

## RMA Section 32 Report on the Proposed Lake Brunner Catchment Objectives, Policies, and Rules – September 2010

Section 32 of the Resource Management Act 1991 (RMA) requires an evaluation of the objectives, policies, rules and other methods in a proposed regional plan before it is publicly notified for submissions. This report is the Section 32 evaluation of the Proposed Lake Brunner Catchment Objectives, Policies, Methods, and Rules.

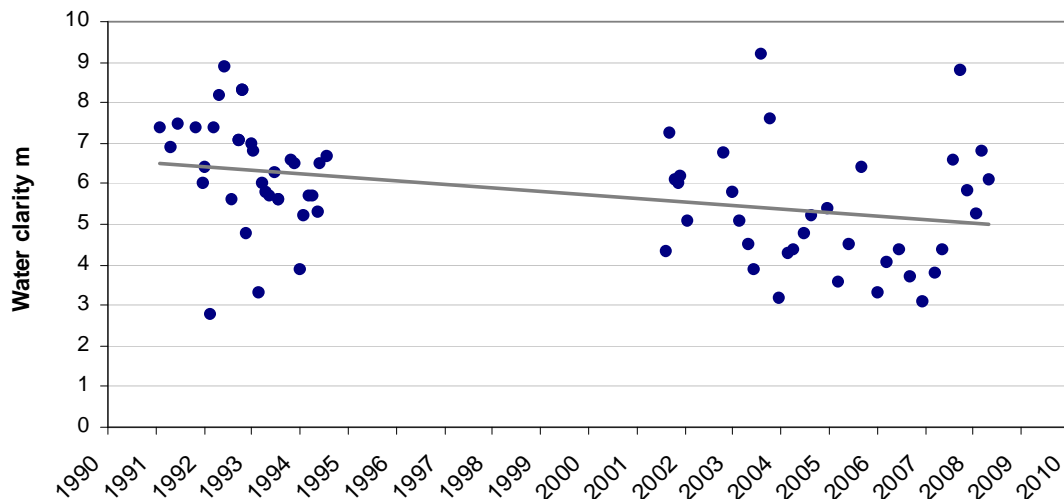
### Background to Plan Change

The Proposed Water Management Plan for the West Coast was notified in 2004. The Plan identified Lake Brunner as a special management area due to its high fishery and tourism values, it being highly prized by Tangata Whenua, and its importance ecologically. However, there were no rules associated with the Lakes' management in the Water Plan as it was notified. A general fertiliser discharge rule in the Regional Plan for Discharges to Land authorises the discharge of fertiliser as a permitted activity.

The Proposed Land and Riverbed Management Plan currently permits grazing on riparian margins provided it does not cause or induce conspicuous pugging. The Council introduced a Stock Crossing Policy in February 2007 which required all crossings of permanently flowing water to be bridged or culverted.

The importance of the Lake has been recognised in the Proposed Water Management Plan through Objective 8.3.1 which states "To maintain, and where practicable enhance, the quality of water in the Lake Brunner catchment". Farm plans were developed with most farmers in the catchment in 2005 and many positive changes have been made. However, State of the Environment Monitoring of the Lake has shown lake nutrients are increasing, and the resulting algal growth is steadily reducing water clarity. Objective 8.3.1 is therefore not being met.

Lake Brunner water clarity 1992 - 2009



The Lake is classified as phosphate limited<sup>1</sup>, which means that if the levels of phosphate into the Lake can be reduced, the water clarity should start to improve.

The Council is undergoing a merge of three of its Regional Plans: Proposed Water Management Plan, Proposed Land and Riverbed Management Plan, and the Regional

<sup>1</sup> Currently the nitrogen:phosphorus ratio in Lake Brunner is over 20:1. The optimum ratio for plant growth is 14:1. Phosphorus therefore, is the limiting nutrient in the Lake and any further increases in P will result in decreased water quality.

Discharge to Land Plan. Consequently this is considered an opportune time to initiate a Plan change to strengthen the management of activities in the Lake Brunner catchment within this new planning framework.

These amendments to the objective, policies, methods and rules for the Lake Brunner catchment is not an isolated management approach. Similar methodologies have been employed in the North Island to manage the overloading of nitrates in Lakes and the consequent environmental issues. While the effects on Lake Brunner are not as bad as those being experienced in the North Island, it is more appropriate to act now to prevent additional phosphorus loading, and loss of water quality.

A copy of the proposed changes are appended to this Report.

### **Section 32 Tests**

The following is an assessment of the RMA Section 32 requirements. The proposed Objective, Policies, Methods, and Rules are considered the most appropriate in halting the decline in lake water quality. Alternatives considered by the Council included a do nothing approach and allow lake quality to continue to decline, or a 'belts and braces' approach with a much higher level of regulation. Doing nothing and allowing further water quality decline will not achieve Objective 8.3.1 Given that there is still a relatively high level of water quality, the 'belts and braces' approach with a high level of regulation is also considered to be inappropriate. Instead the Council has taken an approach which represents a balance of environmental, economic, social, and cultural values.

Section 32(3)(a): Are the objectives the most appropriate way to achieve the purpose of the Act?
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The existing Objective for managing the Lake is not being met, water quality is declining, and it provides no measurable target. The proposed Objective is more appropriate in order to sustainably manage the Lake Brunner Catchment for the following reasons:

- The Objective is consistent with the Act in that it aims to protect the natural character of the Lake and its margins, and safe guard the life supporting capacity of the lake through enhancing and maintaining its values.
- The proposed Objective states a benchmark figure as per the Lake Brunner water clarity testing that has been undertaken in order to monitor effects on the lake. This benchmark clarity figure is representative of where the lake quality was at the time of the Proposed Water Management Plan's adoption in 2004 and is therefore consistent with the original Objective to maintain water quality. The Objective also sets up regulatory measures to manage the effects of activities within the catchment.

Section 32(3)(b): Are the policies, rules, or other methods the most appropriate (with respect to efficiency and effectiveness) for achieving the objectives?
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### **Policies**

Several new Policies have been drafted for the proposed plan change. There is an overarching Policy to reduce phosphorus discharged in the catchment, along with several new Policies for managing stock access to water, intensifying land, reviewing consents, and encouraging the adoption of farm plans. These Policies are considered the most appropriate in meeting the proposed Objective as they seek to reduce the loss of phosphorus to the lake to halt the decline in water quality.

#### **Policy 9.3.3**

Policy 9.3.3 recognises that the quantities of phosphorus leaching into the lake are adversely affecting water quality and therefore seeks to reduce this impact. Phosphorus finds its way into Lake Brunner in several ways, including:

- Direct runoff when rain falls after the application of phosphorus based fertiliser;
- Leaching from soils when Olsen P levels are too high for the soil to retain;
- Direct discharge of manure from animals when crossing water bodies or standing in water bodies to drink; and
- Indirect discharge of animal waste e.g. runoff from stock races, stand off pads, paddocks, plus the discharge of treated effluent from effluent ponds.

Policy 9.3.3 enables consent staff to review the proposed activity to determine the effect it is likely to have in regards to the potential loss of phosphorus to the Lake. This is a balancing of the section 5 principles of the Act, enabling the economic wellbeing of the community, with safeguarding the life-supporting capacity of the lake and its ecosystems. The protection of the lake and its margins, and protection of its values from inappropriate development as per section 6(a) also need to be taken into consideration.

#### **Policy 9.3.4**

Currently 18 of the 22 farms in the catchment have consents to discharge to water following treatment through their effluent pond systems. Policy 9.3.4 recognises that there is a shift required in the disposal of dairy effluent from water to land application, and sets out a clear management approach to move in this direction. This Policy sets out how Council intends to achieve the change through a review of discharge to water, or discharge to land where it may enter water consents (including consents for stand off pads). Due to the relatively small number of consents requiring review, this is the most efficient and effective means of assessing the impacts of each farm.

While there may be a cost incurred in implementing this Policy, this will be partially offset by the reduction in the quantity of fertiliser applied due to the uptake of the nutrients in the effluent irrigated to land, along with environmental benefits from treated dairy effluent not being discharged directly to water.

Policy 9.3.4 is supported by Method 9.4.5 and sets out the direction the Council wishes to take: discharges to land as opposed to water. Timeframes for the implementation of this policy are set at July 2013 to allow landowners time to consider alternative options for effluent management.

#### **Policy 9.3.5**

Stock effluent is rich in nitrogen and phosphorous. This Policy recognises that keeping stock out of waterways reduces direct discharges of phosphorus to water, as cows in particular tend to defecate when in water. The main concern is where herds are moved through creeks and streams and there has already been work undertaken on a number of properties to bridge and culvert waterways where stock cross.

This Policy is supported with a discretionary activity rule to keep stock out of waterways through bridging and culverting, and a permitted activity rule for grazing and livestock access to riparian margins.

The Council has provided options for landowners where numerous crossings are required, or where the number of stock and the frequency of crossing is such that expensive infrastructure is unwarranted. For these individual cases, landowners can apply for consent where the effects of their activities can be assessed and managed in the most appropriate manner.

#### **Policy 9.3.6**

Having regard to Part II of the RMA, Policy 9.3.6 has been developed to undertake two key functions:

1. To control the further intensification of land within the Lake Brunner catchment thereby reducing future potential phosphorus loss to the Lake; while
2. Acknowledging the rights of landowners already farming in the catchment.

The intensification of land generally results in the increased application of phosphorus to raise soil fertility. This Policy is intended to manage development which may erode gains made from other policy approaches proposed, and is appropriate to the overall management approach taken in the proposed Objective, Policy, and Rule amendments.

Policy 9.3.6 uses a discretionary rule to protect the values of the Lake from the effects of humping and hollowing, flipping, v-blading and contouring within the catchment, and also permitted and controlled rules for the application of phosphorus fertiliser.

### **Policy 9.3.7**

Policy 9.3.7 promotes alternative options for the wintering of stock and methods of effluent management to further reduce the potential runoff and leaching of phosphorus. This Policy signals possible options for the future should lake quality not improve with the measures proposed.

## **Methods**

### **Method 9.4.5**

Method 9.4.5 sets out how Policy 9.3.4 is to be implemented and is appropriate to achieving the intent of the overall Plan amendments for the catchment. A change is required from discharging to water to application to land to have environmental benefits and a reduction in the amount of phosphorus discharging directly to the lake. The review of discharge consents in the catchment allows for this changeover to be implemented.

### **Method 9.4.6**

Farm Plans had been developed with farmers in the catchment in 2005. These were a non-regulatory approach to improving systems of which some farmers implemented the recommended best practice. Good work was undertaken by landowners through the installation of fencing and bridging, but unfortunately not everyone participated in this project. With new landowners in the catchment and changes in policy proposed, a review of these Plans would provide new opportunities for reducing adverse effects on the environment through current farming practices.

This method is seen as a positive approach towards identifying and working with landowners to come up with solutions and timeframes for putting in place best practice systems which not only benefits the landowner, but also has a positive environmental benefit. It is also another opportunity for farmers to demonstrate the value of non-regulatory tools in achieving positive change.

## **Rules**

The primary benefit of the proposed rule amendments will be environmental benefits to the Lake over time and achievement of the amended Objective. These benefits will be able to be measured through the improvement in water clarity. Given the relatively high water quality of the lake, it was considered that a 'belts and braces' approach was not necessary. Therefore whilst other Rules could be in keeping with the Policies, the Rules in this proposed Plan change have been considered the most appropriate to meet the Objective.

### **Rules 1, 12, and 14**

The amendments to the conditions of Rule 1 and Rule 12 to exclude the Lake Brunner catchment from the permitted and discretionary activity rules for humping and hollowing, flipping or v-blading is the most effective way to ensure that there is control over the activities taking place in the catchment. These Rules are supported by Rule 14 which is a new discretionary rule to manage these activities in the catchment without affecting farming practices throughout the wider region. This catchment based management approach is considered the most efficient and effective method to manage adverse effects. The discretionary activity rule requires a more detailed assessment of potentially higher-impact humping and hollowing, v-blading, or flipping activities for land intensification on a case-by-

case basis where for example, there may be an increased amount of phosphorus fertiliser required to improve soil fertility. This rule is not intended to prohibit further development, but require the applicant to consider methods of reducing potential future phosphorus loss.

### **Rules 9 and 10**

Rule 9 has been amended to exclude grazing and livestock access to riparian margins for the Lake Brunner catchment. However new Rule 10 still allows for grazing and livestock access to riparian margins in the catchment as long as stock animals are prevented from accessing waterways, with fencing to be placed a minimum of 1m from the bank of the waterway. A note is also included clearly defining what a 'waterway' is for the purposes of the rule to remove any confusion on what stock can, and cannot, access within the catchment.

### **Rule 17**

The intention of the new proposed Rule 17 is to keep stock out of waterways within the catchment. Again this a catchment based management approach recognising that the most significant issues are in the Lake Brunner area and therefore regulating activity but allowing the remainder of the region to continue to operate under the Stock Crossing Policy.

Recognising that there may be a financial cost in relation to this amendment, the Council has timeframed the Rule to take effect from 1 July 2011. Where these requirements cannot be met, landowners can apply for consent where the effects of the activity can be assessed on a case-by-case basis. This is considered the most appropriate means of ensuring that stock are kept from crossing waterways and causing adverse effects.

### **Rules 72 and 83**

Phosphorus fertiliser has been recognised as a contributor to the effects on Lake Brunner. The application of phosphorus fertiliser associated with land development under Rule 14 is a permitted activity if the fertiliser has a water solubility of less than 10%, or a controlled activity if the discharge can meet the standards i – iii of Rule 83 (regardless of solubility/type of phosphorus fertiliser).

Condition (c) of Rule 72 links to Rule 14 (development of land) and sets out a water solubility level of fertiliser able to be applied. This allows for development of land to occur as long as fertiliser used for improving soil fertility is one which is less likely to be lost to waterways through frequent rainfall in the area.

Condition ii) of Rule 83 limits the amount of phosphorus fertiliser being applied per property per year to be no more than the annual average applied between 2005 and 2010. This limit has been set per property and not on a per hectare basis to allow farmers the discretion as to where they may wish to apply larger quantities of phosphorus to stimulate growth where required or to bring fertility levels up.

The purpose of Rules 72 and 83, and the manner in which they have been structured is to ensure that any gains that are made in reducing phosphorus loss to the Lake through the entire suite of policies and rules is not lost through continued land development and continually increasing quantities of phosphorus being applied, and lost, in frequently occurring rainfall, in the catchment. Landowners need to consider alternative ways to offset phosphorus loss.

Reference to the discharge of whey has been removed from Rule 72. Whey is now included in the agricultural effluent definition in the Glossary of the proposed Plan and therefore the conditions of Rule 83 apply. This is considered to be an appropriate amendment given that the conditions are the same for the application of agricultural effluent as those that were previously set in its prior inclusion in the application of fertiliser rule.

### **Rule 84**

Rule 84 is the most appropriate means of supporting the new Policy through making the discharge of effluent a controlled activity within the catchment. Case by case assessment of

discharge of effluent is the only way to ensure that this is done in a manner, and with infrastructure, that will reduce the loss of phosphorus. Under this Rule the Council specifies the range of matters it controls through conditions on the resource consent but the consent must be granted. The purpose of the Rule is to reduce the discharge of treated effluent to water, or to land where it may enter water. The Rule will also support the review of consents in the catchment under Method 9.4.5 and guide landowners towards more appropriate effluent management.

Given the rainfall challenges in the catchment, consideration of the type of system to manage effluent is required. It is likely that low application rate systems will be necessary with adequate storage for poor weather periods, as well as robust contingency procedures.

The application of effluent to land also has an economic benefit to landowners through the nutrients, including phosphorus, it contains, reducing the amount of additional fertiliser required.

Currently 18 of the 22 farms in the catchment are discharging treated effluent to water, or to land where it may enter water, as per their current consents. Initiating the change to irrigate, or apply, effluent to land will further reduce the quantity of phosphorus being lost to the Lake, consistent with the proposed Objective, and is considered to be beneficial environmentally and to the landowner, although there may be some initial cost in changing to the new systems.

### **Glossary**

Minor amendments have been made to definitions for 'ephemeral water body' and 'riparian margins' to provide clarification with respect to the Rules for the Lake Brunner catchment. New definitions have been added for 'low application rate systems' and 'stormwater flowpath' because they are relevant to the new Rules that have been added.

Section 32(4)(a): The benefits and costs of policies, rules, or other methods.
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The primary benefit sought through the proposed Plan change is a reduction in the loss of phosphorus to the Lake Brunner catchment to improve lake water clarity. The suite of Policies, Methods, and Rules developed to achieve the Objective cover all aspects of activity within the catchment which may have an effect on lake water clarity. As explained previously in this Report, the Council is not intending to prohibit development, but has set in place controls to ensure that activities in the catchment are undertaken in a way to limit phosphorus loss.

For some landowners, there may be costs associated with the implementation of the proposed Rules. However, many of the Farm Plans undertaken in the catchment in previous years identified much of the work that should have been undertaken in regards to fencing and bridging of waterways, of which, a large proportion has already been completed. The change that will be required once the review of consents has been undertaken from discharging to water, or land where it may enter water, to discharging to land through irrigation is likely to have a financial impact on landowners. However, this will be partially offset with potential reductions in the amount of fertiliser required to be applied due to the nutrient component of effluent.

Section 32(4)(b): What is the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules or other methods?
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Monitoring of water clarity has been ongoing since 1991, with an interval that was not monitored between 1996 and 2001. There has been a declining trend in water quality over this time period. The sampling that the Council undertakes indicates that farming is the main

contributor to phosphorus loss within the catchment. Sampling of the tributaries in the intensive areas of the catchment (Crooked and Orangipuku Rivers) is much higher than from the Hohonu River which has a much lower proportion of farmed land running off into it. Farming activities contribute more to the decline of water quality in the catchment than other suggested contributors (water fowl, urban sewerage, historic timber milling waste/sawdust, and erosion of riverbanks).

The risk of not acting is that the water quality will continue to decline. This is likely to result in further regulation of activities that is currently unwarranted. The Council considers that given the information gathered to date, it is more appropriate to act now to prevent additional phosphorus loading, and loss of water quality, than when water quality has decreased further.

## Lake Brunner Catchment Proposed Objective, Policies, and Rules

### 9.2 Objectives

- 9.2.1** ~~To maintain, and where practicable enhance, the quality of water in the Lake Brunner catchment.~~ **To improve the water quality of Lake Brunner by managing the adverse effects of activities in the catchment to reach an average water clarity of 5.3m by 2020, and then maintain or enhance this clarity**

#### Explanation

The Lake Brunner catchment water bodies support a range of natural and human use values. Water quality in the lake and its tributaries appears to be declining. The Council wishes to reverse this decline and achieve water quality enhancement to 2004 levels, and where possible higher.

### 9.3 Policies

- 9.3.3 To reduce the amount of phosphorus discharged in the Lake Brunner catchment.**

#### Explanation

Phosphorus is the limiting nutrient in Lake Brunner. Reducing discharges of phosphorus to the lake, or its catchment, will result in improved water quality in the lake over time. Discharges of phosphorus can result from discharges of dairy effluent, the use of phosphorus based fertiliser, and stock access to waterways.

- 9.3.4 To require discharges of dairy effluent in the Lake Brunner catchment to be to land, rather than directly to water.**

The direct discharge of dairy effluent to water is not considered appropriate in the Lake Brunner catchment. Existing consents for discharge to water, or discharge to land where it may enter water (including consents for stand off pads), will be reviewed by 1 July 2013 with strong preference given to discharges to land as opposed to water, taking into account the need to reduce the level of phosphorus entering the lake. Low application rate systems with appropriate effluent storage, are likely to be required.

- 9.3.5 To prevent stock access to waterways.**

#### Explanation

Preference will be given to preventing stock access to waterways to ensure that stock are not defecating directly into water. Preventing stock access is likely to require the fencing of waterway margins and the bridging or culverting of stock crossings. There may be some instances where the number of stock and frequency of crossing is such that expensive infrastructure is unwarranted. For these individual cases, landowners can apply for consent where the effects of their activities can be assessed and managed in the most appropriate way.

- 9.3.6 To reduce the loss of phosphorus to Lake Brunner associated with the intensification of land, by managing phosphate fertiliser use in the catchment so that no net increase in annual use occurs per property.**

#### Explanation

The development of new land in the catchment usually requires high application rates of phosphorus fertiliser to raise soil fertility. This increases the potential phosphorus loss from



this land to the Lake. In order to maintain, or reduce, potential losses of phosphorus to the Lake, future phosphorus use should not exceed past phosphorus use per property.

**9.3.7 To encourage methods of wintering stock that will reduce the risk of phosphorus loss in the Lake Brunner catchment, including the management of effluent that results from wintering methods.**

Explanation

Wintering stock outside the lake catchment avoids potential discharges of phosphorus from excreta deposited onto standoff pads or paddocks during winter. Alternatively, using collection and containment methods associated with herd homes allows for better management of effluent compared to more traditional management practices.

**New Methods**

**9.4.5 To review all existing farm dairy effluent discharge consents in the Lake Brunner catchment by July 2013, to ensure the best practicable option is adopted to reduce or remove any adverse effects on the lake environment, by minimising phosphates discharged.**

Section 128 of the RMA sets out the process for the review of resource consents. Policy 9.3.3 requires a reduction in the amount of phosphorus discharged in the Lake Brunner catchment, in order to improve water quality in the lake over time. Direct discharges of phosphorus occur through discharges of dairy effluent. Policy 9.3.4 requires discharges of dairy effluent in the Lake Brunner catchment be to land, rather than directly to water. Existing discharge to water consents will be reviewed by 1 July 2013 with strong preference given to discharges to land as opposed to water, given the need to reduce the level of phosphorus entering the lake. Low application rate systems and appropriate effluent storage will be required.

**9.4.6 Encourage the implementation of Farm Plans to address best practice on individual farms to reduce effects on Lake Brunner.**

In 2005 Landcare Trust funded the development of individual Farm Plans with land owners in the Lake Brunner catchment. The Farm Plans identified areas that farming practices could be improved with both environmental and financial benefits. Consequently many farms in the catchment improved their management practices which included the fencing and bridging of waterways, and nutrient management. There are now new land owners in the catchment and changes in policy for the area, therefore a review of these Plans would provide new opportunities for adoption of best practice.

**Rules**

**Rule 1. Humping and hollowing, flipping, or v-blading outside riparian margins**

Humping and Hollowing, Flipping, or V Blading in the Non-Erosion Prone Area (less than 12<sup>0</sup> slope) outside of riparian margins are **permitted activities** if **all** of the following conditions are met:

- (a) (1) For Humping & Hollowing and Flipping, the area of the activity does not exceed 5 Hectares per landholding in any continuous 12 month period; and
- (2) For V-blading **either**:
  - (i) The land area for new works does not exceed 10 Hectares per landholding in any 12 month period; **or**
  - (ii) The activity is undertaken on land that has previously been V-bladed; and

- (b) The activity must not cause the visual clarity of any receiving water to decrease by more than 40%, as measured by black disc beyond 12 times the river's width or 200 metres of the activity, whichever is the lesser; and
- (c) No soil or debris is placed directly in any river or lake bed; and
- (d) There is no conspicuous deposition of sediment on the bed of any water body, or on land beyond the boundary of the subject property; and
- (e) The activity does not affect any surface water take; and
- (f) The activity is not within:
  - (1) 50 metres of the Coastal Marine Area on the open coast line; or
  - (2) 20 metres of the Coastal Marine Area elsewhere; or
  - (3) Any wetland identified in Schedule 1; and
  - (4) The Lake Brunner catchment
- (g) When operating alongside a riverbed and there is an iron pan or hard pan layer below the surface of the land then the iron pan or hard pan is not to be disturbed or broken within a distance of 20 metres from the edge of the riverbank; and
- (h) Any culverts or cut and fill batters are designed, and constructed or installed to prevent their failure and avoid causing erosion; and
- (i) The Council is notified in writing of the location and extent of the activity, at least seven working days prior to the works commencing; and
- (j) All areas disturbed by humping and hollowing and flipping are re-vegetated as soon as practicable; and
- (k) All drainage from land subject to the activity is directed through sediment control devices or traps prior to entry to any waterway; and
- (l) Where the humping and hollowing, flipping or v-blading is undertaken to create pasture for grazing by stock, rivers and streams shall be fenced to exclude stock access.

#### **Rule 9. Grazing and livestock access to riparian margins**

Except for within the Lake Brunner catchment, grazing and livestock access to riparian margins are a **permitted activity** provided that:

- (a) The activity does not cause or induce conspicuous slumping, or pugging, or erosion.

#### **Rule 10. Grazing and livestock access to riparian margins in the Lake Brunner Catchment**

Within the Lake Brunner catchment, grazing and livestock access to riparian margins is a permitted activity provided that:

- (a) All farmed stock animals shall be prevented from entering any waterway, with any fences to be placed a minimum distance of 1 metre from the bank of the waterway.

Note: For the purpose of Rule 10, 'waterway' includes any creek, stream, or major farm drains that contain water, but excludes the hollows of humped and hollowed pasture that do not have permanently flowing water.

#### **Rule 12. Humping and hollowing, flipping, or v-blading**

Humping & Hollowing, Flipping, and V-Blading that cannot meet any one of the conditions of a permitted activity in Rule 1, or that occurs within a riparian margin is a **restricted discretionary activity provided that**.

- (a) It is outside of a wetland identified in Schedule 1; and

(b) It is outside the Lake Brunner catchment.

In considering any resource consent under this rule, the council will restrict the exercise of its discretion to the following:

- (a) The effects of erosion, sedimentation of waterways, changes in surface runoff, and measures to avoid, remedy, or mitigate adverse effects on affected persons and infrastructure located downstream;
- (b) Effects on the stability of beds and banks of rivers and streams;
- (c) Adherence to a certified engineering plan;
- (d) Setback distances from wetlands, lakes, rivers, and the coastal marine area;
- (e) Timing of the activity;
- (f) Damage to riparian vegetation, soil, natural habitats and features, and significant sites;
- (g) Effects on surface and sub surface water levels, flows, and quality;
- (h) Erosion and sediment control methods;
- (i) Measures to avoid, remedy, or mitigate adverse effects on stream morphology and substrate composition;
- (j) Cumulative effects;
- (k) Potential damage to any cultural or heritage site/area;
- (l) The relationship of Ngai Tahu and their culture and traditions with their ancestral lands, waters, sites, wahi tapu, and other taonga;
- (m) Monitoring provisions;
- (n) The duration of the resource consent;
- (o) Bonds and financial contributions;
- (p) Review conditions of the resource consent.

**Rule 14. Humping and hollowing, flipping, v-blading, or contouring in the Lake Brunner Catchment**

Any humping and hollowing, flipping, v-blading, or contouring in the Lake Brunner catchment is a **discretionary activity**.

**Rule 17. Stock crossings in the Lake Brunner Catchment**

As of 1 July 2011, stock crossings through waterways in the Lake Brunner catchment are a **discretionary activity**.

Explanation:

The Council is concerned about phosphorus from effluent due to continued stock crossings through waterways in the Lake Brunner catchment. This Rule requires a resource consent for any stock crossing that has not been bridged or culverted by 1 July 2011.

Note: For the purpose of Rule 17 'waterway' includes any creek, stream, or major farm drains that contain water, but excludes the hollows of humped and hollowed pasture that do not have permanently flowing water.

**Rule 72. Application of fertiliser**

The discharge of fertiliser<sup>1</sup> into or onto land is a **permitted activity** provided that all of the following conditions are met:

- a) there is no discernible contamination of water; and

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<sup>1</sup> The definition of 'fertiliser' is contained in the Glossary

- b) any drift derived from the discharge is not noxious, dangerous, offensive or objectionable beyond the target area to such an extent that it has or is likely to have an adverse effect on the environment;
- c) ~~any discharges of whey as a fertiliser meets the additional conditions:~~
  - ~~(i) there is no runoff into water bodies, drains, groundwater or coastal water;~~
  - ~~(ii) there is no ponding or pasture burning;~~
  - ~~(iii) the application rate of any combination of whey, agricultural effluent, sludge, and wastewater does not exceed the equivalent of 275kgN/ha/year.~~

*And*

*In the Lake Brunner Catchment:*

*d) Phosphorus fertiliser shall not be discharged to land that is developed under Rule 14 after 1 January 2011 unless it has a water solubility of less than 10%.*

- e) ~~Any discharge of whey as a fertiliser meets the following additional conditions:~~
  - ~~(i) there is no runoff into water bodies, drains, groundwater or coastal water;~~
  - ~~(ii) there is no ponding or pasture burning;~~
  - ~~(iii) the application rate of any combination of whey, agricultural effluent, sludge, and wastewater does not exceed the equivalent of 275kgN/ha/year.~~

~~If an activity is unable to meet the conditions of this Rule, then it is a discretionary activity (See Rule 28).~~

### **Explanation**

~~In making the application of fertilisers a permitted activity, the Regional Council recognises that the adverse effects associated with the activity are *generally* minor and can be controlled through the conditions imposed. Condition (a) is intended to avoid discharges to land which may result in contaminants entering water under Section 15(1)(b) of the Resource Management Act. Direct discharges to water are not covered by this Plan.~~

~~Condition (b) is included to ensure that fertiliser does not drift beyond the targeted area and cause adverse effects. The terms "noxious, dangerous, offensive or objectionable" are from Section 17 of the Resource Management Act 1991, and provide criteria to assess whether a fertiliser discharge is having a more than minor adverse environmental effect.~~

~~Condition (c) is intended to avoid potentially greater impacts from the application of whey, which differs from manufactured fertilisers in that it has a higher Biological Oxygen Demand (BOD).~~

~~The maximum nitrogen application rate in condition (c) is set to be consistent with the maximum rate referred to under Rule 13, condition (d) for agricultural effluent discharges. Whey, agricultural effluent, sludge and wastewater are slow release nitrogen fertilisers (compared with manufactured quick release nitrogen fertilisers), and greater care is needed with their application to avoid nitrate contamination from over application. Nitrate contamination of water bodies can cause algae blooms, which reduces the amount of oxygen in the water and adversely affects fish habitat.~~

## **Rule 73. Land application of agricultural effluent**

The discharge of agricultural effluent into or onto land, *except in the Lake Brunner catchment*, is a **permitted activity** provided that *all of* the following conditions are met:

- (a) no dairy farm, piggery, or poultry farm agricultural effluent is discharged within:
  - (i) ~~100~~ 50 metres of any well or bore used for potable water supply or stock water supply;

- (ii) 20m of any surface water body;
- (iii) 20m of any drain with flowing water;
- (iv) 20m of any adjoining property;
- (b) there is no runoff of agricultural effluent into surface water bodies, drains, groundwater or coastal water;
- (c) there is no ponding or flooding visible surface flow of effluent, and or pasture burning;
- (d) the application rate from any combination of ~~sludge accumulated from treatment facilities, storage facilities, agricultural effluent, wastewater and whey~~ is at a rate not exceeding the equivalent of 275kgN/ha/year, and shall not exceed 20mm in depth per day;
- (e) ~~sludge accumulated from storage facilities is not applied to land at a depth greater than 20 millimetres (200m<sup>3</sup>/ha/yr)~~;
- (f) there are contingency measures in place to ensure that there is no contravention of these conditions in the event of pump or other system failure, or unsuitable soil conditions.

**Note:** This Rule applies to agricultural effluent which is collected and discharged from a point source into or onto land.

The maximum nitrogen application rate in condition (d) is set at 275kgN/ha/year as agricultural effluents are slow-release nitrogen fertilisers.

The requirement for contingency measures is for situations where any discharge would not be able to meet conditions (b), (c), (d) of the Rule. If any of the conditions cannot be met a resource consent is required.

For the purpose of this Rule, drains do not include the hollows of humped and hollowed land unless they contain water at the time of discharge. If hollows contain water at the time of discharge, then this may require a consent if it cannot meet the conditions of Rule 61 .

Good practice guidelines such as how to calculate whether the maximum nitrogen application rate is being met, maximum depth of effluent to be applied, and adequate storage for herd size can be obtained from the Regional Council.

This Rule applies only to discharges to land. There are additional requirements to control odour effects from agricultural effluent discharges to air in the Regional Air Quality Plan, and that Plan should be consulted.

### **Rule 83. Application of phosphorus fertiliser associated with Rule 14 in the Lake Brunner Catchment**

The discharge of phosphorus fertiliser into or onto land in the Lake Brunner Catchment associated with land development under Rule 14 after July 2010 is a **controlled activity** provided that all of the following standards are met:

- i. Soil testing for Olsen P shall be undertaken at least annually after 1 January 2011 in accordance with the soil testing protocol in Schedule 12, and the results supplied to the Regional Council by March of every year; and
- ii. The amount of phosphorus fertiliser applied per property per year is to be no more than the annual average applied between 2005-2010; and
- iii. Any drift derived from the fertiliser discharge is not noxious, dangerous, offensive, or objectionable beyond the target area to such an extent that it has or is likely to have an adverse effect on the environment.

A resource consent is required and must be granted, however the council reserves control over:

- a) the extent to which the proposed fertiliser application methods prevents the loss of phosphorus to Lake Brunner;

- b) the area of land that phosphorus fertiliser will be applied to;
- c) monitoring requirements;
- d) the duration of the consent; and
- e) review conditions of the consent.

**Rule 84. Land application of agricultural effluent in the Lake Brunner catchment**

The discharge of agricultural effluent into or onto land, in the Lake Brunner catchment, is a **controlled activity** provided that:

- (i) there is no discernible runoff of agricultural effluent into surface water bodies, drains, or coastal water;
- (ii) no agricultural effluent is discharged within:
  - a) 50 metres of any well or bore used for potable water supply;
  - b) 20m of any surface water body;
  - c) 20m of any drain with flowing water;
  - d) 20m of any adjoining property;

A resource consent is required and must be granted, however the Council reserves control over:

- (a) the extent to which the proposed treatment system prevents the loss of phosphorus to Lake Brunner;
- (b) the rate of effluent application;
- (c) the area of land effluent will be discharged into or onto;
- (d) the return period for application of the effluent;
- (e) design and operation of the effluent system;
- (f) storage capacity of ponds for wet periods;
- (g) equipment maintenance requirements;
- (h) effluent management and spill contingency plans;
- (i) monitoring requirements;
- (j) the duration of the consent;
- (k) review conditions of the consent.

Explanation

The discharge of agricultural effluent to land is the preferred effluent management treatment system in the Lake Brunner catchment to meet the objective of reducing the amount of phosphorus entering the lake. Application of effluent to land is sustainable in the long term and also allows effluent to be utilised as both a fertiliser and a soil conditioner.

**Glossary**

**Agricultural effluent:**

Means effluent from livestock which is collected or otherwise managed and disposed of as a point source discharge to land, and includes sludge *and whey*. The term does not include effluent discharges for individual animals to land.

**Ephemeral Water Body:**

A water body, *which has the physical characteristics of the bed of a river*, that dries periodically, typically holding water for only a few days to months. ~~or stormwater flowpaths which only carry water during storm events or for short periods thereafter.~~

**Low application rate system:**

Is a system which is capable of applying a depth of less than 5mm/hour when necessary.

**Stormwater Flowpath:**

Is a channel that does not have the physical characteristics of the bed of a river, and carries water only during storm events or for short periods thereafter.

**Riparian Margins:**

The land area within a certain distance (see table below) of any:

1. lake or river; or,
2. major farm drain in the Lake Brunner catchment

but does not include:

- (iv) an ephemeral water body outside of the Lake Brunner catchment;
- (v) a stormwater flowpath;
- (vi) any artificial watercourse (including race, electricity canal, or farm drain identified in 2, artificial pond or water hole).

...

Noting that a riparian margin may remain grassed and unfenced except where Rule 6.1.1.1(l) or Rule 10 applies.