ORARI-TEMUKA-OPIHI-PAREORA WATER ZONE MANAGEMENT COMMITTEE

on

Monday 30 January 2017

1pm

Council Chamber
Timaru District Council
2 King George Place
Timaru

ORARI-OPIHI-PAREORA WATER ZONE MANAGEMENT COMMITTEE

Notice is hereby given that an Orari-Temuka-Opihi-Pareora Water Zone Management Committee meeting will be held on Monday 30 January 2017 at 1pm, in the Council Chamber, Timaru District Council, 2 King George Place, Timaru.

Committee Members:

John Talbot (Chairman), David Anderson, Kylee Galbraith, John Henry, Mandy Home, Ivon Hurst, Richard Lyon, Hamish McFarlane, Anne Munro, James Pearse, Ad Sintenie and Mark Webb

ORARI-TEMUKA-OPIHI-PAREORA WATER ZONE MANAGEMENT COMMITTEE

30 JANUARY 2017

1		**Apologies**
2		**Register of Interest**
3		**Community Forum**
4	**1**	**Confirmation of Minutes**
5		**Facilitator Update**
6	**7**	**Catchment Group Update**
7	**12**	**N Check: An alternative model to OVERSEER® for estimating nitrogen losses**
8	**verbal**	**Feedback on Draft Annual Report**
9	**To be tabled**	**HCP: 2017 Work Programme**
10	**16**	**HCP: Technical Work Update**
11	**18**	**HCP: Freshwater Management Units**
12	**verbal**	**HCP: Community Engagement**
13		**Close**

ORARI-TEMUKA-OPIHI-PAREORA WATER ZONE MANAGEMENT COMMITTEE

FOR THE MEETING OF 30 JANUARY 2017

Report for Agenda Item No 4

Prepared by Joanne Brownie
Secretary

Confirmation of Minutes – Committee Meeting 5 December 2016

Minutes of the December 2016 Committee meeting.

Recommendation

That the minutes of the Committee meeting held on 5 December 2016, be confirmed as a true and correct record.

ORARI-TEMUKA-OPIHI-PAREORA ZONE WATER MANAGEMENT COMMITTEE

MINUTES OF AN ORARI-TEMUKA-OPIHI-PAREORA ZONE WATER MANAGEMENT COMMITTEE MEETING HELD IN THE COUNCIL CHAMBER, MACKENZIE DISTRICT COUNCIL, MAIN ROAD, FAIRLIE, ON MONDAY 5 DECEMBER 2016 AT 1PM

PRESENT John Talbot (Chairperson), David Anderson, Kylee Galbraith, Ivon Hurst, Richard Lyon, Hamish McFarlane, Anne Munro, James Pearse, Ad Sintenie and Mark Webb

APOLOGIES Lan Pham**,** Mandy Home, John Henry

IN ATTENDANCE Olivia Smith (Facilitator), Dan Clark (Senior Hydrology Scientist and Technical Lead), Raymond Ford (Principal Planner), Michael Hide (Zone Implementation Team Manager), Nic Newman (Facilitator), Peter Ramsden (Tangata Whenua facilitator), Alexia Foster-Bohm (ECan), John Benn (Department of Conservation), Jeremy Boys Opuha Water Ltd/Central SC Water), Chanelle O'Sullivan (Landcare Trust), Glen Smith (Orari-Rangitata Catchment Group), Jan Finlayson, Al Williams (media).

1 KARAKIA

The meeting began with a karakia from Peter Ramsden.

2 REGISTER OF INTERESTS

There were no additional interests advised.

3 COMMUNITY FORUM

Jan Finlayson asked that when an issue is raised at the community forum, any further discussion or response, be made when the person who raised it is present, in order to provide the person with a right of response.

Further to her previously raised concerns regarding managed aquifer recharge, Jan asked that committee members re-familiarise themselves with a document, prepared by the Aoraki Conservation Board which had been made available to the OTOP Committee some time ago. The paper was provided when the Conservation Board was looking at the Freshwater Management Policy Statement, and was appended to that document. The document listed a significant number of contaminants in the Rangitata River, outside of what might be expected. She advised that there is an update to the document being prepared which will be available in the next few months.

To help with Jan's query, Mark Webb referred to an appendix to a paper on ECan's state of the environment monitoring which talked about the annual testing of a number of contaminants which may indicate there is more testing being carried out than might be apparent.

It was agreed that ECan staff could follow this up.

4 CONFIRMATION OF MINUTES

Proposed Richard Lyon
Seconded Hamish McFarlane

"That the minutes of the Orari-Temuka-Opihi-Pareora Water Zone Management Committee meeting held on 21 November 2016 be confirmed as a true and correct record."

MOTION CARRIED

5 FACILITATOR UPDATE

- The Facilitator advised that the meeting dates for 2017 have been circulated, with the first meeting to be held on 30 January 2017.
- The draft annual report is not yet available but will be circulated mid December or early January for committee members to comment on, with a view to finalising the report at the meeting on 30 January.

6 OTOP ZONE NORTHERN BOUNDARY

The Committee considered a report by Raymond Ford and Jason Holland, recommending a change to the OTOP zone planning boundary. The current Healthy Catchment Projects boundary does not align with the planning boundary in the Land and Water Regional Plan – which creates a disconnect between where the planning line runs and the area of the technical work of the Healthy Catchments Project (HCP). If the boundary was realigned the whole ground allocation zone could be run as one unit. Realigning the boundary would mean that landowners in the affected area would need to be notified so they engage in the Healthy Catchments Project.

It was pointed out that the area is subject to the Rangitata Conservation Order, which takes precedence and the minimum flow prescribed in that Order must be adhered to. Dan Clark confirmed that the boundary for the technical work is based on hydrological catchments.

Glen Smith, the Chairman of the Orari-Rangitata River Catchment group said he had not been aware till recently that the area was not in the Healthy Catchments Project area. Mr Smith said the underlying concern is around the nutrient status of that zone, given the number of years it has been operating as a green zone. Landowners may have been planning ahead on the basis that it will remain a green zone. However moving the boundary does not overly concern them as sooner or later it will come under the plan change that puts subregional rules in place.

It was then suggested that the area being talked about, (together with the Lyalldale area which is in a similar situation), be considered as part of the HCP - the technical work be looked at and assessed as to whether the actions on the ground are suitable, and to see if the limits are appropriate. If for example there is no need to change say nutrient limits in these areas, there may be no need to change the planning boundary. However if the limits do need to change as part of the project, there will be an opportunity at the end of the project to recommend that the planning boundary is changed accordingly.

Proposed Ivon Hurst
Seconded Mark Webb

a "That the Committee affirms that the Healthy Catchment Project includes that part of the alpine zone alongside the Rangitata River from Arundel to the coast and also includes the area identified to the south in the Lyalldale region.

b That appropriate communications are undertaken to engage with the community (including the Orari-Rangitata Catchment Group and Pareora Catchment Group) to advise the landowners in the area affected, and encourage them to be involved.

c That further advice be provided during the Healthy Catchments Project on technical and planning implications."

MOTION CARRIED

7 ECONOMIC ASSESSMENTS – HEALTHY CATCHMENTS PROJECT

Dan Clark provided an update on the economic assessments – to date, the current state has been assessed (by BERL), with feedback from the zone committee and other stakeholders collated into a report which is now available. There will be a report with scenario 2 – in zone gains – with the economic assessment alongside, in February 2017.

The current pathway is not being fully assessed as a scenario but will be used as a baseline against which all the other scenarios will be assessed. BERL is being commissioned to model what the current pathway looks like so that the future scenarios can be compared with it – this work will include assessment of the regional economics, district and catchment scale economics and industry level assessment. BERL will work with industry stakeholder groups to gain the best data available. Investigation of specific rules or applications in more depth will happen at the solution package phase.

When queried regarding externalities, Dan explained that these are not easy to quantify. However there was some support for these to be included and it was agreed that ECan staff will check on the capability and resources to assess externalities as part of the process.

The economic work on the current state is at a higher level – regional, catchment, industry level whereas at the solution phase, economic analysis of specific solutions will need to occur. Several industry groups such as Dairy NZ, are preparing to undertake some of this economic work in the solution phase. ECan project staff need to determine exactly what work industry groups will complete, coordinate it to make sure there is no duplication and no gaps, and also ensure that the timeframe fits with the HCP to inform the collaborative decision making process. It was suggested that economic yield in value-added industry vs primary industry be made explicit in the reports.

8 COMPLIANCE MONITORING RESULTS 2015/2016

The Committee considered a summary of the compliance monitoring results for the Canterbury Region and the OTOP zone for 2015/16, with Mike Hide talking through the results. A summary of last years compliance report was tabled, in order that committee members could make a comparison. A change in how the results are presented includes aligning compliance results with farm environment plan audits. The Committee indicated it was generally happy with the level of

detail and the current format to continue in order that a comparison between the two years can be made more easily. A little more detail on what the agricultural details are and the result of any court cases would be of interest.

9 PROPOSED PRACTICAL ACTION PLAN

The Committee considered a report by the Zone Manager on the proposal to develop a Practical Action Plan rather than a 5 year work programme. This is suggested because it is hard to build a 5 year work programme with continuous progress being made and recommendations being developed, which means the situation may well change in a few months time. In mid 2017 the recommendations will allow the formation of a longer term plan, including the non statutory actions, and the plan change will be implemented when it comes through.

The action plan would comprise the existing work and incorporate the feedback from the catchment groups and community meetings.

The practical action plan will include –

- Communications
- Consent monitoring
- Immediate steps
- Good Management Practice/Farm Environment Plans.

The priority areas suggested are Kakahu Catchment, Ashwick Flat, Community Protection zone, biodiversity corridor, Washdyke Taskforce programme, Ohapi Catchment, Barkers Creek, urban engagement and weed clearance/creation of gravel islands in the Orari.

The situation with School Creek in Pleasant Point was raised, with the creek often completely dry but on occasions running well. It was agreed that Mike Hide check on the previous investigations on this creek.

Comment was made that good liaison is needed with catchment groups on the Action plan, especially on what is expected of catchment groups and to give them assurance that their views are being taken into account.

10 CATCHMENT GROUP UPDATES

Most of the catchment groups have not met recently as they were involved in the public meetings instead. Nic Newman gave a brief update to the committee on the progress with the Washdyke project.

11 REGIONAL COMMITTEE UPDATE

The Regional Committee has not met since the last OTOP meeting. As part of the Regional Committee meeting to be held next week, each regional committee zone representative is being asked to report on a number of issues -

- *critical issues the Committee needs to achieve in its zone in order to deliver the CWMS targets* - Committee members suggested that the following be included – access to alpine water, involvement of all people in the zone, changes in people's behaviour (use phormidium issue as a prime example).

- *what has already been achieved over the last 6 years* – work that has been done on the modelling of the demand for alpine water and how that might be distributed, the work of the catchment groups, establishment of Geraldine Water Solutions, and the number of biodiversity projects.

- *what the Committee is currently working on and the challenges and opportunities they present* – Healthy Catchment Project, getting a community water monitoring project underway, involving young people, working with farmers to complete their Farm Environment Plans.

- *what are the priorities over the next 2-5 years* – the Healthy Catchment Project.

- Where could the Regional Committee add value to the work of our zone – solve our access to alpine water, solving major infrastructure issues, phormidium, coordinating the science, establishing biodiversity corridors.

The meeting concluded at 3pm.

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Chairperson

ORARI-TEMUKA-OPIHI-PAREORA WATER ZONE MANAGEMENT COMMITTEE

FOR THE MEETING OF 30 JANUARY 2017

Report for Agenda Item No 6

Prepared by Janet Gregory
South Island Team Leader
NZ Landcare Trust

Catchment Group Update

Progress

Catchment groups have had limited activities in the last 3 months as they have been focussing on attending the public meetings of the Healthy Catchments Project and the volunteer facilitators having a break over the Christmas period. Kakahu group continued their river walk, although in wet weather with small number.

Meetings and events are now being planned:

Orari Group looking at GMP with ECan Southern Team's Helen and Brian on 2nd Feb.

Waihi/Te Moana Group (plus guests from Kakahu group) have a February field day proposed, including water (quality as fish habitat), deer and dairy farm visits.

Te Ana A Wai group (plus guests from Upper Opihi group) a February field day including protecting on-farm bat roost & feeding habitat, Maori cultural sites and GMP on-farm.

Trust-led activities planned for next period

- 26 Jan - ECan/Janet Gregory; discussion on transition of project from July 2017.
- 16 Feb - Introduction to Irrigation field day (flyer attached) at Seadown Rd. Note this starts at 6.30pm with BBQ, run in conjunction with Lower Opihi Catchment Group. Open to the public and good for ECan staff and ZC members. Registrations if possible, via Janet.
- Date TBC- Beef+Lamb NZ/Ecan, farmer meeting to discuss importance of being involved in Healthy Catchment Project meetings, prior to next round of HCP meetings.
- Feb TBC; deer industry monitor farm day with focus on environmental KPI.s
- 8 Mar; FEP workshop for farmers, Geraldine area.
- 23 Mar; Dairy NZ event to promote wintering programme.
- 30 Mar; National workshop on GMP- what has been done on catchment projects, Christchurch venue to allow easier logistics.
- 31 Mar; Biodiversity Smartmap information, first draft of information from Mike Harding.

Catchment Group flyers
We are working on a series of flyers for the catchment groups that can be circulated in the local community and used to promote what they are doing. Kakahu is the first one in a draft form, with the others using a similar template.

Biodiversity Smartmap
Mike Harding has agreed to supply the information for the proposed Smartmap, outlining different habitat types that can be found in different landscapes in the zone, then stating what species are likely to be found there and management options. It will use a lot of photos as well. The first draft of information will be made available to us by 31 March and we are working closely with Robert Carson-Iles from ECan and GIS staff.

National GMP Workshop
This is scheduled for 30 March and planned for Christchurch to allow for easier logistics.
The aim is to have representatives from catchment groups, industry bodies, agribusiness, regional councils and central government attend.
Discussions will focus on what is happening on farms, implementation programmes, auditing programmes and ways we can improve adoption. The programme and attendance list will be confirmed in the next 3 weeks.

I am presently on a secondment to MPI in Christchurch for 6 weeks till 3 March (working 4 days/week, with 1 day/week allocated to NZ Landcare Trust work.

Rhys Taylor (ECan Community Engagement Coordinator for OTOP Zone) is in Timaru office most Mondays and based in Geraldine on other days/flexible hours. He is attending ‘Noho Marae’ at Arowhenua on 23-24 March.

KAKAHU CATCHMENT GROUP

December 2016

Welcome to the Kakahu Catchment Group. Below we have outlined our vision for the catchment, some of the actions we want to focus on to improve water quality and biodiversity in our area and the good management practices we will work together to promote.

We are also keen to work with farmers, landowners and community members to improve special areas in our community.

We welcome your involvement so feel free to contact us.

Kakahu Catchment Group Vision

'The Kakahu Catchment will provide for safe drinking water, recreation, enhanced cultural and wildlife values, and support sustainable, economic activities for the immediate and long term future.'

What do we know?

- Visual pollution is generally considered bad by most people i.e. Algae, Didymo etc.
- 4-5 families within the catchment get their drinking water from the Kakahu
- Bank slumping creates sediment discolouration which needs to be addressed.

At this stage, we still have the opportunity to improve water quality through action on the ground and fencing of water ways where possible.

Photos: Rhys Taylor of Kelly Bennett's bog

Findings from our Kakahu River visit to the top of the Kakahu Catchment in August 2016

- Visited Blakely Pacific logging site in the Geraldine Forest, (head of the Kakahu Stream) and looked at how they manage logging to minimise erosion with little disturbance to the stream. Thanks for showing us what is happening to reduce sediment loss.
- Logging has been changed in the Kakahu to predominantly Douglas Fir near the river that will be a 50-year harvest rotation. (To find out the specific requirements to protect the river during logging and what they implement email nhenderson@blakely-pacific.co.nz). tbc
- Confluence of Stony Creek & Kakahu River – Here we found major bank erosion which is similar to other sites on the Kakahu. All unsure how to manage it effectively without spending lots of money to reshape banks to stop this happening & planting it out. It would cause a lot of ground to be lost for the farmers and still might not solve the issue. Everyone agreed it was a natural process in this catchment.
- Looked at the Kakahu Irrigation Ltd (KIL) discharge site into the Kakahu River. It looks good, although it wasn't flowing when we visited. We had a discussion on requirements for excluding stock from waterways and what these are & some.
- Looked at Kelly Bennetts raised peat bog with Carex secta (Pedicelled sedge) plants. This has received some funding from ECan's First Steps programme to protect and enhance the bog with planting and weed control.

Healthy Catchments Project:

Gain information and be part of the development of the sub regional plan

http://canterburymaps.govt.nz/webapps/StoryMapSeries/otop.html

Kakahu in flood. Photo: Jemma ?

KEY TASKS FOR THE CATCHMENT

Biodiversity:

- Understand the values of the native areas before trying to change them.
- Gain funding to be able to help farmers with bat populations.
- Approach farmers with bat populations and develop plans to protect and enhance their habitat.
- Promote habitat requirements for bat populations.
- Map significant areas of biodiversity.

Water quality:

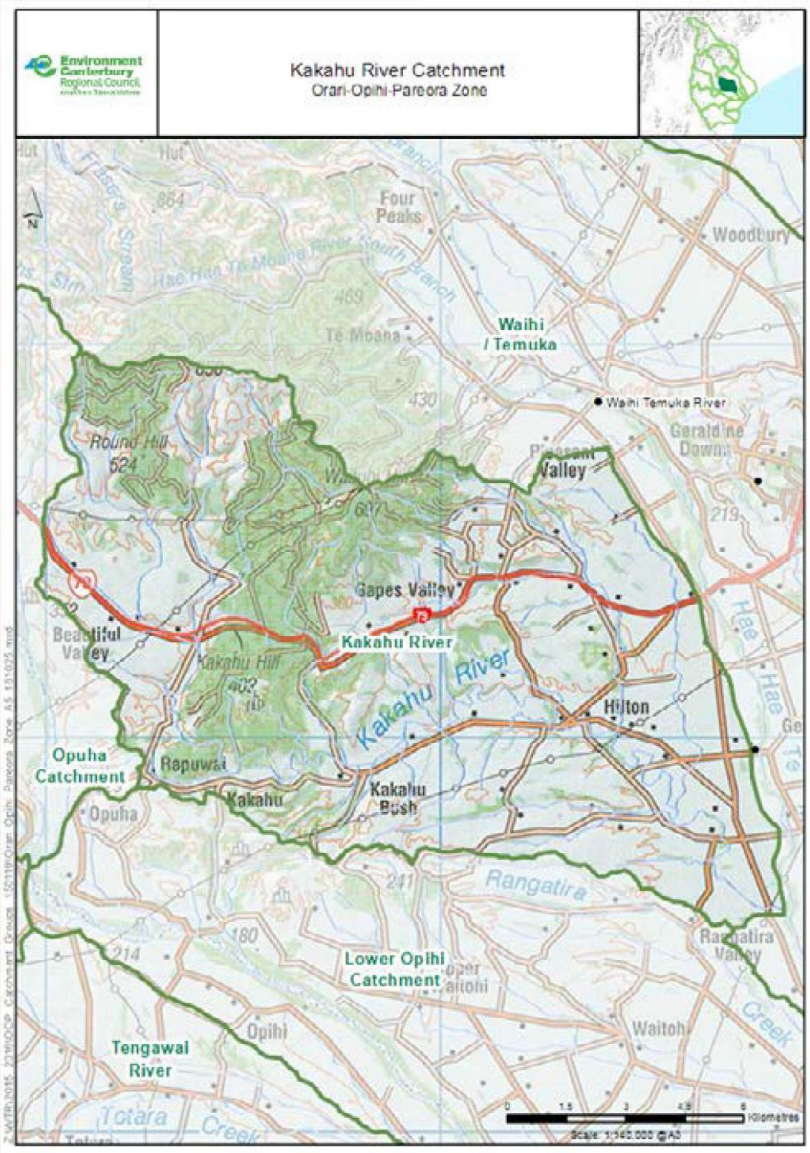
- Identify causes of poor water quality though a river tour.
- Monitor quality indicators to identify trends over time.
- Promote benefits of riparian fencing e.g. Provides a riparian buffer to filter run-off .
- Exclude stock from significant waterways, drains and wetlands to prevent damaging banks and defecating in water.

Water quantity:

- Map the catchments irrigation.
- Promote irrigation efficiency.
- Retaining vegetation cover in gully systems where steep

Good Management Practices:

- Winter crop management and follow up crops to reduce nutrient losses.
- Winter crop paddock selections and grazing management.
- Cultivation practices and timing adjusted to minimise N loss. Manage periods of exposed soil between crops to reduce the risk of erosion, overland flow and leaching.
- Farm Environment plan and nutrient budgets.
- Keep Olsen P at agronomic optimum, usually 20-30, using soil testing.
- Nitrogen application rates and timing set to match growth cycle of crop and soil moisture conditions, taking into account all sources of nutrients are applied.



- Ensure effluent storage meets requirements for when soils are saturated and meet regulatory requirements.
- Silage stacks are located at least 50m from surface water and any leachate is directed to pasture or the farms effluent system.
- Any offal or rubbish pits are sited to minimise risk of leachates entering ground or surface water.
- www.landcare.org.nz/files/file/1547/Roadmap%20to%20Good%20Mgt%20Practices%20Poster_A3.pdf

  http://bit.ly/2guGfhF

For more information on riparian planting, good management practices or wintering, please email Chanelle for a flier on david.chanelle@hotmail.co.nz

Contact details:
Catchment Group Facilitator
Martin O'Connor, Ravensdown
martin.o'connor@ravensdown.co.nz
021 900 272 / 03 688 3080

NZ LANDCARE TRUST

As part of the
Working for Opihi Water project you are invited to an

INTRODUCTION TO IRRIGATION FIELD DAY

For non irrigators who are interested in water issues and want to understand the basics of irrigation.

- Why irrigate, the benefits for soil and plant growth
- Different types of irrigation systems
- Efficient water use & monitoring tools
- Consent requirements

Thursday 16th February 2017

6.30pm followed by BBQ

At Brendan & Katya Caird's property
Fonterra Supply No. 36696
1026 Seadown Road, Timaru

Meet at 1026 Seadown Road down the Tanker Track to the cowshed.

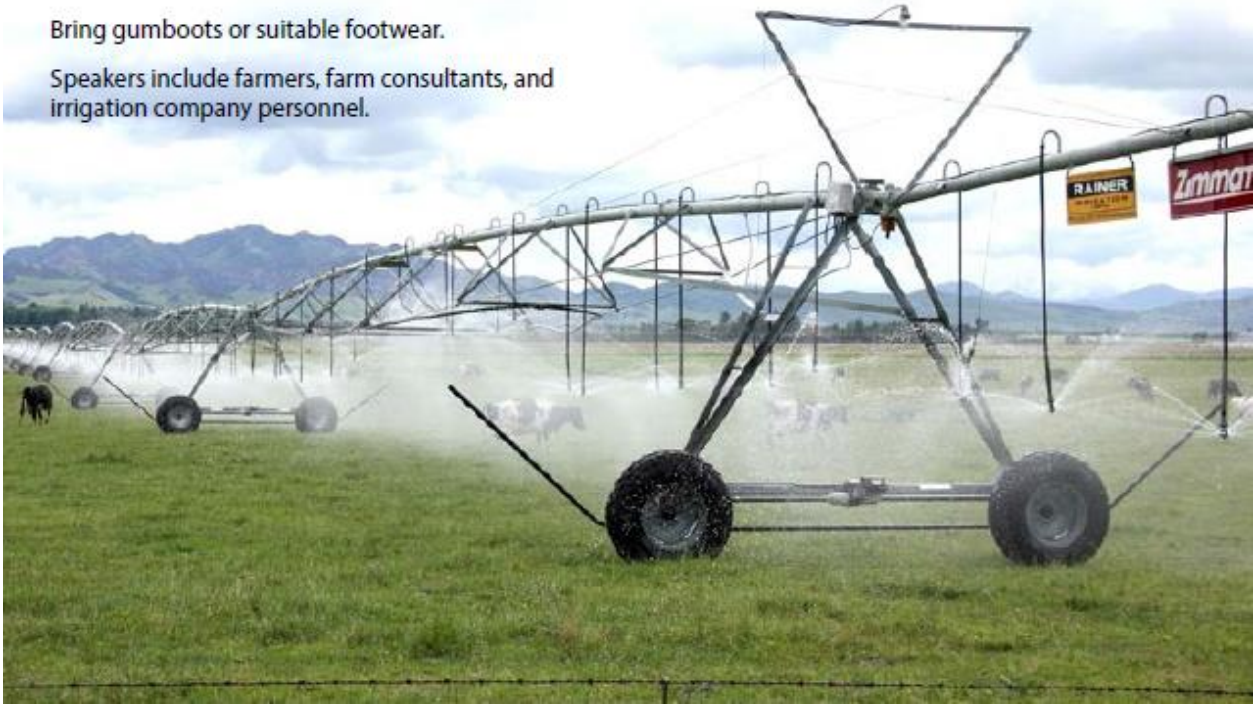
Bring gumboots or suitable footwear.

Speakers include farmers, farm consultants, and irrigation company personnel.

Please RSVP by 14th February to/or for further information contact:

Janet Gregory, NZ Landcare Trust
e. janet.gregory@landcare.org.nz
p. 027 222 4005

or Chanelle O'Sullivan
e. david.chanelle@hotmail.co.nz
m. 0274 440 742



ORARI-TEMUKA-OPIHI-PAREORA WATER ZONE MANAGEMENT COMMITTEE

FOR THE MEETING OF 30 JANUARY 2017

Report for Agenda Item No 7

Prepared by Tami Woods
Regional Implementation

N Check: An alternative model to OVERSEER® for estimating nitrogen losses

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Purpose

To provide the Zone Committee with information about N-Check that could be used as an alternative to OVERSEER® in the OTOP Zone.

Background

The current farming activity rules in the Canterbury Land and Water Regional Plan require many landowners to model nitrogen loss below the root zone using OVERSEER® or an equivalent model approved by Environment Canterbury's Chief Executive.

Currently OVERSEER® is the most commonly used model for measuring nitrogen leaching on Canterbury properties and there are two equivalent models approved by Environment Canterbury's Chief Executive. These include a model specifically for pig farming and also a model called N-Check which was approved in late 2016 for use in limited circumstances in the Selwyn Te Waihora catchment.

Like OVERSEER, N-Check uses key information about a farm, including location, type, inputs and management, to calculate an estimated nitrogen loss from the property. This loss rate is calculated using the 'engine' developed in the Matrix of Good Management Project. Essentially, N Check requires landowners to answer a number of simple questions on a free web based application. N-Check then uses this information, and that from representative farms (modelled with OVERSEER®) to determine a nitrogen loss rate for the property.

At this time of approving use of N-Check in the Selwyn Te Waihora catchment Environment Chief Executive also advised that he would consider approving the use of "N-Check" in other zones if supported by zone committees.

Recommendation

Environment Canterbury staff recommend that the Zone Committee supports the use of N-Check in the OTOP Zone as an alternative to OVERSEER® in the following circumstances:

- **To determine whether consent is required and a farm is below a fixed nitrogen loss rate threshold.**
- **In the consent process and during on-farm audits in the short term, until 2022, for horticultural and arable farms while further improvements are made to OVERSEER®.**

Attachment: Frequently Asked Questions

FAQs 'N-Check'

Where did the idea of an alternative to OVERSEER® come from?

Horticulture New Zealand and Foundation for Arable Research have been exploring an interim (until 2022) alternative to OVERSEER® while further work is undertaken with OVERSEER Ltd to improve how OVERSEER® models complex horticultural and arable systems.

The Selwyn Waihora Zone Committee identified the need for an alternative to OVERSEER® to help deliver the Committee's vision, improve on-farm practices, reduce nitrogen losses and achieve water quality and cultural outcomes. The committee sought its use for farmers to determine whether they were above or below a nitrogen loss threshold and required consent and in the consent process for horticultural and arable farmers and for farms with losses below 15kgN/ha/yr in the catchments phosphorus and sediment risk area and/or cultural landscape values management area.

Both processes identified that the Council had an alternative model to OVERSEER® 'N-Check' that could be used.

What's the problem?

While OVERSEER® provides robust estimates of nitrogen losses for pastoral systems, it is currently less robust for arable and horticultural systems.

There is not the capacity to generate enough OVERSEER® budgets for farmers to meet deadlines in new farming activity rules. There is a back log of farmers waiting for OVERSEER® budgets.

Why is this important?

A number of catchments in the region are not achieving the water quality outcomes set in the Canterbury Land Water Regional Plan ("LWRP") or are at risk of not meeting. In the OTOP Zone this includes areas of the zone that are located in the red and orange nutrient allocation zones. One of the key contaminants is the loss of nitrogen from farms to water.

The Land and Water Regional Plan therefore includes farming activity rules to control and reduce nitrogen losses. These rules required consents from 1 January 2017[1]. The OTOP Healthy Catchments project provides an opportunity for the committee to consider if these LWRP rules are appropriate for delivering community outcomes. If changes are required, a plan change to LWRP will be notified in mid-2018. Please note that landowners are expected to comply with the current rules in the interim.

To determine whether consent is needed a farmer currently must determine their nitrogen losses.

Where a consent is required, then they need to determine the losses from their farm during 2009-13 and submit this information when seek consent.

This relies on using OVERSEER®, but the plan expressly provides for alternatives. Without an alternative, Environment Canterbury will have to accept delays to farmers working out whether they need consent, applying for consent, receiving limits and implementing Farm Environment Plans. Ultimately this will delay improvements to water quality and cultural outcomes in the Selwyn Waihora catchment.

[1] An applicant then has six months to apply if scale and intensity of activity has not changed.

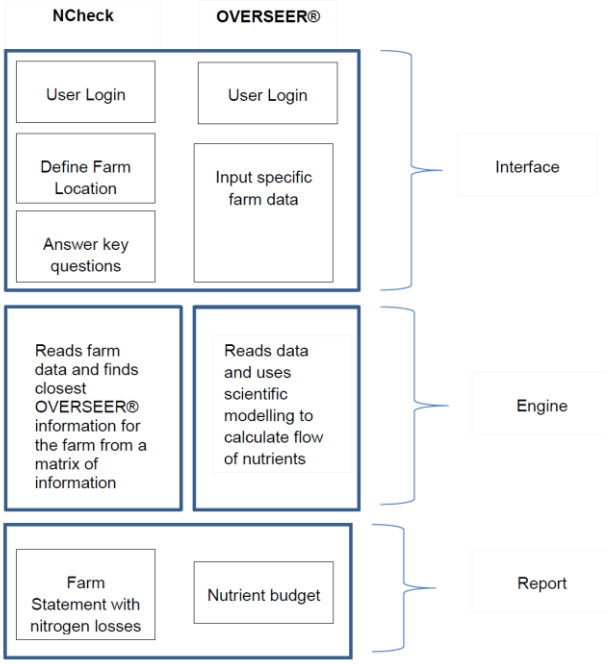
The proposal
For some farmers, N-Check is considered an appropriate alternative as it is equivalent to OVERSEER®. It is a free, simple to use web-based application where a farmer can calculate losses of nitrogen from land to water without using OVERSEER®.
The recommended use in the OTOP Zone is:

1. To determine whether consent is required and a farm is below a fixed nitrogen loss rate threshold.
2. In the consent process and during on-farm audits in the short term, until 2022, for horticultural and arable farms while further improvements are made to OVERSEER®.

N-Check has been approved to be used in the Selwyn Te Waihora catchment for both of these purposes.

What is N-Check?
Like OVERSEER®, N-Check uses key information about a farm including location, type, inputs and management, and then calculates nitrogen losses to water.

'N-Check' is a product from the Matrix of Good Management project. It accesses an engine developed by the project that recognise farm information a user includes and retrieves a nitrogen loss rate that best matches that farm based on a number of representative farms modelled with OVERSEER®. See diagram below.



How does someone access N-Check?
From 31 January 'N-Check' can be accessed at https://gmplossestimator.ecan.govt.nz.

How does N-Check help?
It is an efficient way to help farmers in the Ashburton Zone determine whether consent is needed.
For arable and horticultural farms across the region it provides a short term alternative (until 2022) in the consent process, while improvements are being made to OVERSEER®.
OVERSEER® use can then be focused on higher risk farming activities.

What are the risks?
N-Check assumes Good Management Practices are occurring on farm. This assumption would need to be communicated to farmers and checked during planned on-farm Farm Environment Plans audits.

There may be a perception that N-Check is less robust than OVERSEER® and will therefore impact on achievement of water quality outcomes. N-Check uses OVERSEER® information when it makes a calculation. It will capture all farming activities that were intended to require a resource consent. It can be used in the same way as OVERSEER® to set limits and during on-farm audits to make an assessment as to whether a farm is managing to its limits. It will result in the same water quality outcomes, but will minimise potential delays to implementation.

Is approving N-Check within the powers of Environment Canterbury?
The Chief Executive of Environment Canterbury has the power to approve an alternative model. This is provided for in the definitions of 'nitrogen loss calculation' and 'nitrogen baseline'. This power is similar to the power given to the Chief Executive to approve an industry prepared Farm Environment Plan template.

The Chief Executive may only approve an alternative model to OVERSEER® if he is satisfied that the alternative is equivalent model, in the context of its proposed use.

Is N-Check an equivalent model?
Yes for the limited circumstances proposed for use. N-Check will result in the same outcomes for water quality. It uses similar input information and will determine a nitrogen loss rate to water from land. It can be used in the same way through the consent process and when on farm audits are carried out.

ORARI-TEMUKA-OPIHI-PAREORA ZONE WATER MANAGEMENT COMMITTEE

FOR THE MEETING OF 30 JANUARY 2017

Report for Agenda Item No 10

Prepared by **Dan Clark**
Environment Canterbury

Update on Technical Work and Scenarios for the OTOP Healthy Catchment Project

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Purpose of Report

To update the Zone Committee on the remaining scenarios and discuss how issues raised in the 'Current State' and 'Current Pathway' are being addressed. This brief report will accompany a short presentation by ECan staff at the meeting.

Background

In 2016 the Zone Committee endorsed the set of scenarios being evaluated in the OTOP Healthy Catchments Project. These scenarios were developed to inform the Committee's decision making process and answer a number of 'what if' questions about water management in the zone.

In late 2016, the 'Current State' and 'Current Pathway' were evaluated, these showed that the community outcomes were not currently being met in all areas and that these would not be met if we continue to do what we are doing, even with the existing plans being fully implemented. What these evaluations did show is that under the current pathways the decline in environmental health would halt, but would not meet community aspirations.

The extent to which the community outcomes were met under the 'Current Pathway' varied spatially with some areas remaining in a good state whereas the areas with existing problems generally continued to have the same problem. Some areas in the zone are exhibiting issues with poor water quality while others have water quantity issues. In many cases there are generally two options to address the problem:

- Reduce the allocation, this can apply to water abstracted or to nutrient loads within the catchment, or
- Adding more water to system, this can offset the over allocation of water abstracted from the catchment and have a dilution effect on nutrient concentrations.

The remaining scenarios aim to investigate both of these options. Firstly the 'In Zone Gains' scenario allows us to evaluate by how much we would need to reduce allocations and improve efficiency to meet the community outcomes. This will show us the consequences of reducing the abstraction to within the plan limits and reducing the nutrient load to an amount which results in concentrations in streams meeting national bottom lines for nitrate toxicity.

The following scenario of ‘New Water’ allows us to assess how the addition of water to the zone can help to meet the community outcomes. This additional water may be able to replace some of the over allocated groundwater resources and provide some benefits to nutrient concentrations through increased catchment water balance. The effects of new water on nutrient concentrations is dependent on how the new water is used and whether it is replacing existing supplies or providing for intensification of additional areas within the zone.

As the existing scenarios will help to answer the questions raised in the work to date, we can continue with the set of scenarios already endorsed by the committee.

Recommendation

That the Zone Committee notes the work underway and how this will assist in answering the questions that have been raised following the ‘Current State’ and ‘Current Pathway’ assessments.

ORARI-TEMUKA-OPIHI-PAREORA ZONE WATER MANAGEMENT COMMITTEE

FOR THE MEETING OF 30 JANUARY 2017

Report for Agenda Item No 11

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Orari–Temuka–Opihi-Pareora (OTOP) Zone – Defining Freshwater Management Units

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Executive Summary
The purpose of this memo is to advise the Zone Committee on Environment Canterbury's preferred option for defining the OTOP zone into Freshwater Management Units.

Environment Canterbury must give effect to the National Policy Statement for Freshwater Management 2014, which requires spatial units - Freshwater Management Units (FMUs)- to be defined for the Orari-Temuka-Opihi-Pareora sub-region section (Section 14) of the Land and Water Regional Plan.

Each FMU must set freshwater objectives and water quality and quantity limits, have a monitoring plan and a water quality and quantity catchment accounting system.

Three options are assessed for the Healthy Catchments project area, ranging from two broad FMUs to dividing the zone up into 15 FMUs. Environment Canterbury's preferred option is for five FMUs comprising:

- the Pareora catchment - one FMU for surface water.
- Timaru City catchments- one FMU for surface water, excluding the Washdyke catchment.
- Opihi River catchment – surface water FMU.
- Orari River catchment – surface water FMU.
- A single groundwater FMU comprising all of the OTOP Zone.

The proposed five FMUs largely reflect the historic and current management of the main catchments in the OTOP zone, and strike a balance between having a few very large spatial management units or a large number of small management units.

As the Healthy Catchments project progresses, the proposed FMUs can be modified or refined as a result of new technical information or feedback from the community.

Recommendation

That the Zone Committee:

- **endorses the five proposed Freshwater Management Units for the Healthy Catchments Project to comply with the National Policy Statement for Freshwater Management 2014, but note that these may be refined or modified as a result of new information or feedback from the community.**

What are Freshwater Management Units?
The National Policy Statement for Freshwater Management 2014 (NPS-FM 2014) requires regional councils, including the Orari–Temuka–Opihi–Pareora (OTOP) sub-region process, to set freshwater objectives and limits for all 'freshwater management units'.

Freshwater management units ((FMUs) are defined as:

"…the water body, multiple water bodies or any part of a water body determined by the regional council as the appropriate spatial scale for setting freshwater objectives and limits and for freshwater accounting and management purposes."[2]

FMUs are not a new idea. Regional councils, and their predecessors the catchment boards, have often used spatial units for land and water planning. The NPS-FM 2014 formalises this approach, while retaining sufficient flexibility to allow regional councils to:

- group multiple freshwater bodies, including non-contiguous freshwater bodies, under a single FMU and to apply concepts, such as the 'Ki uta ki Tai' – 'mountains to the sea'.
- to determine the spatial scale at which freshwater objectives, water quantity and quality limits and freshwater accounting might apply. An FMU could apply to all or part of an individual water body, or to a whole catchment or zone.

The NPS-FM 2014 also requires that each FMU:

- identifies values, states freshwater objectives and applies limits, targets and methods to achieve those objectives within a specified time. (Policy CA2).
- has a monitoring plan with at least one representative site to monitor progress against the freshwater objectives (Policy CB1).
- establishes a freshwater quality and freshwater quantity accounting system when setting or reviewing limits (Policy CC1).

An FMU may contain additional management units, such as nutrient allocation zones, flow sensitive catchments, high naturalness waterbodies, groundwater or surface water allocation zones that apply to different parts of an FMU for a specific purpose while achieving the management unit's limits and freshwater objectives. In most cases, these subsidiary management units would follow catchment or sub catchment boundaries, but not extend beyond the boundary of the FMU.

The FMUs will form the basic units for grouping and managing freshwater bodies in Section 14 – 'Orari– Opihi–Pareora' - of the Land & Water Regional Plan, and contain freshwater objectives and water quantity and quality limits for the water bodies in each FMU, and if necessary, additional policies and rules to manage specific freshwater issues.

What are the requirements for defining a Freshwater Management Unit?

Neither the NPS-FM 2014 or the associated guidance document (MfE 2016) specify a single, correct method, or a preferred way, of defining FMUs. The size and number of FMUs for the OTOP Zone will depend on what is the the most relevant and practical approach for each zone.

[2] NPS-FM 2014 'Interpretation' pg 7.

Some of the factors that can be used to define an FMU (MFE 2016) are:

- the appropriate scale for setting and monitoring freshwater objectives and limits.
- similar hydrological characteristics including catchment boundaries and hydrological connections between freshwater bodies.
- the types of land uses, the pressures and/or demands on the freshwater resources, local communities and their social identity and relationship to the rivers, lakes and aquifers.
- the rohe and area of interest to local runanga.
- the historic management of the freshwater resources, such as the Opihi River.

Separate FMUs can be defined for surface and groundwater bodies, or for surface waterbodies and their hydraulically connected groundwater to ensure the water bodies are managed as an integrated system, especially where surface and groundwater bodies are highly connected, lag tinmes are short and groundwater abstractions affect the amount of available surface water (MFE 2016).

How many Freshwater Management Units would be required in the OTOP Zone?
Apart from the Pareora River and Timaru catchments, the boundaries of surface and groundwater catchments the coastal plains portion of the OTOP Zone do not line up neatly. Therefore, we have assumed that for the Zone there would be separate groundwater and surface water FMUs, with shallow hydraulically connected groundwater included within the surface water FMUs. This approach is consistent with current water quantity management where highly and moderately hydraulically connected groundwater forms part of any surface water allocation[3].

Parts of the Pareora River and Opihi River mouths (Milford Lagoon) would fall outside of a FMU because they lie within the Coastal Marine Area which is covered by the Regional Coastal Environment Plan 2005. This plan is currently being reviewed. Any recommendations for the management of the Coastal Marine Area[4] that might arise from the OTOP Zone sub region process could be included in the Zone Implementation Plan Addendum and considered as part of the coastal plan review.

There are broadly three options for defining the FMUs, based on splitting the OTOP zone into increasingly finer units. Other combinations are possible, and as a result of this sub region process, there could be further refinements to the proposed FMUs.

Option 1: Two FMUs - a surface water and a groundwater FMU that cover the whole zone.

Option 2: Five FMUs comprising the following:

- the Pareora catchment - one FMU for surface water.
- Timaru City catchments- one FMU for surface water, excluding the Washdyke catchment.
- Opihi River catchment including the Washdyke Catchment– surface water FMU.

[3] See Land & Water Regional Plan Policy 4.61, Schedule 9. Both the Pareora Catchment Environmental Flow and Water Allocation Regional Plan and Opihi River Regional Plan use different approaches to define and calculate stream depletion. It is expected that these will be reviewed as part of the process to review and set water quantity limits.

[4] The Coastal Marine Area is defined in the RMA 1991 as essentially the area of coastal water beyond mean high water springs to the territorial limit, and where the line crosses a river, either 1 km upstream of the river mouth or the distance 5 times the river mouth width whichever is lesser.

- Orari River catchment – surface water FMU.
- A single groundwater FMU comprising all of the OTOP Zone.

Option 3: 15 FMUs based on the eight major surface water catchments in the OTOP Zone – Pareora River, Opihi River, Ophua River, Tengawai River River, Temuka River, Orari River, Coastal spring fed streams, Timaru City catchment, and the seven main groundwater zones – Fairlie, Upper Pareora, Lower Pareora, Timaru, Rangitata/Orton, Orari-Opihi and Levels Plain.

The relative merits of each option are assessed in Table 1 using the following criteria:
1) Is the scale appropriate for setting freshwater objective and limits?
2) Is the scale appropriate for freshwater accounting and management purposes?

Discussion
Option 2 is preferred by Environment Canterbury. The proposed five FMUs largely reflect the historic and current management of the main catchments in the OTOP zone, and strike a balance between having a few very large spatial management units or a large number of small management units. It is important that the proposed FMUs are able to differentiate freshwater objectives and limits within the zone, and to apply a consistent set of outcomes to similar types of water bodies. Within the FMUs, groundwater and surface water allocation zones and nutrient allocation zones can be used set water quality and quantity limits.

Too many FMUs are likely to limit the opportunities for integrated land and water management across the major catchments, and the NPS-FM requirement to implement monitoring plans and catchment accounting systems for each FMU would mean additional administrative oversight and demands on resources.

Environment Canterbury's recommendation does not preclude further changes to Option 2. As the Healthy Catchments project progresses, the proposed FMUs can be modified or refined as a result of new technical information or feedback from the community.

Recommendation

That the Zone Committee:

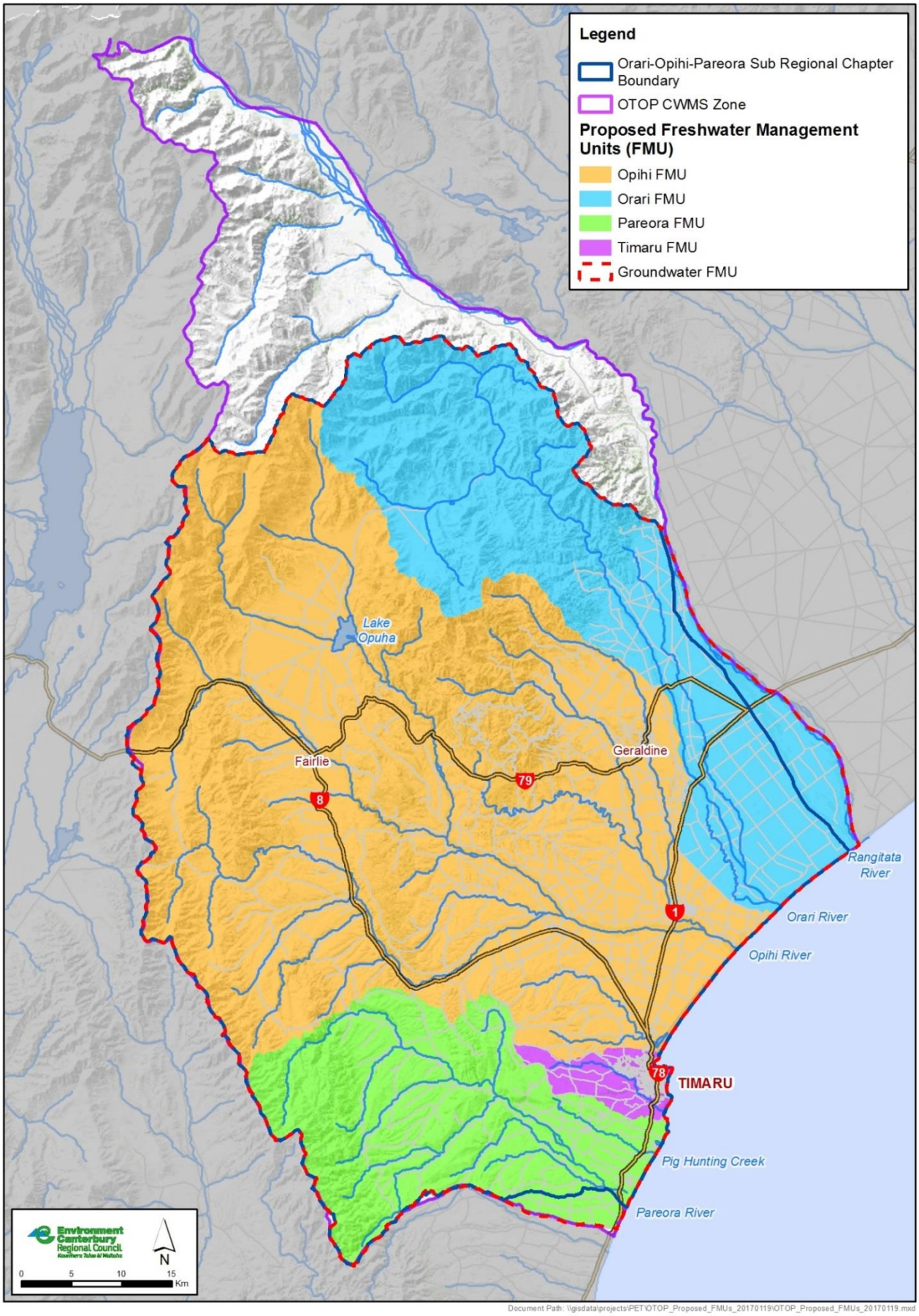
- **endorses the five proposed Freshwater Management Units for the Healthy Catchments Project to comply with the National Policy Statement for Freshwater Management 2014, but note that these may be refined or modified as a result of new information or feedback from the community.**

References
MFE 2016 *A Guide to Identifying Freshwater Management Units: Under the National Policy Statement for Freshwater Management 2014*. Publication no. 1244. Minsitry for the Environment, Wellington.

Appendix 1: Āssessment of options for defining FMUs in the OTOP zone

Options	Assessment Criteria	
	Is the scale appropriate for setting freshwater objectives and limits? • *Similar hydrological characterisitics, including catchment boundaries* • *Recognises communities of interest with the water resources including values and uses* • *Reflects the rohe of Arowhenua and Waihao*	**Is the scale appropriate for freshwater accounting and management purposes?** • *Can include water quality & quanity management units* • *Resources needed to implement catchment accounting & monitoring.* • *Reflects historic management of water resources*
Option 1 – Two FMUs – one surface water and one groundwater	**Probably not** The OTOP zone consists of three major surface water catchments with differing issues and communities of interest. A single surface water FMU is likely to be too broad and not reflect the differences between the catchments. Both FMUs would fall within the rohe of Arowhenua and Waihao runanga.	**Possibly not** The FMUs could include a subsidary water management units and a monitoring plan which could be designed with representative sites to monitor water quality and quantity and an associated catchment accounting system. The three major catchments in the zone have required specific planning provisions to address particular freshwater management issues in each catchment.
Option 2 – 5 FMUs	**Yes** The FMUs would reflect the major surface and groundwater catchments in the zone, their particular identities and land uses, and generally align with catchment boundaries and the interests of local communities and runanga. Specific freshwater objectives and limits could be set for each surface water and groundwater FMU.	**Yes** The proposed FMUs would reflect the longstanding approach to land and water management in South Canterbury. A plan to monitor the freshwater objectives, using representative sites, in each FMU would be very similar to the ECan's current water quality and quantity monitoring programme . The number and size of FMUs reflects a pragmatic balance between having an FMU that does not recognising the diversity in South Cantebury area and too many FMUs that would very similar and require extensive resources to implement.
Option 3 - 16 FMUs	**Possibly not** The FMUs are based on the surface and groundwater catchments with generally discrete catchment boundaries. However, many of the rivers are similar types and are likely to have the same or similar freshwater objectives. The NPS-FM allows regional councils to 'aggregate' similar types of water bodies so they have common freshwater objectives.	**No** A large number of FMUs is not consistent with the concept of mountains to the sea idea of integrated management. It is likely to require a more intensive programme to monitor the freshwater objectives and implement catchment accounting systems with significant additional costs to ratepayers and uncertain benefits. The operation of the Opuha Dam affects management of rivers and land uses in the Opihi catchment and requires an integrated approach across the catchment

FIGURE1


Legend
Orari-Opihi-Pareora Sub Regional Chapter Boundary
OTOP CWMS Zone
Proposed Freshwater Management Units (FMU)
Opihi FMU
Orari FMU
Pareora FMU
Timaru FMU
Groundwater FMU
Lake Opuha
Fairlie
Geraldine
79
8
1
78
TIMARU
Rangitata River
Orari River
Opihi River
Pig Hunting Creek
Pareora River
Environment Canterbury Regional Council
N
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Document Path: \\gisdata\projects\PET\OTOP_Proposed_FMUs_20170119\OTOP_Proposed_FMUs_20170119.mxd