regulatory framework that supports an effects-based approach for maintaining and enhancing the water quality of Otago's lakes, rivers and aquifers.

4. Development of the preferred strategic approach

In 2010 the ORC released the Rural Water Quality Strategy, outlining the effects-based approach to managing rural discharges to water with focus on controlling contaminants discharging from land to water, instead of controlling land use activities and nutrient inputs. Maximum discharge limits would be set for common rural contaminants, and discharges from land should achieve those limits. The land manager has the flexibility to implement whatever changes are needed to meet the discharge limits, that best suits their land use and management regime.

Proposed Plan Change 6A (Water Quality) to the Water Plan seeks to implement the regulatory framework described in the Rural Water Quality Strategy by permitting discharges that meet specified limits for nitrogen, phosphorus, *Escherichia coli*, and turbidity. Discharges that have an obvious adverse effect in receiving water, or that damage property, become prohibited, including where they result from land disturbance that risk sediment entering water. Discharges to water from animal waste systems, silage storage or composting process are also prohibited. Land use is not controlled.

The proposed plan change is expected to reduce the effects of land use practises on water quality, without imposing unnecessarily cost on land managers.

Hui were held with Papatipu Runaka and community consultation has been undertaken on the proposed new regulatory framework: three Water Forums were held in 2010 in May, June, and July in Cromwell, Oamaru, and Balclutha, attended by about 130 people. A further three Water Forums were held in September and October 2011 at Cromwell, Oamaru and Balclutha, attended by about 200 people. In November and December, a further 15 public meetings were held around the region, attended by about 300 people.

5. Detailed analysis of an effects-based approach

This section assesses the different options the ORC considered to achieve the objective of good water quality throughout the region by implementing an effects-based approach to control the level of contaminants in discharges to land and water.

5.1 Proposal

The following options are assessed:

- How freshwater objectives should be established.
- Addressing cumulative effects through removal of reasonable mixing.
- How freshwater quality limits should be established.
- How freshwater quality limits should be applied.
- Permitted and consenting approaches for managing discharges.
- Changes to bed disturbance rules
- Setting targets and timeframes for achieving the freshwater objectives and quality limits.
- Streamlining and simplifying the Water Plan.

5.2 Freshwater objectives

To implement the NPS for Freshwater Management, regional councils are required to establish freshwater objectives. A freshwater objective is the environmental outcome wanted for a water body, and describes the environmental state required to meet community values of the water body. A freshwater objective may be narrative or numerical.

OPTION1	NARRATIVE OBJECTIVES
BENEFITS:	<ul style="list-style-type: none"> • Easily understandable by the public to assess receiving water quality for meeting their values. • Cost effective. • Can identify pollutants that are affecting water quality which can not be easily measured e.g. scums, foams, and odours.
COSTS/RISKS:	<ul style="list-style-type: none"> • Subjective and too general for enforcement. • May not recognise a trend in declining water quality initially.

OPTION 2	NUMERICAL OBJECTIVES
BENEFITS:	<ul style="list-style-type: none"> • Provides for measuring the effectiveness and efficiency of methods towards meeting freshwater objectives. • Allows for standardised assessment of water quality at monitoring sites. • Prompt identification of trends in water quality. • Measure is certain and concise, identifying a clear environmental bottom line to monitor trends in water quality.
COSTS/RISKS:	<ul style="list-style-type: none"> • Can not always translate into a value such as natural character. • May not identify a decline in water quality if all contaminants aren't identified.

RECOMMEND OPTIONS 1&2

Having both numerical and narrative standards is seen as the most appropriate way in achieving the objective of good water quality. Narrative standards provide a useful measure of values not easily measured through numerical standards, such as natural character or odour. Numerical standards provide a baseline for monitoring trends in water quality and give clear indication if water bodies are over-allocated to Standards and so allowing the ORC to assess the effectiveness of rules, and are consistent with the NPS for Freshwater Management.

Numerical standards to be included are for common contaminants in rural diffuse discharges and are consistent with national indicators for monitoring freshwater quality. For river water quality they are nitrate-nitrite nitrogen (NNN), dissolved reactive phosphorus (DRP), ammoniacal nitrogen (NH₄-N), *Escherichia coli*, and turbidity.

Setting both numerical and narrative standards within the Water Plan is seen as the most appropriate way of giving effect to Policy A1 of the NPS for Freshwater Management, requiring regional councils to establish freshwater objectives.

5.3 Reasonable mixing

Sections 70, 107, and Schedule 3 of the RMA and the current Water Plan all allow for the use of mixing zones to dilute discharged contaminants. In the mixing zone, the levels of contaminants are allowed to exceed the receiving water standards, resulting in zones of non-compliance with freshwater objectives.

OPTION 1	REMOVE REASONABLE MIXING
BENEFITS:	<ul style="list-style-type: none"> • Water quality in all parts of Otago's lakes and rivers will be maintained, or enhanced where needed. • Reduces the impact of cumulative effects downstream. • Polluters internalise the cost of their activities. The wider community or environment does not have to bear the burden of dealing with the pollution generated by the activities of individuals. • Better meets the community expectation for good water quality
COSTS/RISKS:	<ul style="list-style-type: none"> • Land managers are responsible for, and bear the costs of retaining contaminants on their site or treating their discharges to a degree where they no longer have a potential to degrade the water quality in the receiving environment.

OPTION 2	RETAIN REASONABLE MIXING
BENEFIT:	<ul style="list-style-type: none"> • Less costly and easier for the polluter as they can use the water body to dilute discharges.
COSTS/RISKS:	<ul style="list-style-type: none"> • Cost is to the community as discharges that exceed the receiving water body standards can result in zones of non-compliance where receiving water does not provide for community values. • Discharges that exceed the receiving water body standards can result in cumulative effects downstream. • Defining a reasonable mixing zone for non-point source pollution is problematic.

RECOMMEND OPTION 1

Eliminating the use of mixing zones is the most appropriate way of achieving the objective of good water quality. It sends a clear message that the polluter must treat discharges on site before being discharged to water to ensure no adverse effects occur.

Section 70 allows for discharge of contaminants to water to be a permitted activity providing the ORC is satisfied that none of the effects listed in 70 (1) (c) – (g) occur after reasonable mixing. The ORC is not satisfied that all or some of these effects will not occur if mixing is allowed due to the cumulative effects non-point source discharges have on receiving water bodies.

The setting of discharge limits (see Section 5.4 below) recognises that some level of contaminants will always enter water through discharges from land, however receiving water should not be used to dilute contaminants. The removal of mixing puts the primary responsibility of dealing with contaminants with the polluter.

5.4 Setting freshwater quality limits

The NPS for Freshwater Management requires the setting of freshwater quality limits. “Limit” is defined as “the maximum amount of resource use available, which allows a freshwater objective to be met”.

Some regions are addressing the cumulative effects of non-point source pollution through catchment-based load limits, for nitrogen and phosphorus. This approach meets the freshwater objective by allocating a total load of nutrient to the catchment. The nutrient load is calculated by taking into account flow volume and the nutrient load the water body can take to meet the receiving water body standards. The load limit is typically the point at which more than minor effects occur (i.e. the tipping point). The nutrient load limit is achieved through either restricting land use activities or allocating a nutrient loss entitlement at a property level.

An alternative approach is to require individuals to meet maximum concentrations of contaminants in discharges to water.

OPTION 1	CONTAMINANT LIMITS
BENEFITS:	<ul style="list-style-type: none"> • Provides land managers with the flexibility to choose the best option to manage their activities and meet the discharge limits. • Allows development of innovative technology to meet the discharge limits. • Allows land managers to acquire a better understanding of the impact of their activities on the environment. • Allows for further land intensification as long as the discharge limits are met. • Easily identifiable for enforcement action: non-compliance with the discharge limits can be traced to the individual. • Equitable: each land manager is responsible for the quality of their discharge. • Directly addresses the criteria for measuring water quality.
COSTS/RISKS:	<ul style="list-style-type: none"> • No investment security for land managers. Land managers investing in system upgrades or changing their behaviour have no guarantee that they will meet the off-site discharge limits. • Non-point source discharges from land are difficult to control and monitor. • No easy on-site sample analysis - samples will need to be analysed by an accredited water testing laboratory which is costly. • Does not take into account the assimilative capacity of the water bodies.

OPTION 2	CATCHMENT BASED LOAD LIMITS
BENEFIT:	<ul style="list-style-type: none"> • An approach tailored to each catchment. • Allows for dilution of contaminants by taking into account the assimilative capacity of receiving water bodies.
COSTS/RISKS:	<ul style="list-style-type: none"> • Setting catchment-based load limits is time consuming and expensive. • Nutrient load limit may be set too high or too low resulting in either continuing deterioration of water quality or economically too stringent. • Stifles innovated technology that is not a recognised best management practice to reduce current and future discharges if water body is over-allocated. • Stifles economic growth within catchments that are over-allocated as new intensive land uses are not allowed or severely restricted. • Non-compliance with the catchment-based load limit approach will be difficult to trace back to the individual unless in-depth property auditing undertaken. This approach would be time consuming, expensive and reliable records of farm management would be required. • Does not necessarily result in improving water quality as restricting land use activities or allocating an amount of nutrient resource may not control the source of the contaminants.

RECOMMEND OPTION 1

Implementing contaminant limits in individual discharges is seen as the most appropriate way of achieving the objective of good water quality. It allows land managers the flexibility to take into

account local environmental conditions and economic considerations, while requiring them to comply with maximum contaminant limits in discharges. It is both effective and efficient because it encourages land managers to apply the best practicable solution given their specific local conditions, rather than imposing generic best management practices that may fail to be effective in every environment. It allows for future economic development of land providing the discharge limits are complied with. It is also much easier to enforce, as limits relate to specific contaminant discharges, not catchment loads.

To align with the removal of reasonable mixing, the discharge limits will be the same as the standards set for the receiving water bodies. Application of the discharge limits should recognise the first flush phenomenon, and provide a timeframe for land managers to meet the discharge limits.

The setting of individual discharge limits for specified contaminants is seen as the most effective way to give effect to Policy A1 of the NPS for Freshwater Management which requires regional councils to establish freshwater quality limits to help achieve the freshwater objectives.

5.5 Setting Otago-wide standards and limits vs catchment-by-catchment standards and limits

When setting numerical receiving water standards, and discharge limits, consideration needs to be given to setting those standards and limits on a region-wide, or catchment basis.

OPTION 1	REGION-WIDE STANDARDS AND LIMITS
BENEFITS:	<ul style="list-style-type: none"> • Consistent approach throughout Otago. • Inexpensive to administer.
COSTS/RISKS:	<ul style="list-style-type: none"> • Does not necessary reflect the local community values. • Does not recognise Otago' geographic variability. • Could result in water quality degradation in areas with excellent water quality.
OPTION 2	CATCHMENT STANDARDS AND LIMITS
BENEFITS:	<ul style="list-style-type: none"> • Standards reflect local community values. • Standards recognise Otago's geographic variability. • Uses existing SOE data
COSTS/RISKS	<ul style="list-style-type: none"> • Time consuming as detailed knowledge of each catchment required. • Expensive to set limits and standards and administer.

RECOMMEND A COMBINATION OF 1 & 2

A combination of region-wide and localised catchment standards is seen as the most appropriate way of achieving the objective of good water quality, and gives further effect to Policy A1 of the NPS for Freshwater Management.

The numerical receiving water standards should generally reflect the existing water quality of an area, and the behaviour of that water body. Five catchment types are identified within Otago. Rivers have been separated into wet and dry catchments depending on the number of days without

hydrological disturbance. The risk of periphyton growth increases with more days without hydrological disturbance (more than 30 days). Rivers in this category can withstand higher discharge concentrations of nitrogen and phosphorus, than areas with less frequent hydrological disturbance. Eutrophic lakes should also be recognised, as should the excellent water quality in the larger western lakes and their alpine headwaters.

To align with the NPS for Freshwater Management, a target date for water bodies to meet proposed receiving water standards will be identified (see Section 5.7).

5.6 Permitted and prohibited activity approach vs consenting activities

OPTION 1	CONTROL DISCHARGES THROUGH PERMITTED AND PROHIBITED ACTIVITIES
BENEFITS:	<ul style="list-style-type: none"> • Shifts the responsibility for addressing adverse effects of activities from the ORC to the individual or organisation undertaking the activity. • Eliminates the cost of land managers applying for consent, especially when consent would not be granted for such activities. • Encourages land managers to monitor the effects of their activities and learn how to manage their activities in an appropriate way.
COSTS/RISKS:	<ul style="list-style-type: none"> • Economic cost for land managers who are now fully accountable for managing the potential impacts of their activities. • Uncertainty for land managers about which mitigation measures for their dischargers are required to meet set discharge limits. • Compliance costs to ensure limits are being meet.
OPTION 2	CONTROL DISCHARGES THROUGH RESOURCE CONSENTS
BENEFITS:	<ul style="list-style-type: none"> • The ORC has discretion to allow or disallow certain activities or to impose conditions under which these activities can occur. • Certainty to the land managers to what conditions they must comply with.
COSTS/RISKS:	<ul style="list-style-type: none"> • Cost for land managers for consent application and processing fees. • The ORC takes on the responsibility for activities undertaken by the discharger. • Mitigation measures imposed by the ORC may not necessary see an improvement in water quality as they may not deal with the source of contaminants. • Compliance costs to ensure limits are being meet.

RECOMMEND OPTION 1

Option 1 is the most appropriate way of achieving the objective of good water quality because it puts the responsibility for maintaining water quality and the health of the environment on the discharger. This option requires the land manager to monitor the effects of their activities on the quality of discharges from their sites, making it possible for any discharges exceeding allowable standards to be quickly discovered and appropriately addressed. It is both effective and efficient because it encourages land managers to better understand the impacts of their activities enabling

them to adopt mitigating measures and practices that meet environmental objectives while also taking into account practical and economic circumstances.

Prohibiting discharges for which the ORC would never grant a resource consent (e.g. that have an obvious adverse effect in receiving water, damage property, or result from land disturbance that risks sediment entering water, or discharges from animal waste systems, silage storage or composting processes) is considered appropriate as the effects of these discharges to water quality is not acceptable and will no longer be tolerated.

Provision for consenting discharges should be provided only where changes to land management practices to comply with limits have been made and more time is needed, or for short-term activities.

5.7 Bed disturbance

To achieve better water quality, livestock should be kept out of water bodies, where practicable. The Water Plan already provides for the disturbance of beds by livestock, however, it is proposed to strengthen the rule to protect beds and thereby water quality. Currently, resource consent is required for any crossing with an upstream catchment exceeding 50 ha, and the cost of consent is a deterrent.

OPTION 1	STRENGTHEN BED DISTURBANCE BY LIVESTOCK RULE
BENEFITS:	<ul style="list-style-type: none"> • Stock to be excluded from water bodies where there is likely to be an adverse effect. • Stock can continue to access water provided they don't damage the bed. • Land manager has flexibility in choosing method to avoid stock damage to bed. • Only targets water bodies which are susceptible to pugging and erosion. • Enforcement made easier from removal of "conspicuous" and "significant".
COSTS/RISKS:	<ul style="list-style-type: none"> • Cost to land managers to exclude stock from all or some water bodies. • Does not address stock excreting directly to water bodies.
OPTION 2	ADDRESS USE OF WATER BODIES AS REGULAR STOCK CROSSINGS
BENEFITS:	<ul style="list-style-type: none"> • Addresses stock excreting en masse directly to water bodies. • Reduces sediment and fecal matter entering water bodies. • Avoids regular bed (and habitat) disturbance, and remobilisation of bed material. • Avoids the cost of resource consent. • Sets consistent, clear standards.
COSTS/RISKS:	<ul style="list-style-type: none"> • Cost of installing new stock crossings in or on water bodies. • Risk of short-term adverse effects.

RECOMMEND OPTIONS 1& 2

Options 1 and 2 are seen as the most appropriate way of achieving the objective of good water quality. They require stock to be excluded from water bodies where there is likely to be an adverse effects from disturbance of the bed. To help with implementation of the preferred approach, installation of water body crossings should be more permissive. The installation of a crossing is seen as an activity with a short term adverse effect, however the long-term benefits are significant. By preventing stock from crossing waterways there will be a reduction in disturbances of the bed and defecation by stock directly to water bodies. Installation costs are reduced, as there is no need for resource consent for crossings.

5.8 Targets and transition times

Targets for freshwater objectives

The NPS for Freshwater Management requires targets to be set for water bodies that do not meet freshwater objectives (i.e. the water body is over-allocated). A target is a limit which must be met at a defined time in the future if the receiving water body is over-allocated. For ease of understanding, targets are being set for all water bodies in Otago. For receiving water bodies that already meet their freshwater objective the target date is from the date of notification of the proposed plan change. For water bodies that are over-allocated in regards to their freshwater objective, a target date of five years from the date of notification is proposed for those receiving water bodies to meet their freshwater objective.

Transition times for discharge limits

To allow for land managers to change their management practices to meet discharge limits, transition times are proposed. Land managers will have five years from the date of notification to comply with ammoniacal-nitrogen, dissolved reactive phosphorus, *Escherichia coli* and sediment, and seven years from date of notification to comply with nitrate-nitrite nitrogen. For compliance with the nitrogen loading values, it is proposed that land managers will have seven years from date of notification of the proposed plan change.

5.9 RMA simplifying and streamlining

In order to streamline the Water Plan as provided by the Resource Management Amendment Act 2005, it is proposed to remove from all amended provisions: Introduction, Issues, Explanations, Principle Reasons for Adopting, cross-referencing, and Anticipated Environmental Results. This will make the Water Plan easier to read and use, and removes potential ambiguity between policies and explanations.

6. National Environmental Standards

Regional councils must give effect to National Environmental Standards (NES). The plan change was considered against the following NES:

Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007

Regional councils must be satisfied that their permitted activities will not result in registered drinking water supplies for over 500 people becoming unsafe for human consumption following existing treatment by exceeding, or nearly exceeding, determinands in the *Drinking-water Standards for New Zealand 2005* (DWSNZ).

Currently there are no reported exceedences or near-exceedences of DWSNZ determinands at any registered drinking-water supply for over 500 people in Otago. Therefore permitted activity rules do not require amending specifically to meet this NES. As the plan change addresses *Escherichia coli* and nitrate-nitrogen (contaminants of concern for drinking water), there may be a positive effect on drinking water supplies.

National Environmental Standard for Electrical Transmission Activities

This NES only applies to activities carried out on existing electricity transmission lines, including operation, maintenance, and upgrading of existing lines. The regulations are specific to electrical transmission activities and override the rules in the proposed plan change. This is unlikely to be an issue, because to be significant discharges to water (if any, that are more than *deminimis*) "in relation to an existing transmission line" are unlikely.

National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health

The NES for assessing and managing contaminants in soil to protect human health relates to underground storage tank removal, site investigation and disturbance, remediation when changing the use of land or subdivision. It is mainly given effect by city and district councils. Regulations in the NES do not deal with regional council functions under Section 30 of the RMA. Consents for discharges associated with the above activities are still required as regulations do not address the effect on the environment, only human health.

National Policy Statement for Renewable Electricity Generation

The NPS for Renewable Electricity Generation applies to renewable electricity generation activities at any scale. This NPS will be given effect through the future RPS review and any amendments required in the regional plans at that time.

7. National Policy Statement for Freshwater Management 2011

Proposed plan change 6A gives effect to the NPS for Freshwater Management. The NPS directs regional councils to establish freshwater objectives for all bodies of freshwater within their region. The proposed plan change establishes freshwater objectives through both numerical and narrative standards that reflect the objectives of the NPS and Proposed Plan 6A (Water Quality). The freshwater objectives cover the Otago region.

Where a water body is over-allocated in regards to its freshwater objective (i.e. the freshwater objective is not being met), the NPS requires regional councils to set a target date for that water body to meet its freshwater objective. For ease of understanding target dates have been set for all water bodies in Otago. For those that meet their freshwater objective they must continue to meet their objective from date of notification of the proposed plan change. For water bodies that do not meet their freshwater objectives they have a target date of five years from date of notification to meet their freshwater objective.

To give effect to the freshwater objectives the NPS requires regional councils to set freshwater quality limits for all water bodies within their regions. Maximum limits of concentrations have been set for a number of common contaminants found in rural diffuse discharges. A discharge to water must not exceed these limits and apply to all water bodies within Otago.

For water bodies that do not meet their freshwater objective (i.e. they are over-allocated) or to avoid a water body becoming over-allocated, the NPS directs regional councils to establish methods to

avoid over-allocation. One method to help achieve this is the setting of freshwater quality limits as described above. Other methods of achieving the freshwater objectives include prohibiting discharges with gross effects in water and activities where no mitigation measures are in place to reduce the risk of sediment running off to water.

8. Conclusions

This report identifies the effects based approach is the most effective option for ensuring good water quality throughout Otago. The purpose of proposed plan change 6A (Water Quality) is to address the effects of non point source pollution on water quality in Otago. The proposed plan change focus is on controlling discharges from activities on land rather than controlling the activities themselves, by permitting discharges that meet specified limits for common contaminants found in rural diffuse discharges, prohibiting discharges to water that have a gross effect and activities that have no mitigation measures in place where there is a risk sediment might enter water. This approach reduces the financial cost to land managers as it encourages them to apply the best practicable solution to their local condition rather than enforcing generic best management practices that fail to be effective in every environment.

Proposed Plan Change 6A (Water Quality) gives effect to the NPS on Freshwater Management. It also promotes the purpose of the RMA by enabling activities to occur where innovation and cost-effective solutions are encouraged to reduce the adverse effect of discharges on water quality in water bodies.

9. Supporting information

National Policy Statement for Freshwater Management 2011

ORC, Proposed Water Quality Rules and Standards (presentation to community meetings) 2011

ORC, Regional Plan: Water for Otago

ORC, Rural Water Quality Strategy 2010 (updated in 2011)

ORC Reports to Committee or Council:

- 2007/261: Surface Water Quality and Future Waterway Protection
- 2008/328: Non-Point Source Discharges in Rural Areas and the Regional Plan: Water
- 2009/593: New Approach to Non-Point Pollution
- 2010/0977: Non-Point Source Contaminant: Management Strategy
- 2011/0847: Manuherikia Catchment Water Quality Study
- 2011/1248: Consultation Draft of Proposed Plan Change 6A (Water Quality) to the Regional Plan: Water for Otago
- 2012/0622: Notification of Proposed Plan Change 6A (Water Quality) to the Regional Plan: Water for Otago

ORC Technical Reports:

- Effects of Land Use on Water Quality in the Pomahaka Catchment, 2011
- Otago Lakes Trophic Status: Lake Hayes, Lake Johnson, Lake Onslow, Lake Wakatipu, Lake Wanaka, 2009

- State of the Environment Report Surface Water Quality in Otago, 2007
- Surface Water Quality of the Tokomairiro River, 2007
- Surface Water Quality Study: The Water of Leith & Lindsays Creek; Kaikorai Stream; Waitati River and Careys Creek, 2008
- The Effect of Water Runoff on Water Quality, May 2006
- Water Quality and Ecological Health for the Rivers in the Catlins Area, 2011
- Water Quality and Ecosystem Health in the Manuherikia Catchment, 2011
- Water Quality of the Lindis and Cardrona Rivers, May 2006

ORC, Water Quality Forum 2010 Proceedings: Good Water, Good Farming, 2011

Resource Management Act (1991)