Ministry for the Environment
Manatū Mō Te Taiao

PO Box 10362, Wellington 6143
Website: www.mfe.govt.nz
Freephone: 0800 499 700

19-D-01902

s 9(2)(a)

Royal Forest and Bird Protection Society of New Zealand Inc.
s 9(2)(a) @forestandbird.org.nz

Dear s 9(2)(a)

Thank you for your email of 6 September requesting the following under the Official Information Act 1982 (the Act):

> *I would like to request all communications (emails, texts, meeting notes, agendas, notes of conversations, etc.) between Gerard Willis, Bryan Smith and Martin Workman of the Ministry for the Environment's water directorate and Federated Farmers, Fonterra, Dairy New Zealand, Environment Canterbury and Irrigation NZ, since 1st January 2019.*

Part of the information you have requested is enclosed. However, it will take us some more time to assess and prepare the remainder of the information for release. The information is thus being released in three tranches.

In this first tranche, the Ministry for the Environment is releasing 35 documents in scope of your request, as listed in the attached table. Some information within these documents has been withheld under section 9(2)(a) to protect the privacy of natural persons, including that of deceased natural persons.

One document related to DairyNZ's Water Accord year 5 report is refused for release on the basis of section 18 (d) - this information is available at https://www.dairynz.co.nz/publications/dairy-industry/sustainable-dairying-water-accord-five-years-on-report/.

The following table provides a timeline for the release of requested information

Tranches	By date	Action
Tranche 1	4 October 2019	Release of first set of documents (emails and attachments)
Tranche 2	15 October 2019	Release of second set of documents (emails and attachments)
Tranche 3	25 October 2019	Release of final set of documents (e.g. any relevant texts and meeting notes)

Released under the provision of the Official Information Act 1982

Information in the second and third tranches may or may not be released in full. Information may need to be withheld or refused under:

1.1 Section 9 (2)(a) - to protect the privacy of natural persons, including that of deceased natural persons;

1.2 Section 9 (2)(f)(iv) - to maintain the constitutional conventions for the time being which protect the confidentiality of advice tendered by Ministers of the Crown and officials;

1.3 Section 9 (2)(g) – to maintain the effective conduct of public affairs through

(i) the free and frank expression of opinions by or between or to Ministers of the Crown or members of an organisation or officers and employees of any department or organisation in the course of their duty;

1.4 Section 9(2)(h) – to maintain legal professional privilege;

1.5 Section 18 (d) - the information requested is or will soon be publicly available.

In terms of section 9(1) of the Act, I am satisfied that, in the circumstances, the withholding of this information is not outweighed by other considerations that render it desirable to make the information available in the public interest.

You have the right to seek an investigation and review by the Office of the Ombudsman of my decision to withhold information relating to this request, in accordance with section 28(3) of the Act. The relevant details can be found on their website at: www.ombudsman.parliament.nz.

Please note that due to the public interest in our work the Ministry for the Environment may publish this on our web site on our OIA responses page shortly after the response has been sent to you.

If you have any queries about this, please feel free to contact our Executive Relations team.

Yours sincerely

Katherine Meerman
Director, Water Taskforce
Ministry for the Environment

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From: Ministerials
To: s 9(2)(a) @forestandbird.org.nz
Subject: Response to your Official Information Act request 19-D-01902 s 9(2)(a)
Date: Friday, 4 October 2019 5:14:00 PM
Attachments: 19-D-01902 s 9(2)(a) - material - Final.pdf
19-D-01902 s 9(2)(a) Response Letter.pdf

Kia ora s 9(2)(a),

Please find attached the first tranche of the response to your Official Information Act request dated 06 September. The Ministry intends to provide you the second tranche on 15 October and the final tranche on 25 October 2019.

Kind regards,
Curtis Hammond

From: s 9(2)(a) @forestandbird.org.nz>
Sent: Friday, 6 September 2019 4:29 PM
To: Ministerials <ministerials@mfe.govt.nz>
Subject: OIA request

Executive Relations
PO Box 10362
Wellington, 6143.

Official Information request.

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If you have any queries about this request please feel free to contact me for clarification.

Yours sincerely

s 9(2)(a)

Royal Forest and Bird Protection Society of New Zealand Inc.
Ground Floor. 205 Victoria Street . PO Box 631 . Wellington . New Zealand
DD 04 801 2215 . **M** 021 227 8420 .

You can join Forest & Bird at www.forestandbird.org.nz

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Ministry for the Environment
Manatū Mō Te Taiao

PO Box 10362, Wellington 6143
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19-D-01902

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Yours sincerely

Katherine Meerman
Director, Water Taskforce
Ministry for the Environment

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Note: due to file size, please email ministerials@mfe.govt.nz for copies of the documents released

DOCUMENT SCHEDULE

Sender	Recipient	Subject	Date	Decisions	OIA sections applied
bill.bayfield@ecan....	martin.workman@mfe....	Conversion info	18/04/2019 16:20	Release in Full	
Tanya.Cornwell@dair...	alister@midfield.nz	DELG - Dairy Tomorrow Commitment 1 presentat...	8/08/2019 10:40	Release in part	S 9 (2)(a)
Attachment		Dairy Tomorrow Commitment 1 ppt		Release in full	
Tanya.Cornwell@dair...	alister@midfield.nz	DELG paper on SDWA transition and C1 Referen...	27/08/2019 17:13	Release in part	S 9 (2)(a)
Attachment		DELG Agenda August plus final minutes of May meeting		Release in part	S 9 (2)(a)
martin.workman@mfe....	JGeange@fedfarm.org...	Essential Freshwater Fed Farmers Martin Work...	13/02/2019 7:37	Release in Full	
Attachment		PPT Essential Freshwater Fed Farmers Martin Workman Feb 2019		Release in Full	
martin.workman@mfe....	david.burger@dairyn...	FW: Analysis of GHG and water mitigations	7/01/2019 14:19	Release in Full	
Attachment		Farm Systems Change and KPI outcomes for Ow Farm		Release in Full	
GForrest@fedfarm.or...	martin.workman@mfe....	FW: Fishing a positive spinoff from Brydone ..	25/03/2019 8:00	Release in Full	
Charlotte.Rutherfor...	martin.workman@mfe....	FW: Fonterra (74057) - Evidence of James All ..	6/05/2019 10:04	Release in Full	
Attachment		Fonterra (74057) - Evidence of James Allen (Farm Management)		Refused	S 18(d)
https://www.waikatoregion.govt.nz/assets/WRC/Council/Policy-and-Plans/HR/Block2/Fonterra-James-Allen-Farm-Management-Evidence.pdf					
martin.workman@mfe....	Ivan.Lawrie@far.org...	Good Farming Practice Governance Group	2/08/2019 8:55	Release in Full	
carl.hanson@ecan.go...	kolt.johnson@auckla...	Groundwater Forum 6-7 May, final agenda	3/05/2019 14:55	Release in part	S 9 (2)(a)
Attachment		May 2019 agenda		Release in part	S 9 (2)(a)
Lee.Cowan@dairynz.c...	martin.workman@mfe....	MEDIA RELEASE: Five years of Water Accord sh...	2/09/2019 10:42	Release in part	S 9 (2)(a)
Attachments		Sustainable Darying Water Accord Year 5 Q&A	2/09/2019 10:42	Released in Full	
martin.workman@mfe....	charlotte.rutherfor...	MfE and regional council chair meeting	24/03/2019 21:00	Release in Full	
David.Burger@dairyn...	martin.workman@mfe....	Proposed Run Sheet Minister Parker's Visit D...	28/03/2019 12:07	Release in Full	
David.Burger@dairyn...	martin.workman@mfe....	RE: Analysis of GHG and water mitigations	10/01/2019 10:51	Release in Full	
Matt.Randal@fonterr...	Isaac.Bain@mfe.govt...	RE: Da a questions	4/05/2019 16:53	Release in Full	
Tanya.Cornwell@dair...	alister@midfield.co...	RE: DELG Meeting	7/05/2019 16:58	Release in part	S 9 (2)(a)
Attachment		DELG Agenda May 2019		Release in part	S 9 (2)(a)
Tanya.Cornwell@dair...	s 9(2)(a) @forestan...	RE: DELG minutes - 16 May 2019	7/06/2019 13:59	Release in part	S 9 (2)(a)
Mark.Robinson2@font...	jan.brown@es.govt.n...	RE: Draft media release from hui yesterday	29/08/2019 8:22	Release in part	S 9 (2)(a)
carl.hanson@ecan.go...	Dan.Elder@mfe.govt....	RE: Groundwater Forum - May 6-7 meeting - th...	3/04/2019 17:19	Release in Full	
David.Burger@dairyn...	martin.workman@mfe....	RE: Research Projects not funded	28/06/2019 12:11	Release in Full	
martin.workman@mfe....	ESoal@irrigationnz....	RE: Roundtable planning discussion	8/04/2019 17:43	Release in Full	
ESoal@irrigationnz....	martin.workman@mfe....	RE: Roundtable planning discussion	23/05/2019 8:14	Release in Full	
Tanya.Cornwell@dair...	alister@midfield.nz	Water Accord year 5 report - for review	10/07/2019 9:52	Release in part	S 9 (2)(a)

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Attachment		Water Accord year 5 report	10/07/2019 9:52	Refused	S 18(d)
	https://www.dairynz.co.nz/publications/dairy-industry/sustainable-dairying-water-accord-five-years-on-report/.				
Caroline.Hart@ecan....	Nick.Vincent@mfe.go...	Wellington visit 12 March	1/03/2019 11:50	Release in Full	
David.Burger@dairyn...	martin.workman@mfe....	Wintering letter to Ministers	30/07/2019 9:04	Release in Full	
Attachment		Dairy NZ letter_Winter grazing practices letter to ministe	30/07/2019 9:04	Release in Full	

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Andre Silveira

From: Bill Bayfield <bill.bayfield@ecan.govt.nz>
Sent: Thursday, 18 April 2019 4:20 PM
To: Martin Workman
Cc: Anna Puentener
Subject: Conversion info

Hi Martin

Further to our discussion last week regarding conversions from dairying, while we have stopped dairy conversions, we haven't been able to find firm examples of conversions back at present. My staff and councillors hear a lot of talk, but it appears to be just that, without much substance to date.

We will monitor this because the discussions must come to fruition with changing rules from us and land prices. Of note is that we don't know how we would record such changes as they won't require a land use change from the district councils and probably won't from us. We may have to rely on the irrigation schemes and struggle on the individuals. We will do some thinking as to how we capture this.

Cheers
Bill

Bill Bayfield
Chief Executive
Environment Canterbury

PO Box 345, Christchurch 8140
+64 3 345 9316
+64 27 742 8210
Bill.Bayfield@ecan.govt.nz
Customer Services: 0800 324 636
24 Hours: 0800 76 55 88

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Andre Silveira

From: Tanya Cornwell <Tanya.Cornwell@dairynz.co.nz>
Sent: Thursday, 8 August 2019 10:40 AM
To: Alister Body; s 9(2)(a); Martin Workman; MBIE (Max.Kennedy@mbie.govt.nz); s 9(2)(a); s 9(2)(a); s 9(2)(a)
Cc: David Burger; s 9(2)(a)
Subject: DELG - Dairy Tomorrow Commitment 1 presentation - and dietary requirements request
Attachments: 20190512 DELG D.Burger.pdf

Tēnā koutou

Please accept my apologies for the great delay in sending David Burger's Dairy Tomorrow Commitment 1 presentation out to all of you. Please find the presentation attached.

On a aside, for those who are attending the final DELG meeting and thank you lunch on the 29th, please advise if you have dietary requirements by 5pm Friday, 23 August.

Ngā mihi

Tanya Cornwell
Kaitohutohu kaupapa here matua - Senior Policy Advisor
Policy & Advocacy
Responsible Dairy Group

DairyNZ
Te Whanganui-a-tara
Level 10, Prime Property Tower (PPT), 86 – 90 Lambton Quay | PO Box 10002 | Wellington 6143 | NEW ZEALAND
Mob +64 27 239 8468
Web www.dairynz.co.nz | www.GoDairy.co.nz | www.getfresh.co.nz

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Dairy Tomorrow C1

Update to DELG

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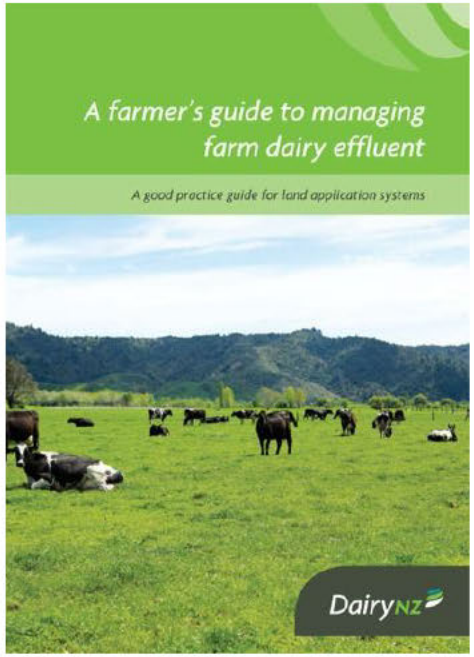
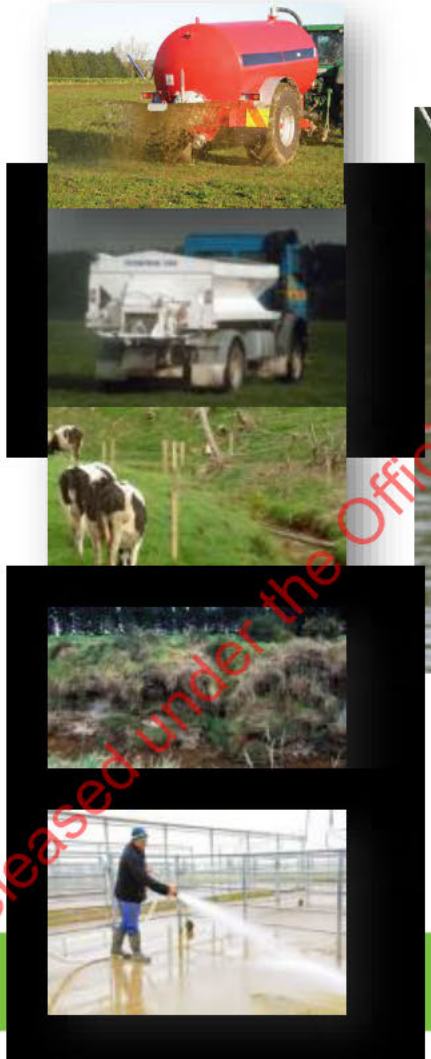
David Burger

16 May 2019

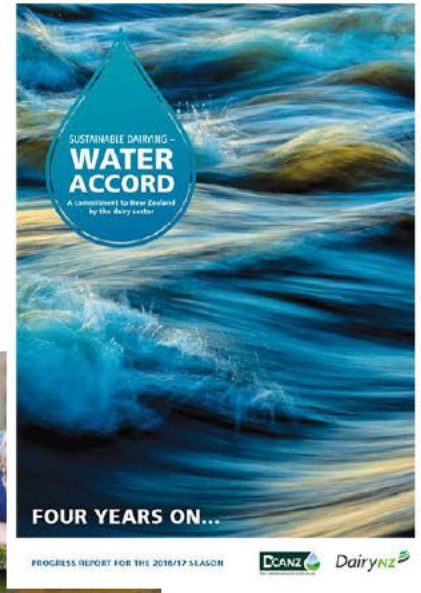
Effluent



Farm Plans



Water Accord



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DairyNZ

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Our Principles

Be Bold
Be Open
Innovative
Collaborative

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dairy tomorrow

Broad-based Sustainability

- Environment
- Farm Economics
- Markets & Consumers
- Animals
- People
- Communities

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dairy tomorrow

COMMITMENT 1:

We will protect and nurture the environment for future generations

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Goals

- Lead efforts to improve the health of our rivers and streams and protect and enhance biodiversity
- Lead efforts on agriculture's contribution to meeting NZ's climate change goals
- Develop a blueprint for a 50 yr vision of sustainable land use
- All farms implementing and reporting under certified farm sustainability plans

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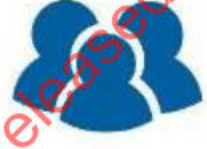
Key focus

- Demonstrate & build community trust
- Accelerate adoption & outcomes at pace and scale
- Integrated and holistic approach

- Right solutions, right place
- Understand where we need to get to and how



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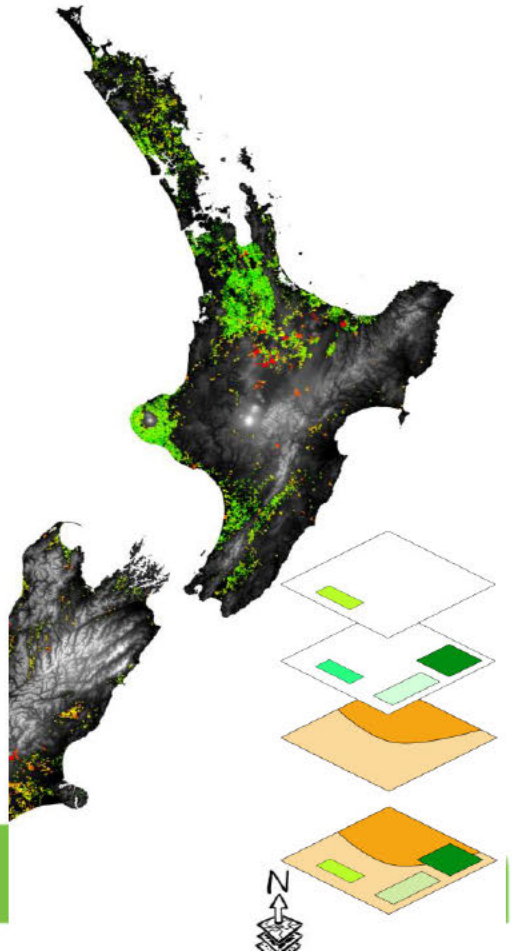
1. Understanding our footprint

- Catchment accounting framework
- Identify at-risk catchments
- Understand our impact and changing trends

- Report on WQ health and footprint at catchment and regional scales?



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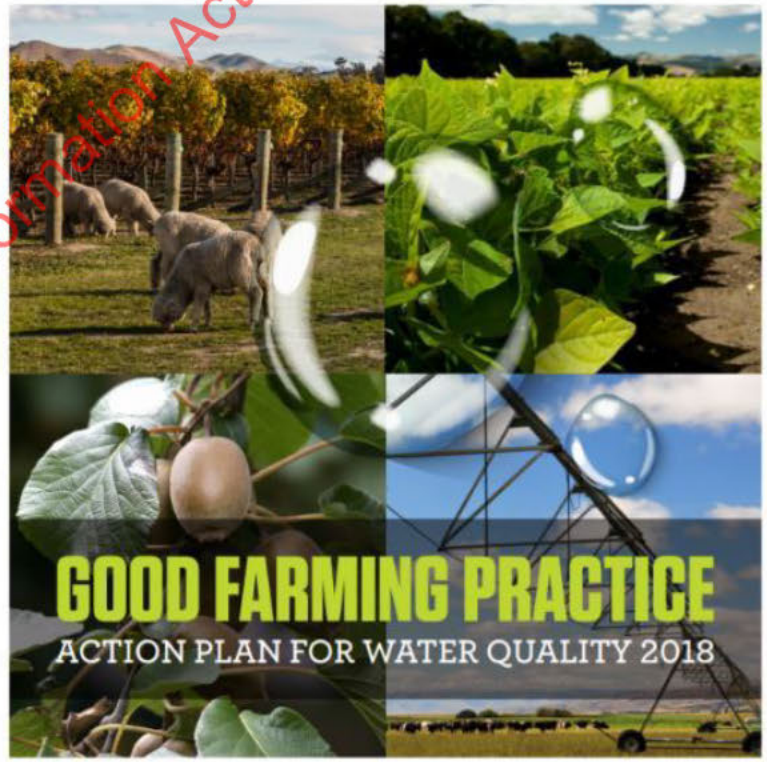
2. Good Farming Practice

- All dairy farms operating to GFP principles by 2025
- All farms FSP by 2025



Action	Time-frame	
Refresh the Industry Agreed Good Management Practices for Water Quality and revise to National Good Farming Practice Principles	Complete	
Develop systems and tools for monitoring and reporting on Good Farming Practice uptake	2018–2020	
Identifying priority principles to apply for a region, catchment and/or sector to support the uptake of targeted Good Farming Practice	2018–2020	
Supporting every farm and horticultural property to have assessed risks against priority principles for catchment/ sector and developed their response actions (farm plan)	Milestones to be developed, with priority catchments and sectors completed first 2018–2030	Sectors, councils and rural professionals
Accelerating uptake through sector and council extension	2018–2020	Sectors, councils, Water

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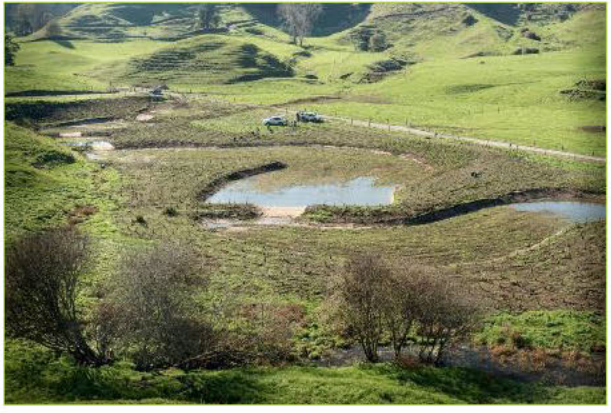
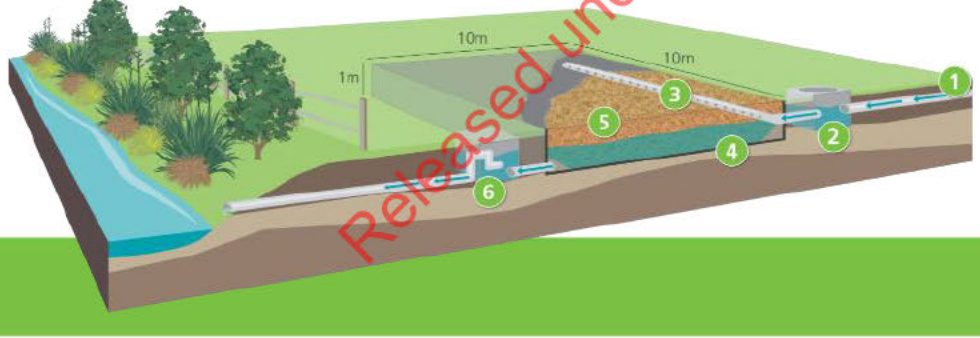
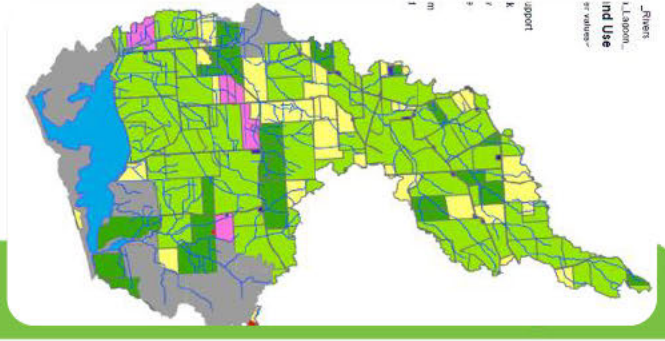
3. Accelerating uptake of on-farm mitigation tools



Design → Performance → Upscaling → Guidelines → Uptake





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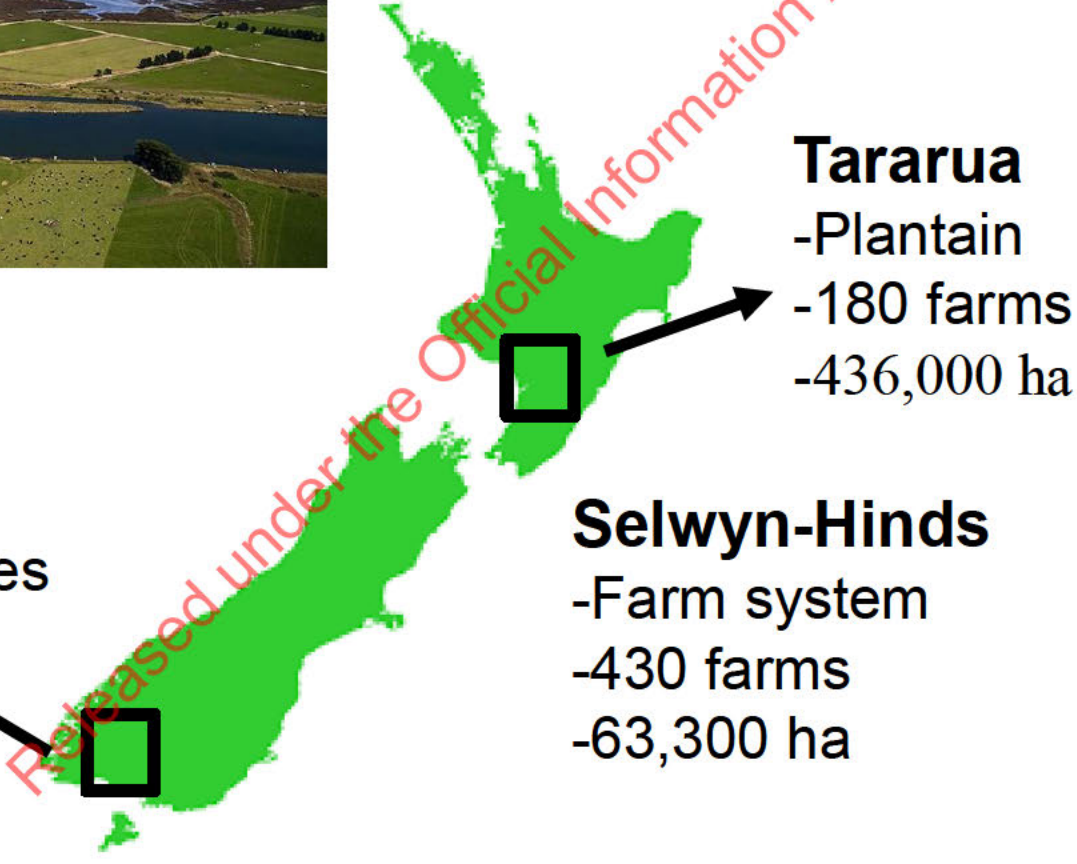
4. Change at pace and scale



Tararua
-Plantain
-180 farms
-436,000 ha

Aparima
-Good Practices
-680 farms
-137,500 ha

Selwyn-Hinds
-Farm system
-430 farms
-63,300 ha

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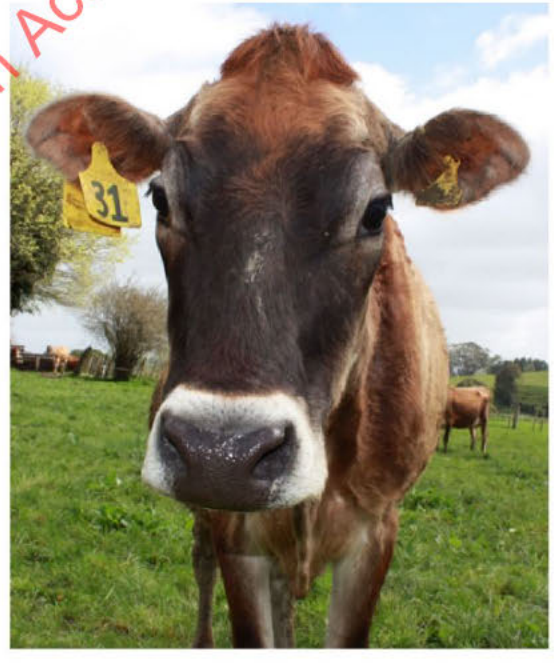
5. Dairy action plan for climate change

"To address on farm dairy greenhouse gas emissions in the context of a profitable and sustainable dairy industry"



- Building the foundation
- Options to lower emissions economy
- On-farm recording
- Farmer change

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6. A plan for the future

-where do we need to go, how do we get there?

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Next steps

1. Define core environment measures to report on sector environmental performance:
   - Which Accord metrics need to continue?
   - What new/additional metrics need to be added?
   - Develop standardised scoring and reporting system to report on

2. Identify and align GFP under each principle
   - Which practices are we already achieving as a sector – analysis of processor schemes
   - Identify metrics we can already report on now

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How we achieve and deliver our goals and aspirations

Targets, commitments and verification

- Riparian Management
- Nutrient Management
- Effluent Management
- Water Use Management
- Conversions

Review of current targets and commitments, gap analysis and alignment with C1, national and international requirements

(C1 Leadership Group plus specialist input)

Alignment with Good Farming Practice Action Plan for Water Quality, plus national and international frameworks

(DNZ, Processors)

Monitored and recorded through Farm Environment Plans (Processors, DNZ, MPI)

Auditing Process → Review of the auditing process; lessons learned and recommendations for future auditing processes (Telarc)

Targets, commitments and verification

Future suite of targets and commitments aligned to GFP-AP for WQ, monitored and recorded through FEPs, and presented in a transparent, verified way nationally to government, rural stakeholders and the public, and internationally, to meet obligations, scientifically link to environmental improvements, and demonstrate NZs commitment to environmental sustainability

- E.g., Number of FEPs, % land with FEP
- E.g., Wetland Management
- E.g., Nutrient Footprint
- E.g., Biodiversity, soil health, Mahinga kai, culturally significant areas

National and Intern

Fulfil and align with national obligations (e.g., Living Standards Framework, Environmental components of Farm Assurance Plans, Farm Gauge)

Training, certification and extension

- Training and Certification → Review of Advisor, Certification, Accreditation and Training programmes, gaps analysis and consolidation, targeted drive to increase numbers and ensure relevance (DNZ, independent consultant)
- Farmer Extension → Targeted environmental extension programmes across key topics (e.g., nutrients, sediment, GHG, water allocation) – (DNZ, Companies, Rural Professionals, Regional Councils, training, certification and accreditation providers)

Training, certification and extension

Farmers are aware and knowledgeable on all environmental issues affecting their farming business through consistent and targeted messaging and highest standards of up-to-date information

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- % dairy land with a FEP or equivalent
- Extracted water used on dairy farms is measured (% farms with meters)
- Catchment-scale nutrient footprint - % change in N footprint over time
- GHG intensity of NZ milk

- % farms with riparian management plan or equivalent
- Wetland protection/development
- Protection non-accord waterways (likely in legislation form July)
- Biodiversity on NZ dairy farms
- % farms following GFP for WQ or farm WQ score
- % farms that know their GHG number/report
- Catchment -scale change pilots
- Downstream NOF trends/ecosystem health?

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Dairy Environment Leadership Group
Meeting Agenda

Date: Thursday, 16 May 2019
Time: 10.00am to 2.00pm
Venue: DairyNZ Boardroom, Level 10, 86-90 Lambton Quay, Wellington

No	Item	Lead	Paper	Time
1	**Welcome** a) Apologies b) Review minutes and action points from 29 November 2019 meeting	Alister Body	Yes Minutes – Nov 2018 (Attachment A)	10.00am (15 mins)
2	**Sustainable Dairy Water Accord 2017/18 audit (final)** a) Year 5 audit overview b) Publication options c) Timeframes	Alister Body *Please note that we will be joined (via Skype) by:* - s 9(2)(a) *(Catchment Engagement Leader, DairyNZ) and* s 9(2)(a) *(Senior Land & Water Management Specialist, DairyNZ)*	Yes 2016/17 (yr 4) audit Chairs' Foreword (Attachment B) Summary of SDWA 2017/18 Telarc audit (Attachment C)	10.15am (1 hr)
3	**Update on the overview of the Integrated Farm Plan framework and workstream progress**	Alister Body *Please note that we will be joined by:* - s 9(2)(a) *(Strategy Implementation Manager, DairyNZ)*	Yes Farm Planning / Assurance Framework Design (Attachment D)	11.15am (45 mins)
4	**Update on Dairy Tomorrow Commitment 1 (C1)** a) Steering Group introduction b) Framework introduction	Alister Body / Dr David Burger *(Strategic Investment Leader, DairyNZ)*	Yes Transition from the SDWA to a C1 monitoring and reporting framework (Attachment E)	12.00pm (45 mins)
	LUNCH			12.45pm (10 mins)

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No	Item	Lead	Paper	Time
5	**DELG's future role – Options and Opportunities** a) Evolution of DELG b) 11 years of achievements and challenges c) Refresh	Alister Body / Dr David Burger *(Strategic Investment Leader, DairyNZ)*	No	12.55pm (45 mins)
6	**General Business** a) New secretariat b) Matters arising c) Confirmation of next meeting date	Alister Body	No	1.40pm (20 mins)
	Meeting Close			2.00pm

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Attachment A: DELG meeting minutes – 29 November 2018

Minutes of the meeting of the Dairy Environment Leadership Group held on Thursday 29 November 2018 at 10.00am via phone conference.

Present:	Alister Body, s 9(2)(a) , s 9(2)(a) , s 9(2)(a) , s 9(2)(a) , s 9(2)(a) (for s), s 9(2)(a) , s 9(2)(a) (for s 9(2)(a)), s 9(2)(a) .
Apologies for absence:	s 9(2)(a) s 9(2)(a) , David Burger, s , s 9(2)(a) , s 9(2)(a) , s 9(2)(a) .9(2 ( )
In attendance from DairyNZ:	s 9(2)(a) , s 9(2)(a) and s 9(2)(a) (Secretariat)

1. Welcome and Introduction

The Chair welcomed members, outlined the agenda and noted apologies received.
Moved s and seconded s 9(2) .

2. Approval of 2016/17 Sustainable Dairying Water Accord (SDWA) Report

The Chair introduced the 2016/17 SDWA Report and invited feedback on errors or omissions around content. Any typos identified should be emailed to s 9(2)(a) for correction.

Members provided the following feedback:

- Regional average nitrogen leaching is reported as a rolling average and includes the full four years of accord data. As this isn't a true rolling average the members agreed it should be reported as a 3-year rolling average.
- There is a discrepancy in the Serious Non-Compliance (SNC) data for Canterbury. ECan only report instances where SNC led to enforcement action (20 farms), however Forest & Bird data shows 36 farms (4.5%) with SNC. The members discussed whether they should rely on the Council reported data or if there is a responsibility to report the more accurate number, particularly given both numbers are in the public arena. Agreed that s 9(2)(a) will raise the discrepancy with ECan and seek clarification of their reported SNC result. If they hold the line on the previously reported number, the SDWA report will need to stick with that.
- The timeframe for achieving the water metering objective isn't until 2020 and while progress is slow, there is still time left to get there. The commentary in the report acknowledges progress on this target is lagging and that achieving it will be a challenge. This is on the advice of Telarc that commentary must reflect actual progress.

The members agreed to approve the 2016/17 SDWA report. Any further feedback on details is to be provided to s 9(2)(a) before COB Monday 3rd December.

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3. Public release arrangements for the 2016/17 SDWA Progress Report

s 9(2)(a) outlined the options for public release of the 2016/17 SDWA report. A 'soft release' is proposed as the report is overdue, and the end of the year is fast approaching. Member feedback was sought on whether the report be released by:

1. Loading onto DairyNZ website with links on the DCANZ website and other accountable partners as appropriate; or
2. Loading onto the websites as above, plus a media release.

Members provided the following feedback:

- How the report is released will be influenced by what the key messages are. While progress has slowed, overall progress is still very good. The key messages are in the Chairman's Foreword which hasn't been distributed to the members yet.
- Key messages can be shared at the Dairy Environment Leaders Forum in Wellington next week. s to provide talking points to s .
- There is potential for public confusion over what season the report relates to as it is quite late. Processors haven't had enquiries about the report's progress and do not expect much reaction.
- Noted the discussion reinforces the current plans to move to a new reporting framework.
- Doing a media release provides the opportunity to both celebrate what's been achieved while also highlighting the future direction of the accord.

Members agreed to release the report by loading onto websites and doing a media release.

4. Proposed arrangements for the 2017/18 SDWA Audit Process

The Chair outlined the recommended approach for the 2017/18 audit and an overview of the discussions leading to the recommendation.

Following the February DELG meeting where the recommendation not to complete the 2017/18 audit wasn't agreed to, DairyNZ and DCANZ have discussed various options, from no audit to full audit. Telarc advice has been taken to inform the discussion.

The recommendation is to undertake a partial audit of the targets that haven't yet been achieved and that there is adequate data for. The targets that have been completed or substantially completed wouldn't be revisited. Under these criteria, the recommendation is to audit:

1. Installation of water meters;
2. Nutrient management;
3. Conversions.

Data for all other targets will still be collected and reported on, however the Telarc audit will be limited to the three specified targets. Noted the distinction between the audit and the report with the audit being independent verification of the data. It is important to report on all targets.

There was unanimous consensus among the members to proceed with the partial audit as recommended. During the discussion it was noted:

- There is still work to do on significant non-compliance and the SDWA report is the only place this is formally recorded. It's important this focus continues.
- It was confirmed all data can be reported.
- The 2017/18 audit will be the last, as we move to new framework based on Dairy Tomorrow Commitment 1 (topic for the next meeting).

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5. General Business

New secretariat

s 9(2)(a) is replacing s 9(2)(a) as secretariat. The Chair gave his thanks to s , acknowledging the 2016/17 SDWA audit was an arduous process and all the hard work s has put in to deliver the progress report.

Next meeting date

Propose a face to face meeting in Wellington early next year, likely February. Proposed dates will be circulated shortly.

Substantial decisions to be made on:

1. Transition to a new reporting framework;
2. What DELG's input to the regime will be

DairyNZ will provide the framework and recommendation on both topics.

These minutes have been accepted by the Chair as a true and accurate record of the meeting of the Dairy Environment Leadership Group on 29th November 2018.

Signed: _____ Date: _____

Chair

Action points on following page

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DELG Action Points

	Meeting	Action	Responsibility	Status
1	29 November 2018	Clarify Significant Non-Compliance data with ECan	s 9(2)(a)	
2	29 November 2018	Members to send any detailed feedback on 2016/17 SDWA report to s 9(2)(a) by COB Monday 03/12	Members	
3	29 November 2018	Provide key messages to s for Dairy Environment Leaders Forum next week.	s 9(2)(a)	

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Attachment B: Water Accord 2016/17 Progress Report – Chairs' Foreword

Water Accord Foreword

A sustainable dairy sector is good for our economy, creating employment, exports and a farming lifestyle. Farmers understand that our sector's sustainability is dependent on our ability to manage resources respectfully and responsibly.

We know New Zealanders want and expect us to care for our waterways. When the Sustainable Dairying: Water Accord, was launched in 2013, New Zealand's dairy farmers committed to improving waterway quality by reducing their environmental impact. The Water Accord, a voluntary initiative involving approximately 11,500 dairy farms, is a set of national good practices to lift environmental performance.

This is the fourth annual progress report for the pan-sector Sustainable Dairying Water Accord, for the year 2016/17. It shows genuine progress with our commitments. Five of the Accord targets have been achieved and substantial progress has been made with another three. Each step forward represents a significant effort and investment by farmers and dairy companies.

Over the past four years, dairy farmers have completed fencing of 97.5 percent of waterways on their properties to prevent dairy cattle from entering waterways. Bridges and culverts on 99.7 percent of stock crossing points also exclude cows from rivers and streams. Behind these statistics are thousands of individual farmers, budgeting for fence posts and wire, often in tight years with low milk prices, putting in the man hours and keeping up the maintenance.

Like maintaining waterway fencing, our work towards achieving good farming practice is never completed. Research, often funded by farmers, is enabling us maintain momentum.

In November 2017, we launched the Dairy Tomorrow strategy that sets out our commitments and goals for the coming years. The strategy champions the implementation of Good Farm Practices which bring together the best sustainable farming methods.

How we measure future significant on-farm environmental improvements, taking learnings from the Water Accord, is an important focus of Dairy Tomorrow. Our sector is exploring a new measurement and reporting framework that is strongly aligned with the international Dairy Sustainability Framework (DSF).

We look forward to sharing this with you in the future.

s 9(2)(a)

DairyNZ

s 9(2)(a)

Dairy processing companies association of New Zealand

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Attachment C: Sustainable Dairying: Water Accord – five years on

s 9(2)(a) *and* s 9(2)(a)

DRAFT Summary - May 2019

Introduction and scope of this report

For the 2017-18 season, 11,079 dairy farms are covered by the Sustainable Dairy: Water Accord (Accord) process. Dairy farms supplying Fonterra, Miraka, Open Country, Synlait, Tatua, and Oceania all fall within the scope of the Accord. Farms supplying other dairy companies are not included in the Accord's measurement and reporting system.

Each year the Accord's accountable and supporting partners submit comprehensive data outlining their performance against the commitments and targets outlined in the SDWA. This data is consolidated by DairyNZ prior to undergoing an independent audit by TELARC Limited.

The Accord sets out a number of commitments and targets in the following areas:

- Riparian Management
- Nutrient Management
- Effluent Management
- Water Use Management
- Dairy Farm Conversions

For the 2017-18 season, the Dairy Environmental Leader's Group decision was to restrict the on-farm audit to three of these areas: Nutrient Management, Water Use Management and Dairy Farm Conversions. This report provides a summary of these three audited areas. These have been reviewed by TELARC and verbal feedback provided, however the final auditor's report is not yet available.

The data collation and consolidation processes are undertaken in accordance with the following Audit Standards:

- Sustainable Dairying: Water Accord Audit Standard (DairyNZ Requirements) Version 7, December 2017
- Sustainable Dairying: Water Accord Audit Standard (Dairy Company Requirements) Version 9, 2017

The full auditor's report will be made available on the completion of the audit.

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Performance summary – Audited sections

NUTRIENT MANAGEMENT[1]	2017/18 RESULTS	
Nutrient management data collected from 100% of dairy farms by 31 May 2015		Not achieved. Data collected from 94% of farms in the 2017-18 season
Nitrogen loss and Nitrogen conversion efficiency performance information reported back to 100% of these dairy farms by 30 November 2015		Achieved
WATER USE MANAGEMENT		
85% of all dairy farms to install water meters by 2020		In progress and on track
CONVERSIONS		
For 2017/18 season, all new dairy farm conversions comply with environmental standards before milk supply commences		Not achieved for 2017-18 season. (one farm non-compliant)

[1]For Clarity and consistency percentages reported here are rounded to the nearest significant figure.

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Nutrient Management

The Accord expectation is that:

- Dairy farmers will manage Nitrogen (N) and Phosphorous (P) loss from dairy farming systems, acknowledge the need to manage within nutrient loss limits, and pursue continuous improvement in nutrient use efficiency.

Nutrient Management Data Collection

Every dairy company has developed programmes to collect nutrient management data from their farmer suppliers and model these using agreed protocols (OVERSEER Best Practice Input Standards). Data collection and verification systems for the 2017/18 seasons continue to improve and build on the progress made in previous years.

During the 2017/18 season nutrient management data was collected from 94% of Accord dairy farms, with 100% of these farms receiving performance and benchmarking information. Although this is result is slightly short of the Accord target of collecting data from 100% of farms by 31 May 2015, it is important to acknowledge that significant progress has been made as a direct result of the continuing investments that processing companies are making to improve nutrient management performance on-farm.

TARGET	
Nutrient management data collected from 100% of dairy farms by 31 May 2015	Not yet fully achieved – still in progress Data collected from 94% of dairy farms

TARGET	
Nitrogen loss and Nitrogen conversion efficiency performance information reported back to 85% of these dairy farms by 30 November 2014	Achieved

Average Nitrogen Loss by Region

Since the Accord's launch the sector has been steadily building a comprehensive dataset on Nitrogen-loss and Nitrogen use efficiency. The data generated through by 2017/18 audit has been included in the dataset and used to produce the regional average N leaching loss data in Table 1. The observed variance in regional N leaching loss is a function of several factors, including soil type, drainage characteristics (including rainfall and/or irrigation) and farming practices.

We have also used this data to derive a national average N-loss which is 43 kg N/ha/yr which is a slight increase on the 41kg N/ha/yr reported last season. However, the 2017/18 season figure was calculated using Overseer version 6.3, and the 2016/17 season was calculated using Overseer version 6.2.3 making comparison of the values inappropriate as differences may relate to the changing software.

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Table 1: Regional average N leaching loss (kg N/ha/yr) and sample size across 13 regions based on 2017/18 season data

Region[1]	Average N-loss[2] (kg N/ha/yr)	Sample size (number of farms)	5 year rolling average[3] (kg N/ha/yr)
Northland	32	844	26
Auckland	26	259	22
Waikato	38	3910	35
Bay of Plenty	43	628	43
Gisborne/Hawke's Bay	41	80	37
Taranaki	53	1613	52
Manawatu	33	846	30
Wellington	44	164	36
Tasman	67	128	69
Nelson/Marlborough	42	53	40
Canterbury	62	1198	56
Otago	39	459	36
Southland	44	935	38

[1]The West Coast region had only two farms reported this season, so the average N loss has not been reported to protect the anonymity of the farmer's information, and because it is a small sample size

[2]For clarity and consistency percentages reported here are rounded to the nearest significant figure.

[3]The 5 year rolling average has been calculated using data generated from 5 different versions of Overseer, as the model was updated at least once per season, changing the model outputs.

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Water Use Management

The Accord expectations are:

- Dairy sheds will use no more water for wash down and milk cooling than that necessary to produce hygienic and safe milk
- Irrigation systems will be designed and operated to minimise the amount of water needed to meet production objectives

Water metering on dairy farms

Dairy companies reported that water meters were installed on additional 203 farms during the 2017/18 season taking the total number of farms with meters to 5980 (or 54%). However, the on-farm auditing process indicated that of the 78 farms audited, 60 had water metres (77%), compared with a reported 51 (65%). This suggests a high degree of uncertainty and potential inaccuracy in the reporting of water meters, indicating that the existence of water meters on farms has likely been underrepresented in data reported to date.

In addition, increasing regulation of water takes, for example in Northland and Bay of Plenty, will likely stimulate an increase in water meter installation in these areas.

TARGET 85% of all dairy farms to install water meters by 2020	 In progress and on track

Previous year's results

Year 1: Reporting not required until 2014-15 season, but one company reported that 48% of their farms had water meters installed, and another noted that 30% had meters installed.

Year 2: over 98% of farms were assessed for installed water meters for the 2014/15 season. Dairy companies reported that 3,500 farms (over 30% of total farms) had installed a meter.

Year 3: In 2015/16, 11,451 dairy farms were assessed. Dairy companies reported that 5,701 farms (49.8% of total farms) had installed meters.

Year 4: Dairy companies reported an additional 76 farms installed water meters during the 2016/17 season, taking the total to 5,777 (52%) of the 11,079 farms assessed.

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Conversions

The Accord expectations are that:

- New dairy farms establish and operate using good practice at the outset to minimise potential negative consequences on water values and interests
- New dairy conversions will comply with all relevant regional plan rules and/or hold necessary resource consents

As reported previously, dairy companies have introduced programmes that outline a range of requirements that should be met before milk supply commences. In most instances, this involves a trained company assessor visiting farms and working with the farmer to ascertain whether requirements, which focus on the adoption of environmental good management practices for effluent, waterways, nutrient management and other relevant regulatory conditions, have been met. During the 2017/18 season only 22 farms were converted to dairy.

Of the converted farms, one did not comply with all internal dairy company environmental standards before the commencement of milk supply. These requirements are more stringent than regional council requirements which the farm did comply with at the commencement of supply. Separating out the dairy company standards and regional council standards for reporting was not possible at the time of the audit, so the farm was classed as not complying.

Since 2013, 92% of all converted farms achieved compliance with environmental standards before supply commenced.

Target For 2017/18 season all new dairy farm conversions comply with environmental standards before milk supply commences	Not achieved – 95% achieved

Previous year's results

Season	No. farms converted (since 2013)	Fully compliant
2013-14	No data provided	100%[1]
2014-15	"Since 2013, 175 conversions, with 50 farms (compliant)" By 29 Feb 2016, dairy companies report that of 142 farms, 81% are now fully compliant"	29% by May 2015 81% by March 2016
2015-16	253 (78 this season)	100%[2]
2016-17	298 (45 this season)	91.3 %
2017-18	320 (22 this season)	95%

[1] This report states that "in some cases, short-term dispensations may be granted for a transition period"
[2] Note for the previous year's Accord report not all farms had all the requirements listed above before milk collection commenced, but that has now been rectified and all new conversions have been checked.

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Attachment D: Farm Planning / Assurance Framework Design

s 9(2)(a)

dairy tomorrow
The future of New Zealand dairying

Dairy tomorrow is about taking a comprehensive approach to the sustainability of dairying in New Zealand, considering farm economics, market demand, animal welfare, people, and social factors alongside environmental impact. This gives rise to our six commitments.

1. We will protect and nurture the environment for future generations
2. We will build the world's most competitive and resilient dairy farming businesses
3. We will produce the highest quality and most valued dairy nutrition
4. We will be world leading in animal care
5. We will build great workplaces for New Zealand's most talented workforce
6. We will help grow vibrant and prosperous communities

All of which are important and must be addressed, however this starts to look like lot of change, with a large proportion on farm.

At an individual farm level this raises questions for us:

- How good am I? How do I compare with my peers? How do we collectively compare with others?
- What must I work on now? What can wait? How do I choose?
- How do I change in the areas I want to focus on?
- How do I communicate what I am doing, and get recognition for this?

At an industry level we have similar questions:

- How do we compare with other countries?
- How do we put NZ performance in a global context – for both domestic and export market audiences?
- How do we get recognition for our collective performance? Can we leverage our performance to support sales and value capture?

There are also many places that require information – often about the same things, in similar yet different forms creating duplicate work (e.g. my local authority, dairy processor, meat company).

The big idea from the dairy tomorrow partners[3] is:

We can create a structure that brings all the aspects of farm performance together in a unified framework – with well-defined and recognized performance scales – to help farmers decide what is important to do on their farm, and provide consistent and verified information about their performance and actions to meet the needs of stakeholders.

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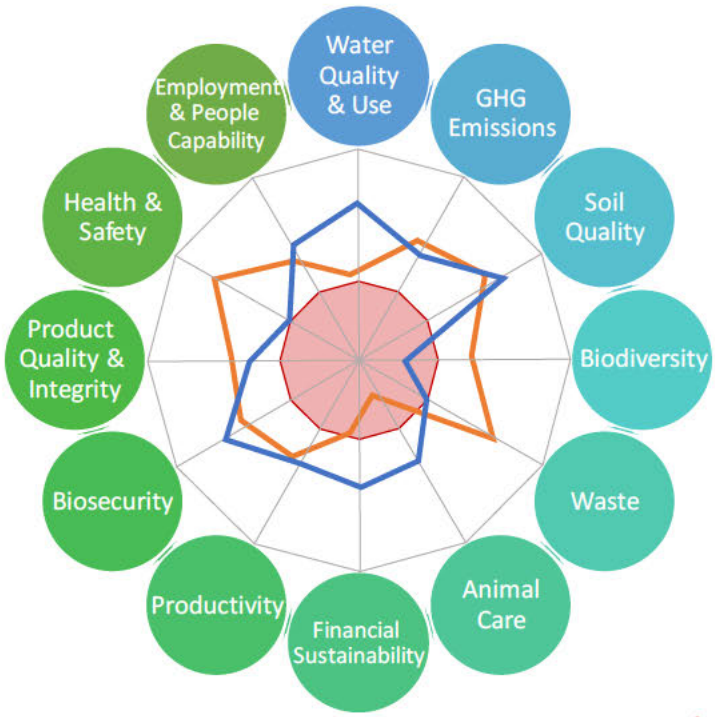
[3] The dairy tomorrow partners are: DairyNZ, Dairy Women's Network, Federated Farmers, and Dairy Companies Association of New Zealand.

Twelve attributes have been identified to form the basis for the framework. These are shown below.



We are working with MPI and others in this area. Following a request from Minister O'Conner to look at the compliance and audit burden on farmers MPI have established a complementary programme of work that looks to connect across primary sectors and the various regulatory bodies to standardize where possible the information requirements on farmers.

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Attachment E: Transition from the Sustainable Dairying: Water Accord to a C1 monitoring and reporting framework – *draft conceptual framework*

s 9(2)(a)

Introduction and background

The Sustainable Dairying: Water Accord was launched in 2013 with the goal of developing, implementing and monitoring a set of national Good Management Practice benchmarks aimed at lifting environmental performance on dairy farms. The Accord has been highly successful in driving change and has demonstrated the ability of the dairy sector to commit to, and deliver improved environmental performance through a non-regulatory focus on Good Farming Practices across key environmental practices.

The 2017/18 season marked the fifth and final year of the Accord auditing and coincided with an update to the 2013-2020 Diary Farming Strategy and subsequent shift to the Dairy Tomorrow Strategy in 2017. The Dairy Tomorrow Strategy outlines the sectors commitment to farming into the future through six core commitments. The first of these commits to protecting and nurturing the environment for future generations and C1-1 commits to leading efforts to improve the health of our rivers and streams and protect and enhance biodiversity. Logically, the end of the Accord audit process, the start of the Dairy Tomorrow Strategy, and an ongoing demand from Government and the public for improved water quality and environmental outcomes, delegates a logical progression into the next generation of monitoring and reporting the dairy sectors commitment to the environment.

A framework for transitioning from the Accord to C1

The SDWA has clearly and successfully demonstrated how commitments have been turned into action and the significant progress dairy farmers have made towards lifting environmental performance. There is however a need to continue to lift the bar and demonstrate to stakeholders and the wider community that dairy farmers aspire to farm within environmental limits and are continuing to work to achieve this aspiration.

Importantly, the central and regional government, and the public, are no longer satisfied with a simple demonstration of all the great actions that are and have taken place on dairy farms. They are now demanding to see outcomes of the effects of those actions and will continue to be critical until we can link on-farm change to improvements in the environment. This is challenging giving the complexities of lag times and broader catchment-scale impacts, but something that we should aspire to demonstrate.

The accompanying diagram illustrates a potential framework to help guide the transition from the SDWA to the Dairy Tomorrow Strategy C1 monitoring and reporting workstream.

Approach

The transition from Accord to C1 monitoring and reporting should aim to meet the Dairy Tomorrow Strategies commitment to lead efforts to improve the health of our rivers and streams and protect and enhance biodiversity. C1 is an opportunity to reassess the information that is currently captured through the Accord, and make changes to fill gaps, meet national and international requirements,

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and align to information that should be captured through Farm Environmental Plans (FEPs). The approach should also aim to consolidate the amount of information farmers need to provide to different users, improve consistency of messages being delivered to farmers, and ensure the highest possible standards of advice across the sector.

Targets, commitments and verification

1. Review current Accord targets and commitments, undertake a GAP analysis and determine which metrics are needed to meet sector, government, public and international requirements
2. Align new targets and commitments with the Good Farming Practice Action Plan for Water Quality principles to ensure C1 aligns with broader agriculture and horticulture sectors commitment to swimmable rivers and ecological health of our waterways
3. Align new targets to commitments to meet national and international framework requirements (e.g., Living Standards Framework, Farm Assurance Plans, Dairy Sustainability Framework, United Nations Sustainability Goals)
4. Align new targets and commitments with processor and Regional Council Farm Environment Plan initiatives to ensure information is only being collected once and on-farm information collected will allow future science to link farm system and mitigation changes with environmental outcomes
5. Engage the Accord auditors (Telarc) to undertake a review of the importance of independent audit on the process of collecting robust and reliable environmental information, and lessons that can be learnt from the previous five years of auditing
6. Annual progress report and five-year summary report, including potentially reporting on the diary sectors contaminant footprint.

Desired outcome: *Future suite of targets and commitments aligned to GFP-AP for WQ, monitored and recorded through FEPs, and presented in a transparent, verified way nationally to government, rural stakeholders and the public, and internationally, to meet obligations, scientifically link to environmental improvements, and demonstrate NZs commitment to environmental sustainability.*

Training, certification and farmer extension

Although not a C1 deliverable, the transition from Accord to C1 does offer a significant opportunity to improve the way under which sector training, certification and accreditation programmes are delivered by rural professionals, and the mechanisms under which farmers receive professional advice. We p opose that a concurrent workstream could/should be undertaken and aligned with the transition from Accord to C1.

1. Undertake a review of all current Advisor, Certification and Training programmes currently undertaken across New Zealand, including GAP analysis, with the aim of consolidating and coordinating delivery
2. Undertaken a campaign to increase the number of Rural Professionals trained and accredited under certified training schemes, including a partnership with government to ensure that there is increased financial reward for being part of the schemes (the “why” rural professionals should bother to upskill)
3. Run a targeted environmental extension campaign across key topics to “push” relevant information and ensure that farmers are knowledgeable, understand why environmental

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outcomes are important, and are armed with sound understanding of what can be done to improve outcomes.

Desired outcome: *Farmers are aware and knowledgeable on all environmental issues affecting their farming business through consistent and targeted messaging and highest standards of up-to-date information*

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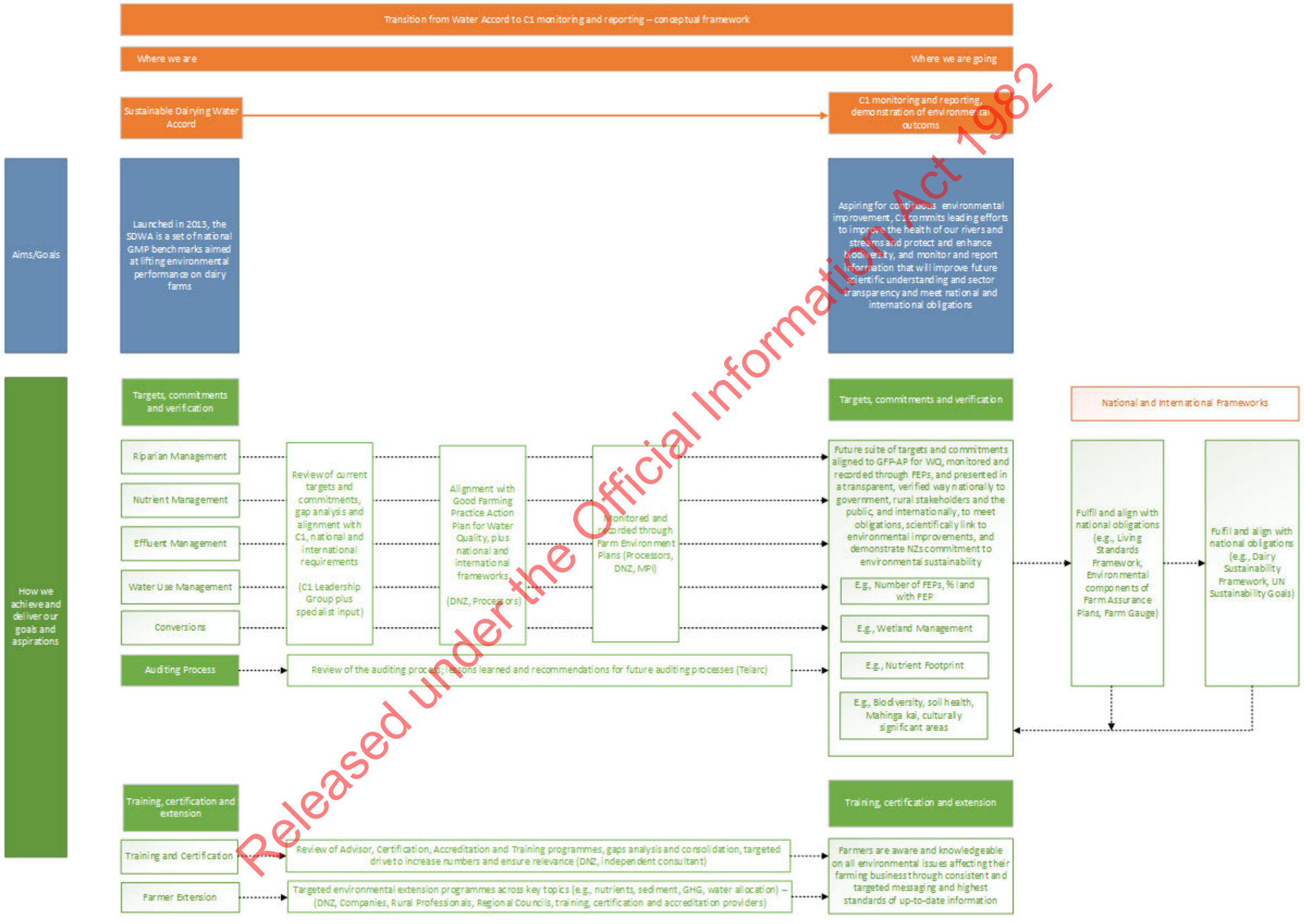

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Andre Silveira

From: Tanya Cornwell <Tanya.Cornwell@dairynz.co.nz>
Sent: Thursday, 22 August 2019 4:01 PM
To: 'Alister Body'; Sam McIvor; Martin Workman; s 9(2)(a) Tracy Brown; 'Charlotte Rutherford'; Rob Phillips; Basil Chamberlain; MBIE (Max.Kennedy@mbie.govt.nz); Chris Lewis; David Burger; Jenny Cameron; Terri van Jaarsveld; Andrea Harris; Maureen Comerford (Maureen.Comerford@beeflambnz.com)
Cc: Simon Stokes; Aslan Wright-Stow; Caleb Higham; Electra Kalaugher; Natalie Smith; Joe Mack (TRC); Jan Brown; Ida Rima (Ida.Rima@mpi.govt.nz); Victoria Young; Charlotte Denny (MPI)
Subject: DELG meeting
Attachments: DELG Agenda August 2019.pdf

Importance: High

Tēnā koutou

I hope this email finds you all well. Please be advised that the DELG meeting wi l have a **one hour delayed start** and will run from **11am to 12:45pm**. I greatly apologize for any inconvenience this may cause. The meeting agenda with the draft minutes from the May meeting are attached for your reference.

The lunch will still talk place from 1pm to 3pm. If you have any dietary requirements, please let me know **by 3pm tomorrow** (Fri, 23 Aug) so catering can be organised accordingly.

Ngā mihi nui

Tanya Cornwell
Kaitohutohu kaupapa matua - Senior Policy Adv sor
Policy & Advocacy
Responsible Dairy Group

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Dairy Environment Leadership Group
Meeting Agenda

Date: Thursday, 29 August 2019
Time: 11.00am to 12.45pm
Venue: DairyNZ Boardroom, Level 10, 86-90 Lambton Quay, Wellington

No	Item	Lead	Paper	Time
1	**Welcome** a) Apologies b) Review minutes and action points from 16 May 2019 meeting	Alister Body	Yes Minutes – May 2019 (Attachment A)	11.00am (15 mins)
2	**Sustainable Dairying: Water Accord 2017/18 report (final)**	Alister Body / s 9(2)(a)	No	11.15am (20 mins)
3	**Update on Sustainable Dairying: Water Accord Synthesis report** a) Report	Alister Body / s 9(2)(a)	No	11.35am (30 mins)
4	**Dairy Tomorrow Commitment 1 (C1) –** a) Transition b) Independent Reference Group	Alister Body / Dr David Burger *(Strategic Investment Leader, DairyNZ)*	Yes Attachment B	12.05am (30 mins)
5	**General Business** a) Matters arising b) Farewell	Alister Body	No	12.35pm (10 mins)
	Meeting Close			12.45pm

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Attachment A: DELG meeting minutes – 16 May 2019

Minutes of the meeting of the Dairy Environment Leadership Group held on Thursday, 16 May 2019.

Present:	Alister Body (Chairperson), s 9(2)(a) (FOMA), s 9(2)(a) (Federated Farmers), s 9(2)(a) (Forest & Bird), s 9(2)(a) (Fonterra Shareholders Representative), s 9(2)(a) (MBIE), s 9(2)(a) (Ministry for Primary Industries), s 9(2)(a) (Environment Southland), s 9(2)(a) (Beef+Lamb), s 9(2)(a) (DCANZ), s 9(2)((Farmer Representative) Apologies for lateness: Charlotte Rutherford (Fonterra), Martin Workman (Ministry for the Environment)
Apologies for absence:	s 9(2)(a) , s 9(2)(a)
In attendance from DairyNZ:	Dr David Burger, s 9(2)(a) (in part), Tanya Cornwell (Secretariat), s 9(2)(a) (in part), s 9(2)(a) (in part)

1. Welcome and Introduction

The Chair welcomed and thanked members for attending. The Chair acknowledged the year-four Sustainable Dairying: Water Accord audit report was available in print and facilitated round-table introductions. The Chair outlined the agenda and noted apologies received. Moved s and seconded s 9(2) .

The DELG members agreed that the Minutes from the 29 November 2018 meeting were a true and accurate record. Moved s 9(2)(a) , seconded s 9(2)(a) .

The Chair reviewed the action points from the November 2018 meeting and acknowledge they had all been completed.

The Chair also advised of the three objectives for today's meeting, being:

1. Agreement on the progress regarding the final Sustainable Dairying: Water Accord (year 5) audit report
2. Agreement on the Sustainable Dairying: Water Accord synthesis report
3. Agreement on the future role for DELG and the transition process

2. Sustainable Dairying Water Accord (SDWA) 2017/18 audit (final)

s 9(2)(a) presented an update on the progress of the final audit report and advised that the reduced scope of the year-5 audit had been approved by TELARC. The audited data being:

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1. Nutrient Management
    - Nutrient management data collected from 100% of dairy farms by 31 May 2015
    - Nitrogen loss and Nitrogen conversion efficiency performance information reported back to 100% of these dairy farms by 30 November 2015

2. Water use management
    - 85% of all dairy farms to install water meters by 2020
3. Dairy Farm Conversions
    - For 2017/18 season, all new dairy farm conversions comply with environmental standards before milk supply commences

Discussion of the sections were as follows:

Nutrient Management

With the data of 94% of Accord farm collected, s 9(2)(a) presented a table of regional averages of nitrogen leaching for the 2017/18 season. Discussion ensued over the caveat of the five years' worth of data not being comparable as Overseer had gone through various versions. Members were advised that it is not possible to obtain the data over the past five years to calculate more accurate 5-year rolling averages (DairyNZ only has access to the current version of Overseer).

The following suggestions for this section in the report were made:

- Explanation of how N loss affects the environment;
- To present the data with a (bar) chart to include the qualifying data point, and some form of error (standard deviation, error bars, or range);
- Emissions / efficiency trend(s) over the five years (per region and as a whole). It was noted that there may be difficulties from obtaining more data from the various processor companies, as the current data held does not lend itself to this analysis.

The concern of how the media will interpret the data was mentioned and that DELG would need to be prepared to respond.

Water use management

s 9 2)(a) advised that year-5 of the Accord had seen installed water meters increase to 54% of Accord farms. s 9(2)(a) also advised that there had been an underreporting issue as 65% of farms had reported having water meters, however the audit determined 77% of farms having water meters. It was discussed whether this was indeed underreporting, or if this shows Accord farms being ahead of the target (target being 85%).

Members were advised that as there was no clear definition of 'water meter' TELARC accepted various meter mechanisms.

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Dairy Farm Conversions

A summary table over the five years of the Accord was presented indicating in the (final) 2017/18 year, out of the 320 conversions since the start of the Accord, 22 being in 2017/18 and only one of these 22 farms was not fully compliant. A small discussion followed regarding that although a farm may meet Council compliance rules, dairy companies have more stringent environmental standard compliance rules which may result in a 'not fully compliant' classification.

Challenges

s 9(2)(a) highlighted the challenges of the final-year audit and suggested to provide clarification in the audit report of why things were chosen the way they were. It was queried whether the case studies in s 9(2)(a) 's PhD thesis could be included in the report. It was agreed that also the case studies were not just dairy, s 9(2)(a) would determine which case studies would be relevant to the year-5 report.

A traffic-light summary table of all targets (audited and not audited) over the five years of the Accord was presented. Green meaning 'achieved'; yellow/amber having various meanings ('awaiting verification', 'on track', 'not yet achieved', 'not yet fully achieved', 'in progress'; red meaning 'not achieved'. It was noted that the change in target progress over the years (particularly from 'in progress' to 'not achieve') was due to changing targets between years.

It was agreed that although the amber status indication has various meanings, the final year-5 report needs to be consistent with the previous reports. It was agreed that the synthesis report could progress on from this formatting, by including figures such as bar graphs to show the trends over time.

Publication options

s 9(2)(a) advised that the final year-5 audit report should be complete by the end of May and that he envisages commencement of the synthesis report in the new financial year.

It was agreed that the timing of the Water Accord synthesis report is important and should be expedited as it tells the voluntary uncharted path of what dairy farms are doing for New Zealand's waterways. It was advised that progress on the synthesis report would be contingent on receiving the data from the milk companies. It was advised Ministers might want to make an announcement regarding the findings of the synthesis report.

It was agreed for DairyNZ to develop options for the synthesis report to include the history and reasoning of the Accord, and the trends and progress dairy has made over the five years. It was also agreed for DairyNZ to capture any learnings from the long-term DELG members for inclusion in the report. The Chair is to be provided with the information.

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3. Update on the overview of the Integrated Farm Plan framework and workstream progress

The members were presented an overview of the outcomes-focused Dairy Tomorrow strategy, the six commitments and the overarching vision and principles. They were also presented with the basic concept of the framework highlighting the 12 attributes.

A discussion ensued on the broad direction of Commitment 1 (C1), the appropriateness of Farm Environment Plans (FEPs) being used as a compliance tool (noting increasing costs for farmers), and the importance of the standardisation of data, data collection, and data sharing via a cloud-based application. It was shared with the members that Minister O'Connor envisages FEPs as more than just a compliance tool. It was also emphasised that credible, robust data is invaluable to benchmark the standard and monitor/report incremental changes/improvements.

Discussion was also had regarding how the outcomes of C1 are guided by principles (co-developed with MPI) and are processed focused. DairyNZ has agreed to seek consultation for the 12 principles and to determine focus prioritisation.

A resilience and public perception discussion followed querying where the 'dirty dairying' perception comes from and what the industry needs to do to change the perception. Changing the narrative away form 'farming with limits' was discussed as this does not resonate with the younger generations. 'Regenerative farming' was discussed as it is becoming more of an accepted agricultural practice, however, a more definitive definition would be necessary prior to consideration. It was also suggested for the public perception to be included in the strategy.

Data capture versus data integration was also discussed, noting that they are completely different from one another. It was discussed how data integration drives and expands data capture, and if frameworks focused on the reverse, the high expense of data capture would lead minimalization to reduce costs.

Beef+Lamb emphasised that they would like to work with DairyNZ in the Dairy Tomorrow C1 space.

4. Update on Dairy Tomorrow Commitment 1

The purpose C1 and the key focus for each of the four goals were highlighted upon. It was acknowledged that farm plans are a good mechanism for helping to achieve the commitment.

The six key components of C1 were discussed.

<u>Understanding our footprint</u> (farm to catchment to region to country):
Dairy must understand how we are tracking across space and time, querying reporting on N and P footprint at a catchment scale. The measure of ecosystem health was questioned, noting that this requires productive partnership between industry, government, and science.

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Good farming practice
The goals were outlined noting that good farming practices must not been seen as a limiter, but as standard practice; and that is must apply to all farms (no matter the scale) over goals. It was acknowledged that there will be challenges with metrics and outcomes.

Accelerating uptake of on-farm mitigation tools (design- performance- upscaling- guidelines- uptake)
A quick overview of mitigation case studies (Phase I) was provided (NIWA and Overseer involvement), advising that the findings were utilised in developing guidelines (in final drafting stages). Phase two would progress to testing the draft guidelines with future work progressing toward guideline revisions. This is likely be confronted with testing and funding challenges (re: monitoring aspect). It was suggested for DNZ to reframe the mitigation work to climate change and to apply to MPI (mitigation & adaptation) funding. There was agreement for the importance of Government recognition for what dairy farmers are doing in the mitigation space.

Change at pace and scale
It was emphasised that the dairy industry wants more publicity to show New Zealand what the industry is doing. It is important for the public to know about the industry working on getting farms up to good farming practice (e.g. the work on the partnership farms), particularly around wintering practices, the work on plantain and farm systems.

Dairy action plan for climate change
It was advised this is a developing detailed programme of work and it endeavours to set the foundation of what farmers need to do with a focus on behaviour change.

A plan for the future
In discussing where dairy needs to go and how it is to get there, water quality, economic and socio-economic models (for social implications) were mentioned. As well as connecting dairying with Living Standards Framework.

Next Steps were also discussed regarding dairying and water quality. It was queried whether new metrics should be a continuation of Accord metrics? Or, something new? Emphasis was again given regarding the importance for robust data leading to the ability to tell the story.

DELG members requested Dr Burger's presentation.

No feedback was received following the Chair's feedback invitation.

5. DELG's future role – options and opportunities

The Chair went over the original purpose of DELG advising it was a representative group set up under Dairy Insight (approx. in 2000). It was also advised how the programme has morphed over the years and transition in to the Sustainable Dairying: Water Accord. It was the second reiteration of the Water Accord where DELG as it currently stands came onboard. The Chair reminded the members that the main job of DELG was to serve as a governance group, and that the industry is now at a time when the Water Accord is coming to an end. He queried what the future holds for DELG. The Chair advised that there would need to be one final meeting in July 2019 to finalise the 5-year audit report and to agree on a future role for DELG and the transition involved.

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Regarding C1, DairyNZ advised an implementation group and a high-level governance group (CE level) has been established and that what is needed is an independent C1 advisory group to challenge the thinking, provide robust advice on C1, and insights on bold improvement suggestions.

The following desires for this independent advisory panel were expressed:

- Diverse (e.g. culture and age), independent, and not restricted to a 3rd tier advisory group.
- To be relatively small, whose individuals are widely connected to an array of experts (e.g. ex-PCE)
- A mix of high level strategic and implementation thinking
- To include community representative individuals who will not be captured by dairy industry interests (e.g. a highly driven Millennial) – to ensure wider society concerns are properly understood and addressed, to facilitate greater public confidence in dairy's efforts to meet the commitments.
- Government agency representative (to provide insight to challenges to dairy)
- Inclusion of a wide range of stakeholders (cross-sector?) with the right level on expertise to be credible
- Include regional council perspective
- Must have community buy-in (farmer and non-farmer, possibly an urbanite)

It was agreed for DairyNZ to develop a paper to define the purpose of the independent advisory group and what exactly would be required to credibly advise on C1. From there it is envisaged the formation of the group would reflect the function of the group.

Once the independent C1 advisory group is formed, a Terms of Reference will be required.

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6. General business

New secretariat
Tanya Cornwell is replacing s 9(2)(a) as secretariat.

Compliance and enforcement
s 9(2)(a) was commissioned to conduct an independent review of compliance and enforcement in all regional councils. The report is expected to come out in a couple of weeks and could possibly be circulated to DELG members.

Next meeting
A *final* meeting has been proposed for July. Substantial decisions to make are:

- Finalisation of the year-5 Sustainable Dairying: Water Accord audit report
- Decision of the next steps for DELG and how the group would transition to a C1 advisory panel

It was also noted that this will be the final meeting for DELG as it currently stands. It was suggested for the meeting to also serve as a celebration and to invite all previous members.

These minutes have been accepted by the Chair as a true and accurate record of the meeting of the Dairy Environment Leadership Group on 29th November 2018.

Signed: _____ Date: _____
Chair

Action points on the following page.

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DELG Action Points

	Meeting	Action	Responsibility	Status
1	16 May 2019	Accord final audit report: Incorporate suggestions as indicated in the minutes	s 9(2)(a)	Complete
2	16 May 2019	To determine whether relevant case studies could be included in the final report	s 9(2)(a)	Complete
3	16 May 2019	Gather DELG learnings from long-term members and to put together options for synthesis report. Report to Chair	Dr Burger	Potentially to be done by BRG
4	16 May 2019	Beef+Lamb to work with DairyNZ on Commitment 1 of Dairy Tomorrow	s 9(2)(a) and Dr David Burger	TBC
5	16 May 2019	Develop a paper on the function and form of the independent C1 advisory panel. To address taking a broader approach to how to engage independent stakeholder input with the overall structure to best help the sector address the DT C1 commitments and provide public confidence. To be provided for the final meeting.	Dr Burger	In progress
6	16 May 2019	Provide Commitment 1 presentation to DELG members	Dr Burger	Complete

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Attachment B: SDWA to C1 transition & DT C1 Independent Reference Group

Purpose

This paper is to provide further context on the transition from the Sustainable Dairying: Water Accord as well as further context on the form and function of the Dairy Tomorrow Commitment 1 independent reference group.

Background

Sustainable dairy farming has a critical role to play in New Zealand's future prosperity and wellbeing. In 2017, DairyNZ along with farmers, industry leaders, and stakeholders launched a united Dairy Tomorrow Strategy to improve lives with every drop of New Zealand milk. Strategically guided by a Steering Group, Dairy Tomorrow (DT) is directed by bold, open, innovated, and collaborative principles which guide the following *s* x commitments:

1. We will protect and nurture the environment for future generations (led by DairyNZ)
2. We will build the world's most competitive and resilient dairy farming businesses (led by DairyNZ)
3. We will produce the highest quality and most valued dairy nutrition (led by DCANZ)
4. We will be world leading in on-farm animal care (led by DairyNZ)
5. We will build great workplaces for New Zealand's most talented workforce (led by DairyNZ)
6. We will help grow vibrant and prosperous communities (led by Federated Farmers)

Overview of Commitment 1

Commitment 1 has the following goals:

C1.1 Lead efforts to improve the health of our rivers and streams and protect and enhance biodiversity beginning in 2018 with collaboration with other urban and rural land users, central and local government and communities on strategies and actions toward achieving swimmable waterways;

C1.2 Lead efforts on agriculture's contribution to meeting New Zealand's climate change goals through identifying and implementing strategies to reduce or offset greenhouse gas emissions from dairy farming;

C1.3 With communities, government and other land users develop a blueprint for a 50-year vision of sustainable land use in New Zealand by 2025; and

C1.4 By 2025, achieve all farms implementing and reporting under certified farm sustainability plans.

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Transition

A dedicated Working Group has been established for each goal to provide strategic, technical and operational expertise for development and delivery the respective goal. (Please see Appendix 1 for more detail). In addition, Commitment 1 has its own suite of performance measures and Work Programme located at Appendices 2 and 3. These measure and programme of work were developed as a result from a gap analysis of the SDWA with consideration to ensure sustainability metrics, monitoring and reporting of our environmental performance is scientifically aligned to our domestic and international environmental initiatives and commitments

Independent Reference Group

The SDWA process was supported by the Dairy Environment Leaders Group (DELG), to provide governance and signoff around the delivery of the SDWA Commitments. With the transition of SDWA to Dairy Tomorrow, the role of DELG has become redundant. While the Dairy Tomorrow Implementation and Steering Groups provide the required governance functions for C1, the working groups leading each C1 goal believe there is value in establishing an independent C1.

Proposed role and functions

The proposal is that the Independent Reference Group's primary role is to challenge, question, critique and help guide C1 work programmes, to ensure the goals and aspirations for environmental components of Dairy Tomorrow are met and provide credibility to the proposed work programme and outcomes. The Group will not have any formal governance and oversight responsibilities.

The other key features of the proposed Industry Reference Group model are as follows:

(a) Structure

Although independent, the C1 Reference Group will be structured under DairyNZ's Environmental Stewardship programme. The group will umbrella the various C1 working groups to apply objective critical thinking across the work programmes (Appendix 4). It may be required for the group to liaise with DairyNZ senior leadership and/or strategy and investment group to directly discuss C1 goals and workstreams.

DairyNZ will only serve as the conduit for information sharing and provide secretariat services.

(b) Function

The purpose of the DT C1 Independent Reference Group is to:

- Challenge, question, critique and help guide C1 work programmes to ensure they underpin and deliver on C1 goals and aspirations by utilizing their networks and own expertise;
- Ensure the strategies, targets and reporting frameworks are on the leading edge of agroecological knowledge and practices, and align across the sector and with regional and national government initiatives, regulations and sentiments;

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- Work alongside the DT C1 Working Group to test challenge their strategic planning and operational delivery of work programmes.

(c) Membership

A specific array of subject matter expertise is required to credible advised on the C1 goals. Proactive recruitment will be utilised to strategically procure members. Members of this group will need to have a balanced and diverse range of expertise in:

NZ Ecology
Conservation
Water Quality
Climate Change
Mātauranga Māori
Agroecology / NZ Dairy Farming Systems
Public perception and community engagement

Ensuring that the Group is representative, in terms of values, geography, gender and intergenerational perspectives important.

Stakeholder Engagement

As recommended by DELG, DairyNZ will convene an informal, biannual, open-invitation workshop to provide updates on the progress of C1 and scope opportunities for future collaboration with a broad range of stakeholder groups.

Next steps

Once this transition and C1 Independent Reference group is endorsed by DELG, DairyNZ will start the strategic member-procurement process.

A Terms of Reference will be drafted and referred to the C1 Steering Group to ensure the membership, roles, and responsibilities are aligned with the overall strategic thinking of the Dairy Tomorrow Strategy.

Concurrently, a meeting programme will be confirmed.

Recommendations

- To note/agree of the transition from the Sustainable Dairying: Water Accord to Dairy Tomorrow Commitment 1.
- To note/agree to the proposal of the Dairy Tomorrow Commitment 1 Independent Reference Group

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Appendix 1: Dairy Tomorrow Commitment Working Groups

Each goal is led by a working group that provides strategic, technical and operational expertise for development and delivery the respective goal.

Commitment 1.1

This commitment is the next chapter in the water quality improvement journey. Along with protecting and enhancing biodiversity, this commitment carries on with good management practices for the continuation of our farmers' environmental performance. The working group driving the strategic and operation framework comprises of representatives from DairyNZ, Miraka, Open Country Dairy, Fonterra, Synlait, Tatua, and Westland. The group has scoped the workplan and outlined the transition from the SDWA.

Commitment 1.2

In partnership with Fonterra, the Ministry for Primary Industries, and the Ministry for the Environment, the Dairy Action for Climate Change (DACC) was commissioned (2017) to lead the work on dairy-farm greenhouse gas mitigations (led by the DACC stage I) and climate change adaptations (lead by DACC stage II). A subsequent work program to further lead and demonstrate a commitment to climate change action has been proposed through the development of a primary-sector climate change commitment, He Waka Eke Noa. This five-year work plan is being proposed as an alternative to the Interim Climate Change Committee recommendation for a processor-based levy. Irrespective of the outcomes the activities described in this Commitment will underpin the Dairy Sectors work programme for greenhouse gases under Dairy Tomorrow. Much of the work complements the SDWA commitments and relies on evidence-based solutions to facilitate the dairy sector's contribution help achieve a low-emissions economy.

Commitment 1.3

This commitment has linkages with C1.1 (water quality and biodiversity) and C1.2 (climate change). An internal regional development working group is undertaking a land-use modelling exercise to inform system fabrication which will aid regional councils and/or catchments groups to consider various land-use options as a function of sustainability. It is hoped that the progression of this commitment is accelerated through a proposed Ministry of Business, Innovation and Employment's proposal led by GNS Science and Market Economics, and linkages to the Our Land and Water National Science Challenge research programme on Land use Suitability.

Commitment 1.4

This commitment will be the culmination of the workstreams of the above commitments, with the delivery being executed by DT commitment 2 (building competitive and resilient dairy farming businesses), aligned with Central Governments Integrated Farm Plan work programme.

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Appendix 2: Commitment 1 Measures

Measures were considered by the Dairy Tomorrow Strategy Extended Implementation Group and the following four measures were endorsed:

Measure	Description
Nutrients	Inputs / outputs
Number of FEPs	To get ahead of the government's proposed, and highly likely environmental stewardship regulation (expected in the Essential Freshwater Announcement) for all farms, not just dairy, to have FEPs by 2025. DairyNZ is actively engaged in discussions with government officials and the wider sector to consider a national FEP certification / accreditation programme.
Scorecard	Water quality / environmental performance will be scored using a risk probability matrix (high/low likelihood vs the high/low consequence). The score will be utilised for sector-scale reporting at catchment and regional scales and takes into consideration the various farm system types and varying intensities. The risk-based scorecard is nested within MPIs Integrated Farm Plan workstream.
Reporting	To ensure transparency, accessible reporting / communications on water quality / environmental performance will be pro-actively released for dairy-heavy catchments (>75% dairy land-use) being Waikato, Horizons, Taranaki, Canterbury, and Southland.

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Appendix 3: Current Commitment 1 Work Programme

Workstreams	Actions	Milestones
Commitment 1.1: Water Quality		
1.1 Understanding our footprint	-Develop a national accounting framework to quantify contaminant loss from dairy land -Understand and report on state, trends and drivers of water quality and ecosystem health in dairy catchments -Develop appropriate metrics to report on water quality health and environmental footprint at catchment, regional and national scales	-Catchment accounting framework operational (2019)
1.2 At risk catchments	-Identify at-risk dairy catchments and options for management in collaboration with regional councils and central government	-At risk catchments and management opportunities identified (2020)
1.3 Mitigation tools and guidelines	-Review feasibility and performance of tools and interventions for on-farm and catchment water quality improvement and develop guidance material to support adoption by farmers and policy makers	-Farmers and regulators have robust guidance on edge of field mitigation tool design and performance (2020)
1.4 Metris and reporting framework	-Develop metrics to report on state and trends in water quality health and footprint in dairy catchments -Develop an annual reporting framework for key metrics including reporting of GFP	- Metrics and framework for Commitment 1 monitoring and reporting established and aligned to Good Farming Practice Water Quality Action Plan (2019) -Annual progress reporting on Commitment 1 (2020-2025)
1.5 Dairy Water Accord	-Meet existing sector commitments under the Dairy Water Accord and contribute to delivering sustainable improvements in water quality outcomes -Develop, agree on and implement transition of Dairy Water Accord to Commitment 1 -Report Year 5 Dairy Water Accord summary and transition plan	-Dairy Water Accord 5-year synthesis report published and transition plan towards meeting Dairy Tomorrow implemented (2020) -Sector commitments under the Dairy Water Accord are met and contribute to delivering sustainable improvements in water quality outcomes (2023)
1.6 Good Farming Practices	- Develop and work to support the uptake of National Good Farming Practice Principles and practices across all dairy farms by 2025 to improve and demonstrate water quality and ecosystem health	-National Good Farming Practice Principles developed and communicated (2018) -Framework for monitoring and reporting on GFP developed and implemented (2020)

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Workstreams	Actions	Milestones
Commitment 1.1: Water Quality		
		-Priority principles for each dairy region identified in partnership with regional councils (2020) -All dairy farms have assessed risks against priority GFP principles and response actions documented and being worked towards through a FEP (2020-2025) -Revised Good Farming Practices Action Plan (2020) -Strengthen and validate support systems and tools (2018-2020) -All dairy farms are operating at GFP (2025)
1.7 FEPs	-Work to support the uptake of FEPs across all dairy farms by 2025 -Develop a framework to quantify the impact of FEP uptake on water quality outcomes	-All dairy farms have an FEP (2025)
1.8 Catchment-scale change pilots	-Demonstrate environmental change and leadership at pace and scale through catchment case study initiatives developed and implemented in partnership with primary stakeholders, regional councils, central government and NGOs (2018-2021) -Integrate processor sustainability programmes (i.e. Fonterra 50 catchment programme) to demonstrate a national approach to environmental change -Establish reporting monitoring and eporting metrics to assess and demonstrate environmental improvement including annual assessment and reporting of progress -Provide farmers with the clarity, certainty and confidence to farm and meet environmental regulations while achieving profitable, resilient businesses	Selwyn-Hinds -Fifty farmers have a written plan, co-developed with DairyNZ, for the future of their farm systems that will meet their zone N targets. -Ten of these farmers, including two with dairy support blocks, have agreed to be 'farmer champions' with an agreed role over the 2019/20 season. -Farmers in the Selwyn-Hinds catchments have achieved a 36% N loss reduction against their baseline and are thriving through profitable, resilient businesses (2023) Aparima - Partnership work plan established and signed off (2020) - All Aparima catchment dairy farmers are aware of the project and 80% are confident in their understanding of key drivers of water quality and which practices will minimise contaminant loss (2020) - A water quality modelling framework to quantify

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Workstreams	Actions	Milestones
Commitment 1.1: Water Quality		
		improvements in water quality as a result of FEP implementation established in partnership with the regional council (2020) -Farm Environment Management Plans (FEMP) with a focus on wintering practice management are in place for at least 120 farmers identified (2020) -Adoption Good Farming Principles across all farms in the Aparima catchment has led to demonstrable improvements in river water quality and estuarine health (2023) Tararua - 40% of farms will have a plan demonstrating how they will achieve full adoption by 2025. - Thirty farms plant plantain as part of a diverse sward – Autumn 2020. - Ten farms following autumn sowing have planted 20%+ of their milking platform area in mixed sward. - Fonterra Tiaki information received and collated for 2018/19 season, capturing Nitrogen reporting and "non-Overseer" mitigations -Widespread adoption of plantain in the Tararua area will have secured farmers viability and shown the community that dairy farmers are making substantive gains in on-farm management and water quality (2023)
1.9 **Accelerated uptake of on-farm wetland and riparian management**	- Develop guidance for landowners to help protect seepage wetland on dairy farms - Develop provisional constructed wetland and riparian buffer performance and design guidelines for immediate use by landowners and regional councils - Design, establish and monitor a range of constructed wetland and riparian buffer systems across NZ to quantify and compare performance in different landscape and climate settings, and use this to refine and	-Preliminary constructed wetland and targeted riparian guidelines for a range of pastoral landscapes developed and communicated (2020) -Guidelines for seepage wetland protection and enhancement developed and communicated (2019) -Scientific program for testing constructed wetland and riparian

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Workstreams	Actions	Milestones
Commitment 1.1: Water Quality		
	validate provisional performance and design guidance - Encourage and support wide-scale uptake of appropriate wetland protection and constriction, and optimised riparian buffers as contaminant management tools - Establish a program to support adoption of guidelines by landowners rolled out in partnership with the primary sector and regional councils	buffer performance established in partnership with regional councils and MfE (2020) -Performance of constructed wetland and riparian buffer assessed and guidelines developed and agreed on with regional councils and central government (2023 -Robust guidance and design accelerates wide-scale protection across dairy land and contributes to reductions in contaminant losses to downstream receiving environments - Areas of protected wetland habitat on dairy land doubles by 2025
1.10 Public perception	- Establish The Vision is Clear: Let's Improve our Waterways movement that shares how Kiwis - rural and urban - value the water and inspires them to join a nationwide movement where every New Zealander is looking at the actions they can take to improve our rivers, streams, lakes and beaches.	- The Vision is Clear supports the dairy sector in maintaining its social license to operate by increasing the public's positive perception of dairy farmers by a target of 3% per year over 3 years.
Commitment 1.2: Greenhouse gases		
2.1 Building the foundation	- Build awareness and knowledge amongst the farming community and acceptance that action is required. - Build rural professionals' capability through GHG training to better support farmers and provide consistent advice on GHG mitigation	-60 rural professionals trained (2018) -Climate change ambassadors established and utilized to support farmers and policy development (2018) -Increased awareness amongst dairy environment leaders (2019)
2.2 Steps to a lower emissions sector	-Demonstrate biological emissions reduction potential on dairy farms through farm system changes and quantify the effect on production and productivity -Ground-truth farm system changes with dairy farmers -Educate dairy farmers, rural professionals, and the wider sector of farm systems changes which may be possible and the implications of these changes. -Support policy development	-Farm system options for reducing biological emissions on dairy farms established and implications understood (2019) -10 Partnership Farms across a range of farm systems throughout New Zealand established (2019)
2.3 Farm emissions reporting	-Test on-farm GHG recording system with farmers to understand what additional information and guidance they may require	-GHG on-farm recording pilot 100 Fonterra suppliers (2019)

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Workstreams	Actions	Milestones
Commitment 1.1: Water Quality		
	and to ensure it is fit-for-purpose if it is rolled out further - Work with MPI to develop an agreed methodology and systems for calculating net on-farm emissions. This includes approaches to using models, definitions of farm boundaries, and quantification of on-farm sequestration, and processes for recognising new mitigations in calculations. -Work to develop simple calculation tools is already well advanced. Further work to develop a farm level emissions accounting and reporting system	- By 2022, all farmers will know their farm emissions numbers. - By 2024, piloting of an emissions reporting and benchmarking system will be completed. -By 2025, a system for farm-level accounting and reporting of agricultural emissions will be in place at farm level.
2.4 Farm environment plans (FEPs)*	-Work with MPI and MFE to expand the Good practice principle guidelines for FEP's to cover greenhouse gases. - Work with rural professionals and regional councils to ensure farm environment plans give consideration to the wider farm system, rather than compartmentalising environmental outcomes.	-By 2025, All farms will have a farm environment plan in place. Progressive targets for uptake of FEPs over the period to 2025 will be developed and agreed with the government
2.5 Extension and Engagement*	- Further develop extension programmes that build on existing platforms and activities	- By 2021, the proportion of farmers who understand the actions they can take to reduce farm GHGs will have increased from 50% to 90%. -By 2022, the proportion of farmers who expect to place a moderate or major focus on reducing their GHGs will have increased from 23% to 70%. -By 2025, 70% of farmers will agree they are managing their GHGs in accordance with their Farm Environment Plans.
2 6 Innovation and uptake*	-Continue industry co-investment into mitigation of agricultural gases (e.g., via the PGgRC work programme). This	- Accelerate the advancement of inhibitor and vaccine methane reduction technologies for use in grass fed systems and confirm their impacts on productivity by 2025.
2.7 On farm planting support*	- Partner with the billion trees programme to advance planting of potential sequestration areas identified in farm plans - Work with government to develop systems for recognition of small-scale sequestration.	- By 2022, programmes to assist farmers to establish and maintain newly planted areas will be established. -By 2025, all farms will have planting opportunities identified in

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Workstreams	Actions	Milestones
Commitment 1.1: Water Quality		
		Farm Environment Plans, including recognition of small-scale sequestration.
2.8 Adaptation Strategies*	- The primary sector will work with Government to: — Produce a web-based document which provides regional guidance for farmers on the potential risks of adverse weather to their farm system. — Identify strategies of resilient farmers to future-proof their farm to the impacts of adverse weather — Develop an on-farm guide that farmers can use to identify strategies to minimise the impact of adverse climate change related events on their farm —Develop specific Māori guides (along traditional rohe boundaries) that outline the risks of adverse weather, farm resilience and future-proofing strategies.	- By 2023, all farms will have access to region and sector specific climate change adaptation information and resources. -By 2025, all farmers are prepared for the effects of climate change through identifying strategies and planning for adverse weather events in their farm environment plans
Commitment 1.3: Rural landuse		
3.1 Rural landuse	-Develop a conceptual framework -Develop a modelling framework and process to test an integrated rural landuse approach to a pilot catchment	-Conceptual framework and three-year co-development plan designed (2019) - Modelling framework and process to test an integrated rural landuse approach applied to a pilot catchment with allocation issues, in partnership with farmer and research stakeholders (2020)

**Based on primary sector Commitment*

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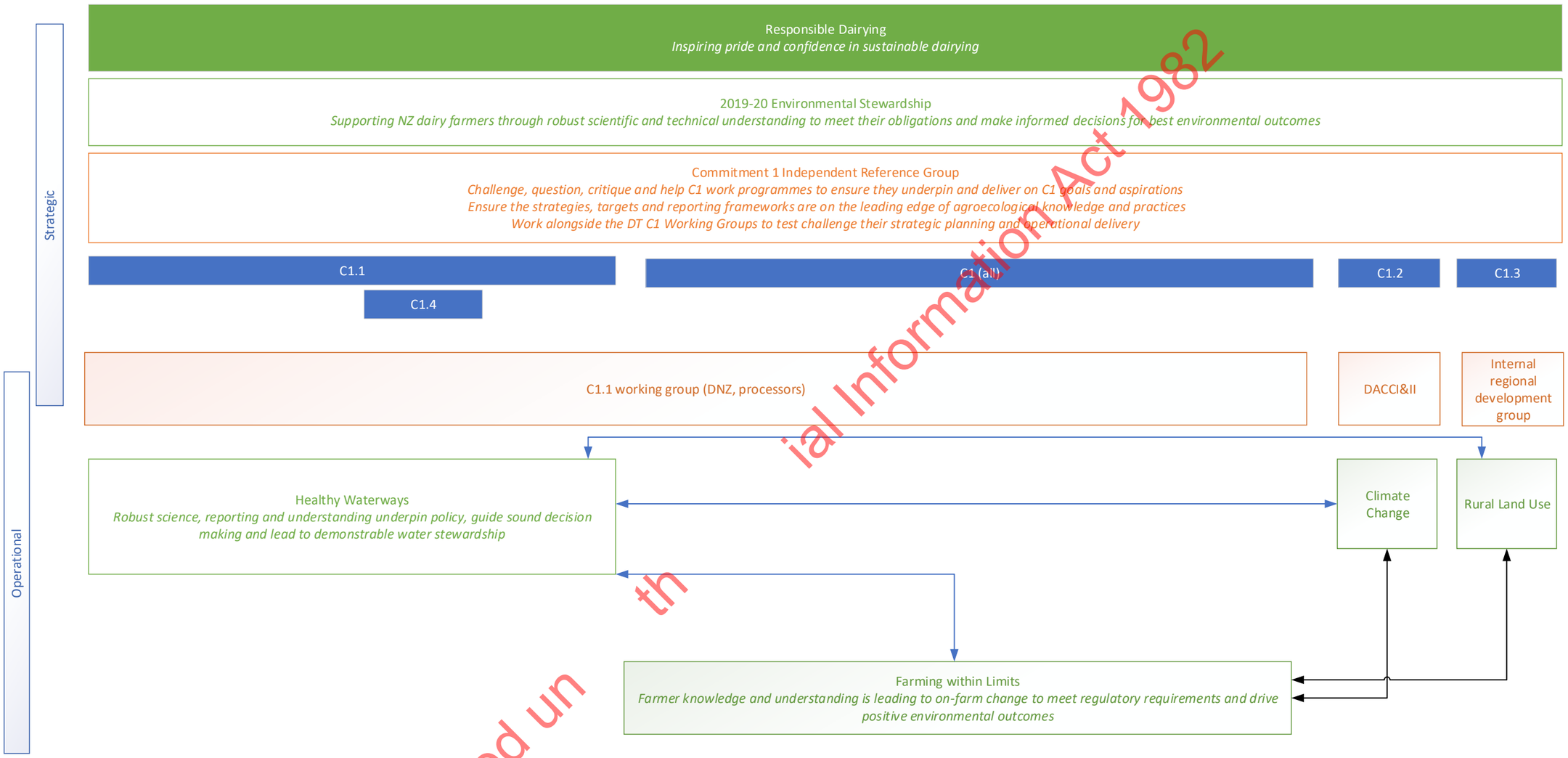
Appendix 4: Commitment 1 Conceptual Group Structure



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Andre Silveira

From: Tanya Cornwell <Tanya.Cornwell@dairynz.co.nz>
Sent: Tuesday, 27 August 2019 5:13 PM
To: Alister Body; s 9(2)(a) ; David Burger; s 9(2)(a) Martin Workman; MBIE (Max.Kennedy@mbie.govt.nz) s 9(2)(a)
Cc: s 9(2)(a)
s 9(2)(a)
Subject: DELG paper on SDWA transition and C1 Reference Group
Attachments: DELG Agenda August 2019.pdf

Tēnā koutou

I hope this email finds you all well.

Please accept our apologies in the delay in providing the transition paper to accompany the DELG agenda item 4. Please find the attached agenda for Thursday's meeting, which includes May's draft meeting minutes and the paper on the SDWA to C1 transition and Dairy Tomorrow Commitment 1 Independent Reference Group.

Travel safely.

Ngā mihi

Tanya Cornwell
Kaitohutohu kaupapa here matua - Senior Policy Advisor
Policy & Advocacy
Responsible Dairy Group

DairyNZ
Te Whanganui-a-tara
Level 10, Prime Property Tower (PPT), 86 – 90 Lambton Quay |PO Box 10002 | Wellington 6143 | NEW ZEALAND
Mob +**64 27 239 8468**
Web www.dairynz.co.nz | www.GoDairy.co.nz | www.getfresh.co.nz

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Wednesday, 13 February 2019 7:37 AM
To: JGeange@fedfarm.org.nz
Cc: Janice Rodenburg
Subject: Essential Freshwater Fed Farmers Martin Workman Feb 2019.pptx
Attachments: Essential Freshwater Fed Farmers Martin Workman Feb 2019.pptx

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Essential Freshwater

Federated Farmers Meat & Fibre Council

February 2019

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Ministry for the Environment
Manatū Mō Te Taiao

Making Aotearoa New Zealand the most liveable place in the world

Overview

Work streams

- Urban Growth Agenda (Mfe, Treasury, Transport, DIA, MBIE)
- Infrastructure funding and financing
- Pro-growth Planning
- Auckland Development Strategy and joint spatial planning
- Transport pricing
- System reform and coherence and long-term reform

- Three Waters Infrastructure/ Services (DIA, Health, MBIE)
- Regulatory settings and institutional arrangements
- Funding and financing mechanisms
- Capacity and capability of decision-makers and suppliers

Land-based sectors

Supporting Sustainable Value Growth (MPI, MBIE)	Addressing Climate Change; Mitigation & Adaptation (MfE, MPI, MBIE, Transport, TPK)	Restoring our Freshwater and Waterways (MfE, MPI, DoC, MBIE, TPK)	Afforestation – A Billion trees over 10 Years (MPI, TPK)

Ministerial oversight of sustainable land-based sectors

Ministers – Environment, Agriculture, Cliamte Change, Conservation, Forestry, Ass.Environment/Local Government

OUTCOMES:
- Halt further degradation and reverse damage to the environment
- Transistion to more sustainable, adaptable and innovative systems
- Increase New Zealand's environmental credentials

Minister of Agriculture	Minister for Climate Change	Minister for the Environment and Minister of Agriculture	Minister of Forestry
Primary Sector Council	Climate Change Commission	Freshwater Leaders Group, Kahui Wai Māori, Science and Technical Advisory Group	Ministerial Advisory Group on Forestry

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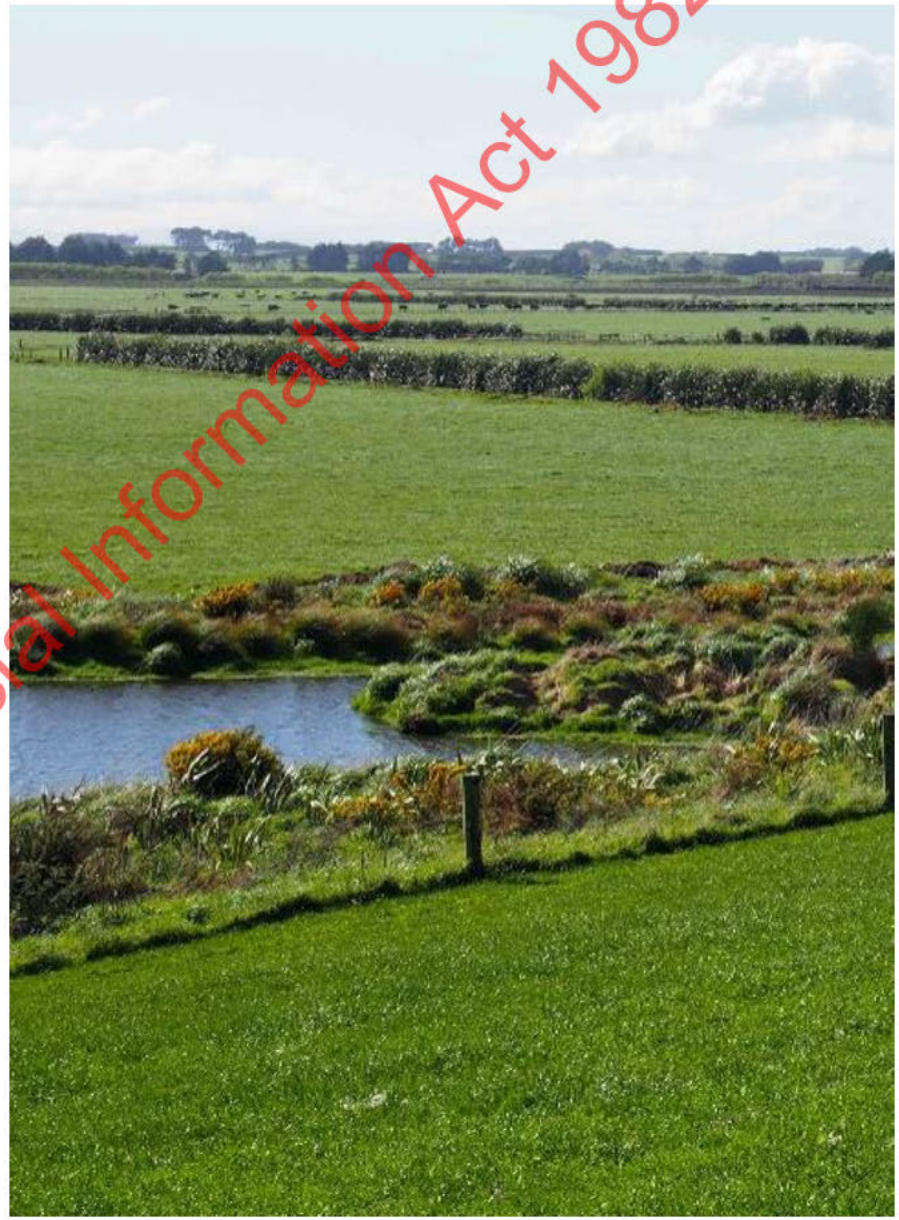
Essential Freshwater objectives

- Stopping further degradation and loss
- Reversing past damage
- Addressing water allocation issues



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Future framework for freshwater management

- Extend good practice across farms, forests, and urban water management
- Drive more fundamental change where good practice alone will not be enough
- Better target support from government to help landowners and others change
- Invest in developing and disseminating solutions
- Improved and nationally-consistent measurement and monitoring
- Support councils to undertake their roles

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On the agenda

National Environmental Standard

- preventing further loss of wetlands
- mechanisms for managing intensification
- Mechanisms for improving farm management practices
- rules to control high-risk land use activities

National Policy Statement

- how to better provide for ecosystem health
- potential new attributes – for example sediment, copper and zinc (urban areas)
- better protection for wetlands and estuaries

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Improving management practices and managing intensification of rural land use

- Promoting up-take of good management practices
- Managing high-risk land use activities
- Excluding stock from waterways
- Managing intensification of rural land use

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Good Management Practice (GMP)

- Good management practices are an evolving suite of practical measures
- LAWF said that GMP are the minimum – both for the environment and for social licence – but are not the whole answer
- GMP are context specific - need to be tailored to each farm through farm plans
- Ideally farm plans are flexible, adaptive and embed continuous improvement
- The primary sectors, processors and some regional councils are rolling out farm plan-based approaches to GMP

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High-Risk Land-Use Activities

- Essential Freshwater document mentions:
  - Intensive winter grazing
  - Hill country cropping
  - Feedlots
  - Forestry harvesting
- Economic benefits from these activities
- <u>But</u> also significant risks to water quality if not well-sited and managed.

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Stock exclusion

- Excluding stock from waterways reduces contamination (e-coli, sediment, phosphorus, nitrogen) and improves water quality
- Planting riparian zones improves both uptake of contaminants and biodiversity
- Stock exclusion can be costly (fencing, planting, stock water)
- Industry organisations and regional councils are taking a range of approaches to stock exclusion and riparian planting
- A regulatory approach was consulted on in 2017 but was criticised for not being practicable.

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Intensification

- Intensification of land use is about increasing inputs per hectare. We are focused on intensification that increases discharges, including intensification of an existing land use e.g. increases in stock units carried.
- Intensification can transform communities, improving incomes, employment and availability of services.
- Many councils already constrain intensification through land-use change rules and/or allocation of nitrogen discharge allowances
- Intensification is forecast to continue in some regions.

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Owl Farm

Providing knowledge

St Peter's · Cambridge
New Zealand

Lincoln University
Te Whare Wānaka o Aoraki
AOTEAROA · NEW ZEALAND
New Zealand's specialist land-based university

St Peter's School/Lincoln University
Demonstration Dairy Farm

Farm Systems Change and KPI outcomes for Owl Farm, St Peters School Cambridge

Summary

With an objective to apply proven research to improve farm performance over time, Owl Farm has extensively modelled potential farm systems that delivered performance benefits across a raft of KPIs.

A significant shift so far in both environmental outcomes, profit, people metrics and animal performance is a start but the long term viability of the current system is still in question.

A decision making matrix was developed (see attached Wagon Wheel) that assesses the performance of the farm simultaneously over the driving KPIs for the farm. Farm systems need to create a round wheel for a smooth journey.

Future options for the farm offer two disparate farm systems that involves choosing between two Pathways to deliver further progress. The outcomes of the two systems show differing outcomes depending on the KPI assessed:

Option A – De-intensify

- Small improvement on current profit levels
- Further N loss reduction (30% from 2015, 12.5% from current)
- System simplification, with limited tools and clearer decision making rules.
- Greater complexity and risk in the process of extracting maximum value. Much higher variability in performance.
- May have wide public appeal with less dairying intensity
- Remove 38% of Farm's current cash spend from local New Zealand businesses
- Reduce Gross greenhouse gas emissions by 19%
- Improve greenhouse gas efficiency/litre of milk by 8.6%

Option B – Infrastructure

- Satisfactory lift in farm Operating Profit
- Further N Loss reduction (32% from 2015, 16% from current)
- System much more agile, resilient and repeatable
- More tools available to respond to changes and extract gains.
- Offers soil and pasture protection, plus shade and shelter for cows.
- Remove 8.6% of Farm's current cash spend from local New Zealand businesses
- Reduce Gross greenhouse gas emissions by 1.5%
- Improve greenhouse gas efficiency/litre of milk by 13.1%

The decision around the preferred future system of the farm is currently constrained by grappling to understand the longer term feasibility of both farm systems in line with pending; climate change legislation and surrender obligations, implications.

It is imperative to Owl Farm that any future farm systems change is made by considering the full suite of outcome and not assessing or deciding based on one metric in isolation.

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Background and discussion

Over the first 3 years of the operations as a Demonstration Farm, there has already been a system change to remove some purchased feed and reduce stocking rate in line with this as the purchased feed (Maize Silage) fed in paddock on the ground was far too inefficient to continue.

The outcome of this s interim ystem change so far is:

- 55% lift in operating Profit/ha,
- 50% reduction in brought in feed,
- 11% more homegrown feed eaten,
- 24% reduction in N Loss to waterway and
- 31% reduction in P Loss to waterway
- 2.9% reduction in total GHG emissions

From the outset, the Demonstration Farm has been assessing long term system considerations alongside the shorter term objectives to get from "Average" towards the Top 20% of farms in the region.

Option A – De-intensify

- De-intensify from current system
- No Purchased Feed imported
- Retain the current cropping policy on farm
- Reduce stocking rate as required (From current 2.8 to 2.6 cows/ha)
- Achieve 1,000kgMS/ha from homegrown feed (978kgMS at the moment from homegrown feed)
- Remove one labour unit from the Farm
- Reduce Cash Farm working Expenditure by 38% ($347,000)
- Requires approximately $65,000 in CapEx (leachate captured silage bunkers)
- Removes $180,000 investment in Fonterra share capital

Option B – Invest in infrastructure

- Invest in infrastructure to capture nutrients and increase utilisation of stored feeds
- Maintain current levels of imported feed
- Grow Maize on farm
- Achieve 1,100kgMS/ha from homegrown feed (Maize increases homegrown supply)
- Maintain current cow numbers and labour (From current 2.8 to 2.85-2.9 cows/ha)
- Maintain current operational spend or decrease slightly
- Requires approximately $625,000 in CapEx: feedpad, standoff, bunkers and machinery
- Requires purchase of Additional Fonterra shares $117,000

Analysis Framework

We assess the business using our Wagon Wheel for Past and Future options as it allows us to consider the performance across the multiple values-based KPIs that create a successful farm for us. True Sustainability for Owl Farm looks at a combined view of; Profit, Animals, People Performance and Environmental outputs.

Each KPI has an agreed target, based on best practice, government policy or comparative industry performance. Each measure is assessed against its target with a 0-100% score change, where 100% means fully achieving the target.

Plotting these scores on a radar graph – or for us a Wagon Wheel helps us keep a holistic overview of true progress, with the analogy that poor performance in an area makes a flat tyre which is not a smooth journey.

9 other farm systems were considered but discounted due to significantly poor performance in one area of the wheel, including intensification calving season, different infrastructure and moving nutrient out of catchment.

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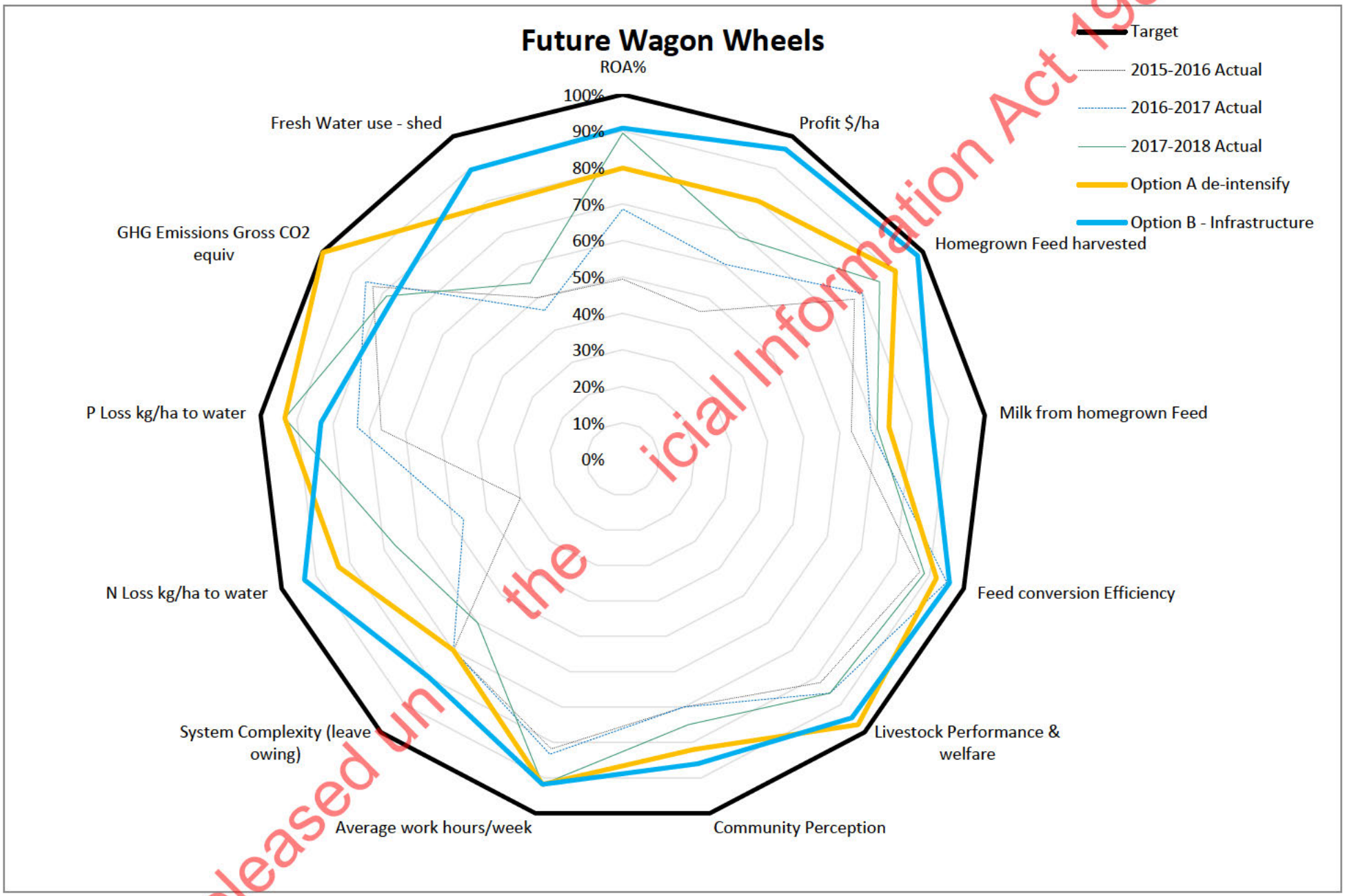

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Summary of key data past and future:

The table below highlights the summary data from the farm system, with particular focus on the environmental change points – with key analysis of the GHG data.

It is a key point to note that modelling often shows farm profitability decreased and smaller domestic economy impacts. IN our scenario we can somewhat insulate our farm profit, but only by drastically reducing our local expenditure. A labour unit removed, $110,000 on purchased feed not spent with NZ companies that provide it, less breeding and costs to the local vet with fewer cows etc.

CO2 equivalents (kg/ha/yr)	2014-15	2015-16	2016-17	2017-18	2018-19F	A	B
Ha farmed	148	148	146	148	147	148	148
Gross CO_2 equiv/ha	13,600	12,700	12,617	13,200	13,300	10,900	13,400
Gross 000's CO_2 equiv produced	2,013	1,880	1,842	1,954	1,955	1,613	1,983
% change in gross CO_2 equiv	0.0%	-6.6%	-8.5%	-2.9%	-2.9%	-19.9%	-1.5%
Production kgMS	181,832	166,097	178,294	168,169	180,000	155,526	206,202
Production Litres	1,914,516	1,444,373	1,924,209	1,805,130	1,943,844	1,679,546	2,170,547
GHG intensity kgCO_2/kgMS	11.1	11.3	10.3	11.6	10.9	10.4	9.6
GHG intensity kgCO_2 equiv/litre	1.05	1.30	0.96	1.08	1.01	0.96	0.91
% Change in GHG intensity	0.00%	23.78%	-8.94%	2.94%	-4.33%	-8.64%	-13.09%
STD profit/ha $6 milk price	1,908	1,426	1,883	2,144	2,208	2,595	3,022
Gross cash expenditure	871,818	819,911	788,170	705,557	767,795	542,662	796,942
% change in cash expenditure	0.0%	-6.0%	-9.6%	-19.1%	-11.9%	-37.8%	-8.6%
Labour units employed	3.0	3.0	3.0	3.1	3.1	2.5	3.5
Share capital inc/red Fonterra	-28,605	-123,021	-49,836	-110,586	-39,600	-186,444	117,612
N Loss kg/ha in Overseer FM	38	40	37	32	32	28	27
P Loss kg/ha in Overseer FM	0.9	1.1	1.0	0.8	0.8	1.0	1.1
Tonnes of brought in feed	690	671	523	335	340	0	443
% feed bought in	22.0%	23.1%	19.1%	13.4%	12.8%	0.0%	15.0%

It must also be noted that in the 14-15 and 15-16 dairy season the farm was larger than indicated below. There was more milk and more CO_2 equivalent produced than is shown in this table.

However, we did not choose to reduce our farm area – rather the landowner began their retirement village development and we lost the lease land.

To ensure we accurately represent the relative change in farm outputs, I have "downsized" the production and total GHG pro-rata in line with the reduction from 164 and 157ha to 148 ha each for 14-15 then 15-16 seasons.

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The following graph summarises the Key outcomes of the system options:

	14-15	15-16	16-17	17-18	18-19F	A	B
	Actuals					Future	
Gross change '000s kgCO2 equiv total % change in gross CO2 equiv produced	0.0%	-6.6%	-8.5%	-2.9%	-2.9%		
Future Gross change '000s kgCO2 equiv total Future % change in gross CO2 equiv produced						-19.9%	-1.5%
% change in cash expenditure	0.0%	-6.0%	-9.6%	-19.1%	-11.9%		
Future % change in cash expenditure						-37.8%	-8.6%
N Loss/ha In Overseer FM	38	40	37	32	32		
Future N Loss/ha In Overseer FM						28	27

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Andre Silveira

From: Charlotte Rutherford <Charlotte.Rutherford@fonterra.com>
Sent: Monday, 6 May 2019 10:02 AM
To: Martin Workman
Subject: FW: Fonterra (74057) - Evidence of James Allen (Farm Management).pdf
Attachments: Fonterra (74057) - Evidence of James Allen (Farm Management).pdf

Hi Martin

Please find attached public information we have used in our evidence for PC1. How about you and the team have a look at this and see how it could help and how much further you would need to go in other regions.
Then it may be best for people from your team (Irene?) to talk to my team. We could probably postpone tomorrow call until you have digested this.
Thank you
Charlotte

Kind regards
Charlotte Rutherford
Director On-Farm Excellence

Fonterra Farm Source
Mob: +64 21 471 045
19 Home Straight, Te Rapa, Hamilton, 3200
nzfarmsource.co.nz | fonterra.com

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BEFORE INDEPENDENT HEARING COMMISSSIONERS

AT HAMILTON

IN THE MATTER:	of the Resource Management Act 1991
AND	
IN THE MATTER:	of the hearing of submissions on Proposed Plan Change 1 and Variation 1 to the Waikato Regional Plan (Healthy Rivers)

STATEMENT OF EVIDENCE OF JAMES KENNETH ALLEN FOR FONTERRA CO-OPERATIVE GROUP LTD (SUBMITTER 74057)

BLOCK 2 HEARINGS

FARM MANAGEMENT

3 MAY 2019

RICHMOND CHAMBERS

Counsel Instructed
B J Matheson
Richmond Chambers
PO Box 1008
Shortland Street
Auckland 1140

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1. EXECUTIVE SUMMARY

1.1 I am supportive of the long-term goals of the Te Ture Whaimana o Te Awa o Waikato - Vision and Strategy (**Vision and Strategy**) that seek to ensure that the Waikato / Waipa Rivers are safe for both swimming and the harvesting of food.

1.2 I am supportive of the proposed timeframes for the implementation of proposed Plan Change 1 to the Waikato Regional Plan (**PC1**).

1.3 In my evidence I cover aspects related to Fonterra Co-operative Group Limited's (**Fonterra**) submissions and further submissions on both the on-farm provisions, and point-source discharges as they relate to the disposal of industrial wastewater onto farmland.

1.4 I am supportive of the proposed methods to manage nitrogen, i.e:

(a) establishment of a Nitrogen Reference Point (**NRP**);

(b) a requirement for landowners to farm 'at or below' their current NRP level;

(c) a requirement for those pastoral landowners who are leaching above the dairy 75th percentile to reduce their N leaching to the 75th percentile or below; and

(d) development of mitigation measures to manage nitrogen, phosphorus, sediment and microbial pathogens through the use of a Farm Environment Plan (**FEP**).

1.5 For those landowners who are currently leaching above the 75th percentile, and are required to reduce their N leaching, many of these farmers should be able to make relatively minor changes to their farm system which will enable them to farm at or below the 75^{h} percentile. For example, this could involve changes to timing of nitrogen applications, changes to effluent management, changes in stocking rate, manipulation of the diet, and possibly some infrastructure changes. There will be other farmers who require some significant farm system change and/or investment in infrastructure in order to meet the

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75th percentile target. Finally, there will be a small proportion of farmers who simply cannot meet the 75th percentile target without significant change to farming system, and potentially land use change. Generally speaking, the costs and effort of making reductions to meet the 75th percentile will depend on the level of nitrogen leaching reduction required.

1.6 For some landowners there are some farm management efficiencies available that will result in a small lift in profitability by reducing their N leaching below the 75th percentile. For most landowners there will be some loss of profitability when they reduce their N leaching to below the 75th percentile. An AgResearch report evaluating the financial impact of dairy farms moving from above the 75th percentile to 'at or below' the 75th percentile stated: "*The corresponding range in effects of profitability was +$106/ha to -$514/ha, with an average of -$143/ha",* noting that this was a case study approach on dairy farms, and may not be fully representative.

1.7 Three of Fonterra's manufacturing sites in the Waikato River Catchment are authorised via a number of resource consents to discharge industrial process wastewater to land via irrigation. In managing this activity, Overseer is used to model nitrogen losses below the root zone.

1.8 I have a good understanding of the wastewater irrigation operations undertaken on these farms, and I have reviewed the most recent technical reports that were developed for consenting and/or compliance purposes.

1.9 The range of nitrogen leaching (kg N/ha/yr) on the farms that received the wastewater is comparable to other dairy farms in the Waikato catchment that do not receive the wastewater.

2. QUALIFICATIONS, EXPERIENCE AND BACKGROUND

2.1 My full name is James Kenneth Allen. I am managing director of AgFirst Waikato (2016) Limited (**AgFirst Waikato**).

2.2 I have been working as an agricultural consultant since 1996, based in the Waikato region for all of that time. From 1996 to 2001 I was

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employed by the agricultural consultancy firm Agriculture New Zealand Limited. Since 2002 I have been self-employed with AgFirst Waikato. Together with my business partners we have grown the scale of the business to be the largest agricultural consultancy business in the Waikato region, covering a range of disciplines.

2.3 The core base of my experience relates to farm management consultancy.

2.4 I hold a Bachelor of Agricultural Commerce (farm management and rural valuation majors) from Lincoln University, New Zealand, and a Professional Masters in Agribusiness, also from Lincoln University. I am a Fellow and registered member of the New Zealand Institute of Primary Industry Management, where I was national president for two years. I am also a director on the Nutrient Management Adviser Certification Programme Limited.

2.5 Relevant qualifications include accreditation in Farmax, intermediate and advanced Sustainab e Nutrient Management, and NZIPIM Dairy Farm Systems Certi ied Consultant.

2.6 My experience in the area of farm systems management relevant to the statement of evidence includes:

(a) Delivery, project management and participation in the steering committee of the Sustainable Milk Plans programme delivered in the Upper Waikato Catchment.

(b) Experienced user of both Farmax Dairy and Overseer, which are both recognised industry tools to analyse farm systems.

(c) Delivery of estimated Nitrogen Reference Points, Farm Environment Plans and farm system change analysis.

(d) Day to day consultancy work in the Waikato and Waipa districts. This provides a first-hand understanding of the wide range of issues surrounding management of dairy farms in these catchments. This includes financial management, environmental planning, strategic planning and nutrient management.

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(e) Project management of the Dairy Push extension programme, Upper Waikato (2007 - 2011).

2.7 Relevant publications include:

(a) Co-author Upper Waikato Nutrient Efficiency Study (2009).

(b) Presentation to NZARM (NZ Association of Resource Management) conference (2015) – "The role of a farm consultant in facilitating change of farms".

(c) Provider of the MAF Farm Monitoring Report Waikato Dairy (1997 - 2005). Subsequently AgFirst Waikato now publishes its own annual dairy and sheep and beef financial report for the Waikato region each year.

3. CODE OF CONDUCT

3.1 I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2014 and I agree to comply with it. I confirm that the issues addressed in this Statement of Evidence are within my area of expertise, except where I state I am relying on the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from my expressed opinion.

3.2 In terms of the matters in the Expert Witness Code of Conduct, I record that I am a shareholder in a dairy farm which is located in the Waipā catchment. Also for disclosure it is noted that AgFirst Waikato submitted with regard to PC1, with regard to the use of nitrogen trading as an economic tool.

4. SCOPE OF EVIDENCE

4.1 My evidence is focussed on the management of nitrogen within the PC1 framework and how the plan framework as proposed will impact on farmers.

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5. SUPPORT FOR THE VISION AND STRATEGY

5.1 I have read the Vision and Strategy as outlined in Chapter 3.11. I am supportive of the overall intent of PC1, being the first stage of achieving the Vision and Strategy set out in the Waikato River legislation, with an 80 year intergenerational timeframe to achieve the water quality targets. This intergenerational timeframe recognises that the implementation of regulation to achieve those targets will be costly, difficult, and will involve considerable land use change.

5.2 The first phase of the 80 year plan is a 10 year plan to implement a range of actions that will be required to achieve 10% of the required change between current water quality and the required water quality in 2096.

6. MANAGEMENT OF NITROGEN WITHIN THE PLAN CHANGE ONE FRAMEWORK

6.1 My interpretation of the proposed rules of PC1 indicate that management of nitrogen within the PC1 framework will be undertaken with the following mechanisms:

(a) interim restrictions (non-complying activity) on land use change for intensification;

(b) establishment of a NRP;

(c) ensuring farmers under the 75th percentile do not exceed their NRP on a five-year rolling output average basis;

(d) for those landowners who are operating above the 75th percentile of the NRP, they will be required to reduce their N leaching to that of the 75th percentile by 1 July 2026; and

(e) through the preparation and implementation of a FEP prepared by a qualified professional, manage nitrogen, sediment, phosphorous and microbial pathogens.

6.2 As I understand it, the purpose of creating a NRP for landowners is to establish a reference point from which to track changes to the

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(modelled) amount of nitrogen leaching below the root zone at a property level.

6.3 I am supportive of the creation of a baseline represented by the NRP. In my opinion establishing a reference point for most farms and then requiring a reporting regime that ensures the reference point is not exceeded, alongside the reductions required under the 75 h percentile approach and the efficiency actions included in all FEPs, is an effective way to ensure total N loss across the catchment decreases.

7. 75TH PERCENTILE

7.1 Without the 75th percentile rule there is no immediate need for those who have a relatively high level of nitrogen leaching to make any reductions in their nitrogen leaching beyond the efficiency actions that might be identified in the FEP.

7.2 The 75th percentile rule is calculated based on nitrogen leaching numbers in each FMU. In principle I would prefer the rules for PC1 to be based on a sub catchment basis rather than an FMU basis, however I understand that there was a lack of meaningful data available to manage PC1 on a sub catchment basis. If PC1 was modified to operate on a sub catchment basis rather than an FMU basis, my comments regarding the NRP baseline and 75th percentile would still apply.

7.3 Key drivers of nitrogen leaching are soil type, rainfall, pasture growth, imported feed, nitrogen fertiliser use, (and as a consequence) stocking rate and production. I understand there is concern by some parties for those landowners with free draining or “leaky soils”, e.g. pumice, in an FMU which contains a variety of soil types, in that this could put them at a perceived disadvantage. The FMU where this is most likely to have the highest impact is the Upper Waikato, which contains a mixture of pumice, allophanic and other soil orders. The following chart shows that in the Upper Waikato FMU over 60% of soils are pumice soils. The implication here is that the soil type with the highest leaching potential is the predominant soil type in that FMU, and thus this largely negates this concern. However, I do accept that there will be instances of farmers with “leaky soils” in an FMU which puts them at a comparative

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disadvantage. This may well cause some concern and difficulties for the particular landowner; once again the intent of any plan should be to create the least inequitable situation, but there will always be those who are caught out. Additionally, it should be remembered, all other things being equal, those farming on “leaky soils” and/or particularly those in high rainfall situations will be leaching more nitrogen into the waterways. The Fonterra Supply Farms Soil Profile by FMU is shown at **Figure 1** below.

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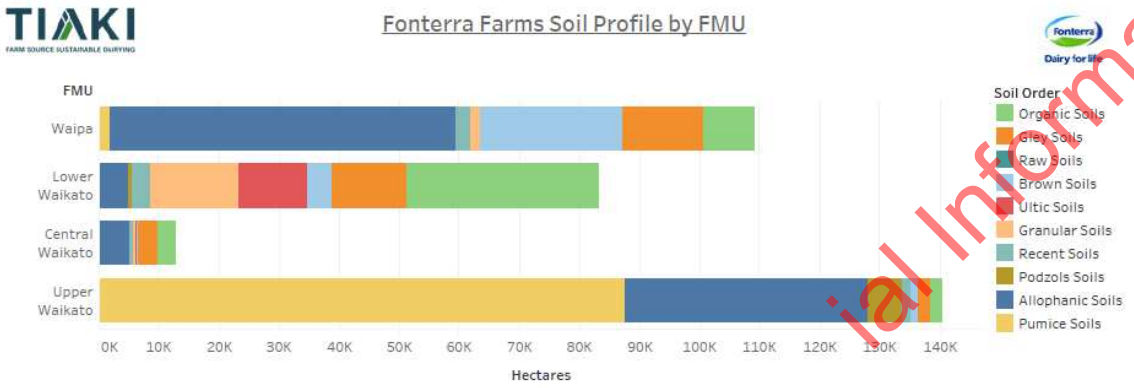

FMU

Soil Order	Central Waikato	Lower Waikato	Upper Waikato	Waipa
Organic Soils	2,836	31,590	1,775	8,492
Gley Soils	3,224	12,414	2,138	13,298
Raw Soils		217	5	
Brown Soils	242	3,988	1,182	23,625
Ultic Soils	195	11,494		10
Granular Soils	496	14,771		1,664
Recent Soils	590	3,001	1,412	2,638
Podzols Soils		600	5,709	
Allophanic Soils	4,954	4,843	40,564	57,434
Pumice Soils	166	88	87,488	1,880
Grand Total	12,703	83,006	140,272	109,041

Soil Drainage

Soil Order	Very poorly drained	Poorly drained	Imperfectly drained	Moderately well drained	No Data	Well drained
Organic Soils	19,701	24,992				
Gley Soils	1,031	29,659	383			
Raw Soils					221	
Brown Soils		170	21,597	3,126		4,143
Ultic Soils		636	5,240	4,604		1,220
Granular Soils		410	482	12,816		3,223
Recent Soils			1,674	1,756		4,212
Podzols Soils		600		17		5,692
Allophanic Soils			823	160		106,811
Pumice Soils			2,564	2,391		84,668
Grand Total	20,733	56,467	32,763	24,869	221	209,969

Figure 1: Soil Order by FMU - based on Fonterra supply farms, 15/16

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7.4 I would also like to comment on the ability of farmers to reduce their nitrogen leaching to at or below the 75th percentile. Some indicative information provided by Fonterra (see **Figures 2 – 5** below) indicates that many dairy farms who are above the 75th percentile are actually farming close to the 75th percentile rather than being at the extreme end (i.e. upper end of the percentile range). In my experience many farmers should be able to make relatively minor changes to their farm system which will enable them to farm at or below the 75th percentile. For example, this could involve changes to timing of nitrogen applications, changes to effluent management, changes in stocking rate, manipulation of the diet, change in cultivation and cropping programmes, and possibly some infrastructure changes. There will be other farmers who require some significant farm system change and/or investment in infrastructure in order to meet the 75th percentile target. Finally, there will be a small proportion of farmers who simply cannot meet the 75th percentile target without significant change to farming systems, and land use change might be required.

7.5 An indication of the 75th percentile figures for the FMUs, and the number of dairy farms above this level are shown in the following figures (**Figures 2 – 5**), based on Fonterra data.

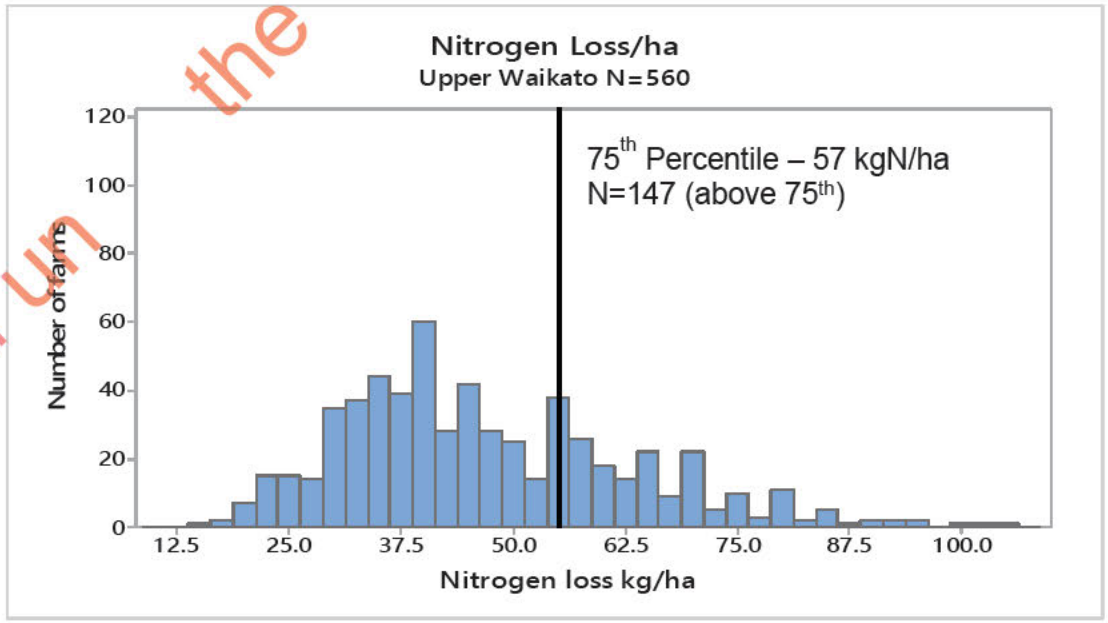

Figure 2: Source: Fonterra Data set 15/16 Season (Fonterra supply farms only)

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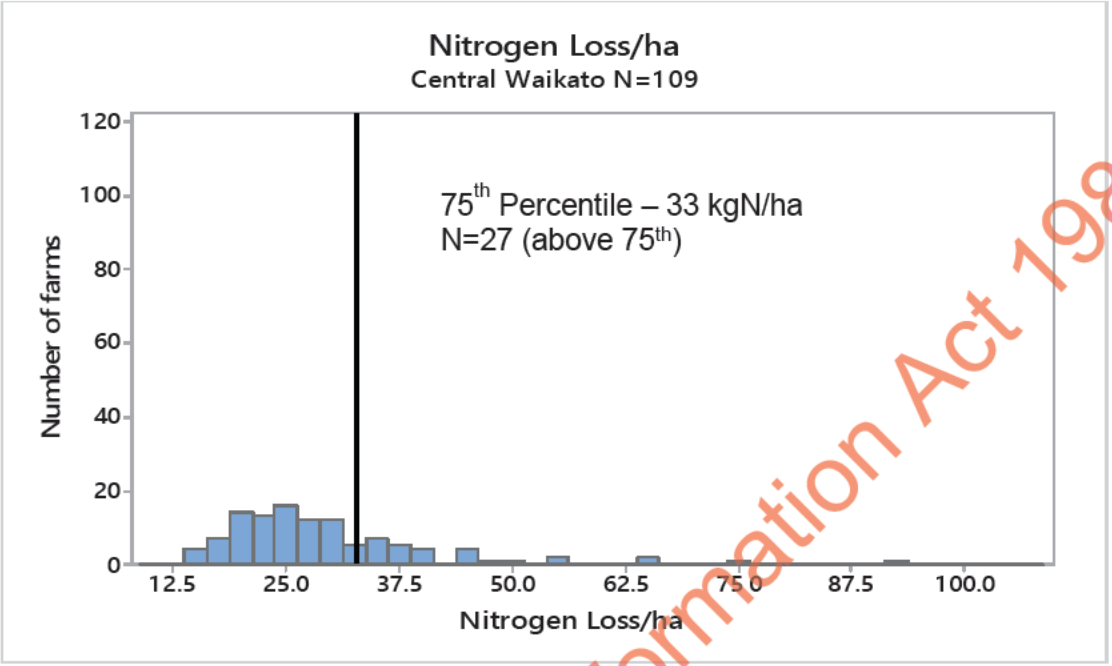

Figure 3: Fonterra Data set 15/16 Season (Fonterra supply farms only)

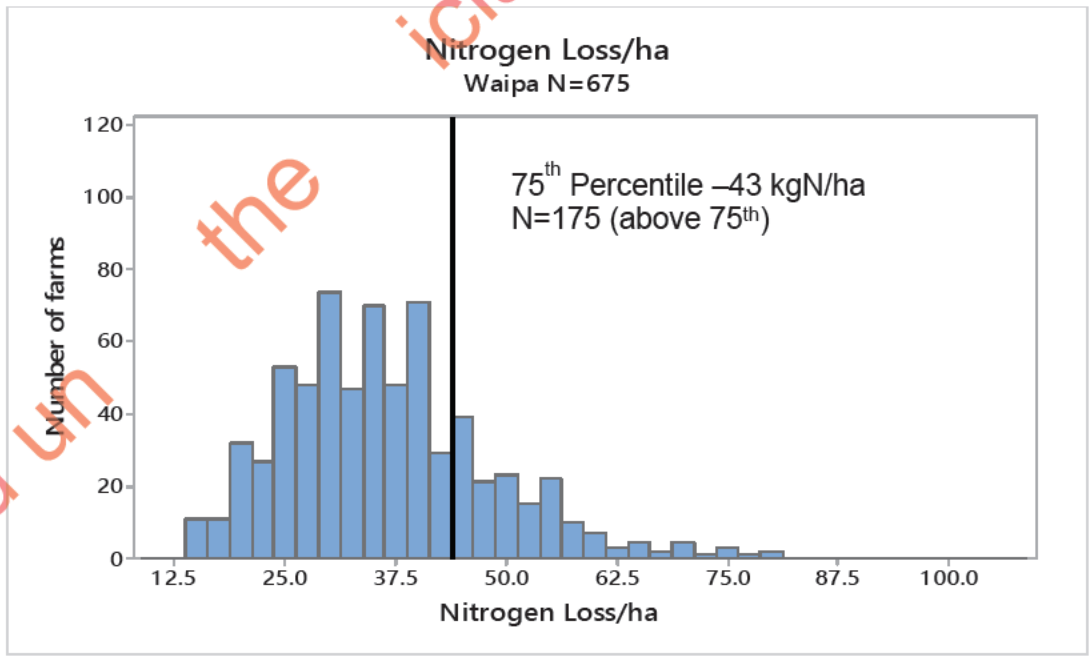

Figure 4: Fonterra Data set 15/16 Season (Fonterra supply farms only)

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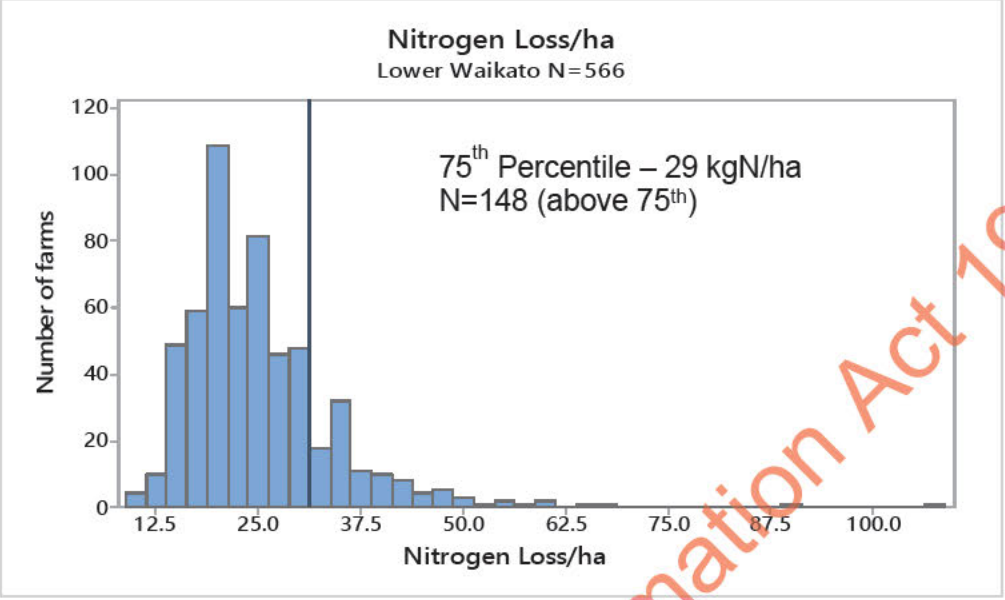

Figure 5: Fonterra data set 15/16 Season (Fonterra supply farms only)

7.6 The box and whisker chart shown below (**Figure 7**) illustrates the range in N loss (kg/ha), grouped by FMU. The upper and lower limits of the box demonstrate the 25 h and 75th percentile, with the mid line being the median. The whisker lines represent the upper and lower quartiles with the asterisks being outliers.

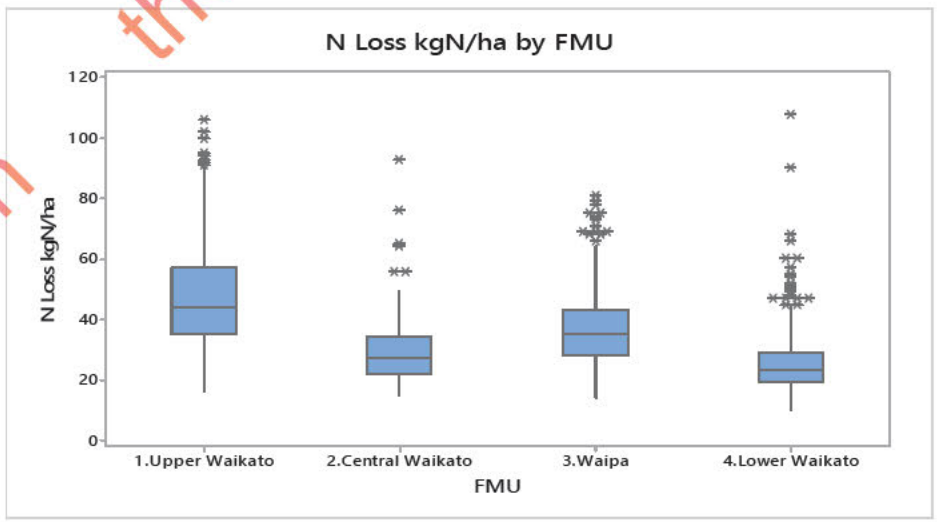

Figure 7: Fonterra data set (15/16 season (Fonterra supply farms only)

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7.7 I believe the 75th percentile rule will greatly assist the likelihood of achieving the N reductions required by PC1. The following table is based on internal analysis undertaken by Fonterra, based on Fonterra supply farms in the Waikato and Waipa catchments in the 2015/16 season. I am relying on the expertise of Fonterra to ensure their calculations and assumptions are correct. The analysis examines the impact of total N leaching by requiring those leaching above the 75th percentile to reduce their N leaching to the 75th percentile. As the table illustrates, the impact of this requirement is a reduction in N leaching of 814 tonnes, representing a 7.3% reduction. Note that this analysis is based only on the Fonterra supply farms in the catchment. This is shown in **Figure 8** below.

Original N Level (tonnes)	75th Percentile reduction (new level)	Percentage reduction
11,104	10,290	7.3

Figure 8: Catchment load N reductions modelled using the 75th percentile modelling. Source: Fonterra supply farms 15/16 season

7.8 To give support to my comment regarding the impact of the 75th percentile rule, I refer to an AgResearch[1] Report (Ledgard, 2017) prepared in 2017. This report evaluated the impact of undertaking mitigation measures in order to shift dairy farms from above the 75th percentile to at/below the 75th percentile.

7.9 To paraphrase, "*Across the ten farms where mitigations were evaluated, their integration into the farm system was associated with a calculated change in milk solids production of +2 to -219kgMS/ha/yr (+0.1% to -17%). The corresponding range in effects of profitability was +$106/ha to $514/ha, with an average of -*

[1] AgResearch (S Ledgard, N Mapp, N Bartlett) 2017. Understanding Nutrient losses on Waikato case study farms and effectiveness of selected mitigation options. Report for Fonterra and DairyNZ.

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$143/ha.

For all ten farms evaluated, a decrease in N leaching down to the 75th percentile could be achieved by integration of 1-5 mitigations that were farm management changes that were easily understood, i.e. no major farm system changes were required."

7.10 In addition to the evidence present by the AgResearch report, an AgFirst report[2] conveyed a similar message. When examining a range of farming systems, it was found that many farmers could implement a range of mitigations that would achieve a reduction in N leaching. The impact on production and profitability ranged from positive to negative, dependant on a range of factors that included current performance levels, farm system and level of infrastructure. A report by Perrin Ag that examined the impact of Nitrogen restrictions for the drystock sector drew similar conclusions.[3]

7.11 Various nitrogen mitigations strategies have been documented in a Fertiliser and Lime Research Centre (**FLRC**) report.[4] This report summarised amongst the effectiveness of various mitigation strategies, that there is no one size fits all. While a mitigation strategy may result in a profit for one farming operation, it may have a significant impact on another system.

7.12 The studies show that a reduction of 0- 20% leaching could have a range of impacts on profitability. Whilst some minor changes resulted in a neutral or even slightly positive change in farm profitability, other changes in farm practice resulted in decreased profitability. This highlights the point that analysis and changes need to be made on a farm specific basis.

2 AgFirst (Allen, Dewes, Waugh et al) 2009. Upper Waikato Nutrient Efficiency study

3 Perrin Ag, 2013. Upper Waikato Drystock Nutrient Efficiency Study

4 Howarth, S., Journeaux, P., 2016. Review of Nitrogen Mitigation Strategies for Dairy Farms - is the method of analysis and results consistent across studies? In: *Integrated nutrient and water management for sustainable farming*. (Eds L.D. Currie and R.Singh). http://flrc.massey.ac.nz/publications.html. Occasional Report No. 29. Fertilizer and Lime Research Centre, Massey University, Palmerston North, New Zealand.

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7.13 To achieve more than a 20% reduction in leaching most studies suggest there will be an increasingly negative impact on profit. This is shown in **Figure 9** below.

Mitigation Strategy	Effect of Nitrogen	Effect on Profit
Supplementary feeding – Low N Feeds	3–42% reduction	1–10% loss
Nitrogen fertiliser – eliminating winter applications	12–15% reduction	minor
Nitrogen fertiliser – reducing or removing all applications	26–43% reduction	1–10% loss
On/off grazing	25–56% Southland 9-23% Waika o/BOP	11% decrease to 14% profit depending on infrastructure

Figure 9 – Relationship between Nitrogen reduction and profit

7.14 There are a large number of mitigation strategies available to higher loss farms that can be tailored to provide the most efficient suite of actions for a particular farm to reduce nitrogen leaching and to assist them with complying with the relevant 75th percentile number.

7.15 AgFirst has undertaken various modelling scenarios to determine the key drivers and costs from high N leaching farms, as clients evaluate their farm systems in anticipation of making changes. An example of such modelling work is a dairy farm in the Upper Waikato FMU with pumice soils, a stocking rate of 2.7 cows/ha and production of 468 kgMS/cow. The key inputs were 235 kg of N fertiliser/ha, 1.5t DM/cow of imported feed (approximately 50:50 PKE to maize silage and maize grain) and 8.5% of the farm in winter crops. Presented below is a table summarising the current operation with infrastructure improvements and the modelling results from various mitigation strategies with the cost associated as a per unit of N leached. This is shown in **Figure 10** below.

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	Infrastructure (current baseline)	Reduce Winter Crop	Reduce Nitrogen Fertiliser	Dry off Early	Retire Land	Reduce Stocking Rate
Operating Profit ($ total)	$565,000	$582,000	$537,000	$511,000	$555,000 +capital	$555,000
Change in Operating Profit ($ total)		+$17,000	-$28,000	-$54,000	-$10,000	-$10,000
N Leached (kg N/ha)	64	59	48	63	61	64
Reduction in N leaching (kg N/ha)		-5	-16	-1	-3	0
Cost per kg N leached ($/kg N)		+$3,400	-$1,750	-$54,000	-$3,333	-

Figure 10 – Upper Waikato FMU example

7.16 The above Figure 10 illustrates the financial impact of reducing the nitrogen leaching on a particular farm. Some of the management changes had a small change in operating profit (positive and negative), whilst others had a significant change in operating profit. Each farm needs to be analysed individually, as the combination of soil types, management systems and infrastructure will lead to a wide range in outcomes. For this particular farm a reduction in the use of nitrogen fertiliser resulted in a reduction in nitrogen leaching of 16kgN/ha/year.

7.17 Based on my experience around the economic implications of reducing nitrogen leaching, the costs are typically reflective of the level of change required. This is supported by some analysis that Mr Phil Journeaux at AgFirst has completed. Presented below is a figure Mr Journeaux presented at the NZIPIM 2016 conference, showing various farm systems, case studies and analysis and the associated costs based on the percentage reduction in nitrogen leaching.

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7.18 Whilst there is naturally variation in the results from the various case studies, the chart illustrates the financial cost of making a 0-20% reduction in nitrogen leaching has a moderate impact (both positive and negative) on farm profitability, a requirement for large reductions in N leaching will likely have a substantial negative impact on farm profitability.

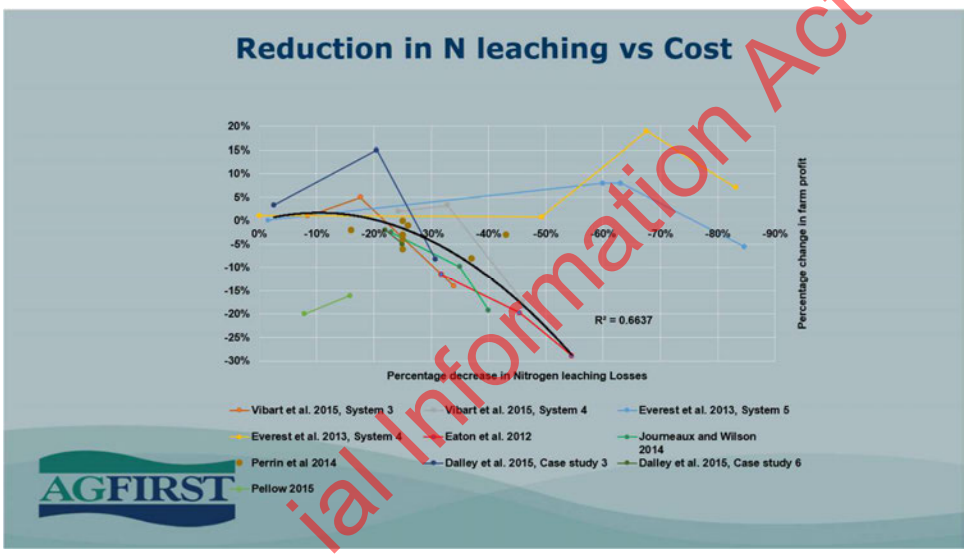

Figure 11 – Reduction in N leaching vs cost

7.19 Another report, "The Southland Economic Project – Agriculture and Forestry" April 2017, also provides useful information on the financial impact of reducing Nitrogen leaching on dairy farms. Although the report is based on Southland regional data, in my opinion the data is relevant for the Waikato region. Forty-one dairy farms were included in the analysis. The following chart illustrates the point that for the majority of dairy farms, obtaining a small (0-10%) reduction in N leaching had a small (0 to -15%) impact on farm profitability. Obtaining a large (>25%) reduction in N leaching had a much larger financial cost. This is shown in **Figure 12 below**.

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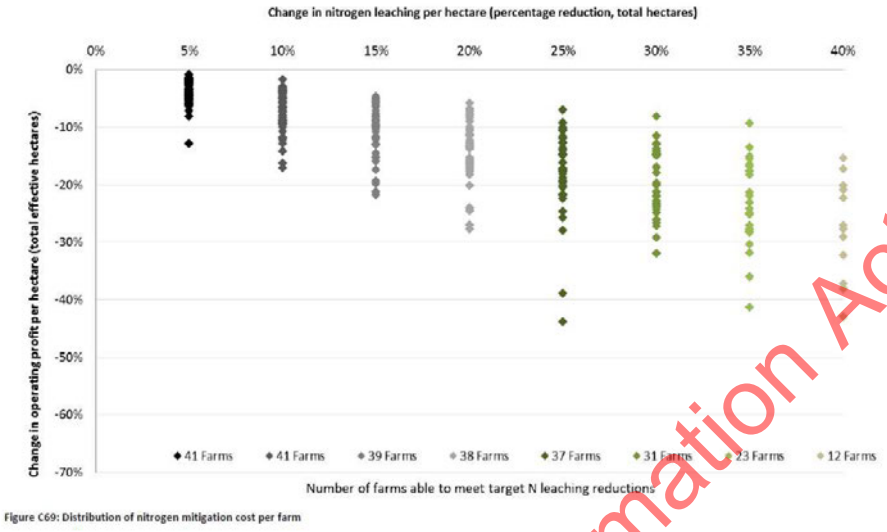

Figure 12: The Southland Economic Project, Agriculture and Forestry, E.Moran, 2017, p250

8. FONTERRA'S INDUSTRIAL PROCESS WASTEWATER DISCHARGES TO FARMLAND

8.1 Wastewater from three Fonterra manufacturing sites in the Waikato catchment (Hautapu, Reporoa and Lichfield) is applied to farmland which is either owned by Fonterra, or owned by other parties, referred to as third party farms. The farming types comprise a mixture of dairy, sheep and/or cut and carry grazing systems.

8.2 It is noted the Hautapu and Reporoa sites are in the process of re-consenting for wastewater discharge. Any wastewater discharge and associated farming activity will be assessed in the context of the new rules in PC 1.

8.3 I observe that over time Fonterra has made a conscious effort to reduce the level of nitrogen leaching from both its own farms and the third party farms. The evidence of Dr Martin Neale, on behalf of Fonterra, explains these changes in more detail.

8.4 This has been implemented from a combination of improvements in the wastewater treatment processes to reduce nutrient

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concentrations (such as additional treatment prior to irrigation), changes in cleaning products to reduce nitrogen usage (however this has increased P usage), increase in irrigation area and changes in irrigation practices, and changes in farming system (i.e. reduction in stock intensity and move to cut-and-carry) to reduce overall groundwater leaching of nitrogen.

8.5 I have reviewed the summary results of the Overseer modelling for each of the Fonterra-owned and third party farms within the PC1 catchment area. The results of the Overseer modelling for the 2017/18 season indicate a range in nitrogen leaching from 13 - 85 kgN/ha/year. This range of nitrogen leaching figures is comparable to what I see in other dairy farming operations in the Waikato catchment that do not receive Fonterra wastewater, and in many cases would be below the 75th percentile. The majority of the third party farms are already operating below the 75th percentile. I believe Fonterra will be able to make further adjustments to the management of the wastewater process to ensure all of the third party farms reduce the nitrogen leaching to below the 75th percentile.

9. CONCLUSION

9.1 In summary, I am supportive of the proposed rules in PC 1 around the 75th percentile rule regarding nitrogen management. For most farmers the changes required will be achievable, but will have significant impacts on those with greater reductions to make. There will be a small group of farms that will struggle to decrease to the required level without significant decreases in profitability. For a small proportion, a change in land use might be the only option.

James Allen
3 May 2019

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References:

AgResearch (S Ledgard, N Mapp, N Bartlett) 2017. Understanding Nutrient losses on Waikato case study farms and effectiveness of selected mitigation options. Report for Fonterra and DairyNZ.

AgFirst (P Journeaux, E Van Reenen, T Manjela, S Pike, I Hanmore, S Millar) 2017. Analysis of drivers and barriers to Land Use Change. A report prepared for MPI.

AgFirst (Allen, Dewes, Waugh et al) 2009. Upper Waikato Nutrient Efficiency study

Howarth, S., Journeaux, P., 2016. Review of Nitrogen Mitigation Strategies for Dairy Farms - is the method of analysis and results consistent across studies? In: Integrated nutrient and water management for sustainable farming. (Eds L.D. Currie and R.Singh). http://flrc.massey.ac.nz/publications.html. Occasional Report No. 29. Fertilizer and Lime Research Centre, Massey University, Palmerston North, New Zealand.

E.Moran, Pearson L, Couldrey M, Eyre K., The Southland Economic Project – Agriculture and Forestry" April 2017

Perrin Ag, 2013. Upper Waikato Drystock Nutrient Efficiency Study

Journeaux, P.R., 2019. Thoughts on the allocation of nutrients: the issue with Natural Capital allocation. In: *Nutrient loss mitigations for compliance in agriculture*. (Eds L.D. Currie and C.L. Christensen).

http://flrc.massey.ac.nz/publications.html. Occasional Report No. 32. Fertilizer and Lime Research Centre, Massey University, Palmerston North, New Zealand

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Monday, 7 January 2019 2:19 PM
To: david.burger@dairynz.co.nz
Subject: FW: Analysis of GHG and water mitigations
Attachments: Farm Systems Change and KPI outcomes for Owl Farm.pdf

Happy New Year!

Louise kindly sent the attached to me. Do you know of any similar research that has been done looking at the impacts from dairy system change on nitrogen leaching and greenhouse gas emissions? We would be interested in doing more analysis of this sort. Summary of Louise's results below.

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Option A – De-intensify

- Small improvement on current profit levels
- Further N loss reduction (30% from 2015, 12.5% from current)
- System simplification, with limited tools and clearer decision making rules.
- Greater complexity and risk in the process of extracting maximum value. Much higher variability in performance.
- May have wide public appeal with less dairying intensity.
- Remove 38% of Farm's current cash spend from local New Zealand businesses
- Reduce Gross greenhouse gas emissions by 19%
- Improve greenhouse gas efficiency/litre of milk by 8.6%

Option B – Infrastructure

- Satisfactory lift in farm Operating Profit
- Further N Loss reduction (32% from 2015, 16% from current)
- System much more agile, resilient and repeatable
- More tools available to respond to changes and extract gains.
- Offers soil and pasture protection, plus shade and shelter for cows.
- Remove 8.6% of Farm's current cash spend from local New Zealand businesses
- Reduce Gross greenhouse gas emissions by 1.5%
- Improve greenhouse gas efficiency/litre of milk by 13.1%

From: Louise Cook (OwlFarm) <Louise@owlfarm.nz>
Sent: Tuesday, 18 December 2018 11:18 AM
To: Martin Workman <martin.workman@mfe.govt.nz>
Subject: RE: Analysis of GHG and water mitigations

Kia Ora Martin,

Apologies for the delay in providing this information, there has been a late flurry in guests visiting the farm I the past few weeks.
Please find a report attached that details the summary information from our Farm Systems evaluation in a profit, water quality and Greenhouse gas context

Happy to discuss this work at any time

Kind Regards

Louise Cook
Demonstration Manager – Owl Farm
St Peter's Cambridge, Private Bag 884, Cambridge 3450, New Zealand
P +64 7 827 9817 I M +64 27 808 5777 I **F** +64 7 827 9812

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From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Thursday, 6 December 2018 4:36 PM
To: Louise Cook (OwlFarm) <Louise@owlfarm.nz>
Subject: Analysis of GHG and water mitigations

Hi Louise

Great to catch up with you at Dairy Environment Leaders. I would be very interested in the analysis you have undertaken on reducing GHG emissions and what effects it also has on reducing contaminants to water.

Thanks

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries
Mobile: 022 517 3268 Email: martin.workman@mfe.govt.nz Website: www.mfe.govt.nz
23 Kate Sheppard Place, PO Box 10362, Wellington 6143

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Andre Silveira

From: Gavin Forrest <GForrest@fedfarm.org.nz>
Sent: Monday, 25 March 2019 7:35 AM
To: Martin Workman
Subject: FW: Fishing a positive spinoff from Brydone family's farming ethos | Otago Daily Times Online News

Thought Minister Parkers Office may be interested in this – to provide some balance to Martin Taylor's rhetoric

https://www.odt.co nz/rural-life/focus-on-farming/fishing-positive-spinoff-brydone-family's-farming-ethos

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Andre Silveira

From: Victoria Young <Victoria.Young@mfe.govt.nz> on behalf of Martin Workman <martin.workman@mfe.govt.nz>
Sent: Friday, 2 August 2019 8:56 AM
To: Ivan.Lawrie@far.org.nz; Chris.McLay@waikatoregion.govt.nz; CAllen@fedfarm.org.nz; Mike.Chapman@hortnz.co.nz; Michelle.Sands@hortnz.co.nz; Nadeine.Dommisse@ecan.govt.nz; david.burger@dairynz.co.nz; Kay.Baxter@mpi.govt.nz; dan.coup@deernz.org; richard.parkes@beeflambnz.com; scott.champion@primarypurpose.co.nz; Vin.Smith@es.govt.nz; esoal@irrigationnz.co.nz; collier.isaacs@mpi.govt.nz; I.W.Barugh@massey.ac.nz
Cc: Irene Parminter; Annabelle Ellis
Subject: Good Farming Practice Governance Group

Dear Governance Group members,

Thank you for your work to date as members of the Good Farming Practice Governance Group. The Group has achieved a great deal with the development and launch of the Action Plan, and the subsequent inclusion of the Action Plan's deliverables in sector strategies. The Group has also helped inform the work of the Freshwater Task Force. Looking forward, it is timely to review the need for the Good Farming Practice Governance Group in the light of the development of the Essential Freshwater programme, the Integrated Farm Planning (IFP) project within MPI, and the establishment of the IFP project team working on the Farm Environment module.

As you know, the first annual report of the Action Plan is in preparation. A draft will be circulated shortly. I suggest that the Governance Group should meet, likely mid-September (potentially on the same day as the IFP meeting), to finalise the report and decide the future of the Governance Group. MPI will schedule this meeting, and send out an invitation to you in due course.

As Scott Champion's contract has now ended, I would like to thank Scott for his outstanding work in facilitating the Group from its inception.

Ngā Mihi

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries
Mobile: 022 517 3268 Email: martin.workman@mfe.govt.nz Website: www.mfe.govt.nz
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Andre Silveira

From: Carl Hanson <carl.hanson@ecan.govt.nz>
Sent: Friday, 3 May 2019 2:55 PM
To: kolt.johnson@aucklandcouncil.govt.nz; Amber Kreleger; Carl Hanson; Fouad Alkhaier; Mark Trewartha; Nicole Calder-Steele; Olive.Steven@gdc.govt.nz; Doug.Mzila@gw.govt.nz; Rebecca.Morris@gw.govt.nz; Janine.Barber@hbrc.govt.nz; stephen.collins@horizons.govt.nz; peter.davidson@marlborough.govt.nz; susieo@nrc.govt.nz; Marc.Ettema@orc.govt.nz; Jane.Harvey@trc.govt.nz; joseph.thomas@tasman.govt.nz; John.Hadfield@waikatoregion.govt.nz; Nic.Peet@horizons.govt.nz; Mike.Ede@marlborough.govt.nz; Dan Elder; Bryan Smith; Chris Daughney; James King; Lauren Long; Helen Rutter; a.dark@aqualinc.co.nz; Murray.Close@esr.cri.nz; M.Moreau@gns.cri.nz; U.Morgenstern@gns.cri.nz; roland.stenger@lincolnagritech.co.nz; James Griffiths; jalsop@iteffect.co.nz
Subject: Groundwater Forum 6-7 May, final agenda
Attachments: May 2019 agenda Groundwater Forum.docx

Hi all,

Just confirming the agenda for next week's Groundwater Forum meeting (unchanged from the earlier draft I sent out), and the list of people attending. See you all (or "y'all", as Rebecca would say) next week.

Carl

Carl Hanson
Groundwater Science Manager
Environment Canterbury

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REGIONAL GROUNDWATER FORUM

MEETING AGENDA MAY 2019

DATE: MONDAY 6TH - TUESDAY 7TH MAY 2019

VENUE: Ministry for the Environment, 23 Kate Sheppard Place, Wellington

DAY 1 – Monday 6th May	
Coffee/tea from 9:30 am	
10:00 – 12:00	Introductions Regional Round-up
12:00 - 1:00	lunch
1:00 - 1:30	Helen Rutter, Aqualinc Groundwater level forecasting; groundwater funding
1:30 – 2:00	James Griffiths, NIWA NZWaM-Hydro update (focus on groundwater component)
2:00 - 2:30	Roland Stenger, Lincoln Agritech Critical Pathways project (hopefully with some SkyTEM results)
2:30 - 3:00	Uwe Morgenstern, GNS Te Whakaheke o Te Wai – national groundwater age map
3:00 - 3:30	afternoon tea
3:30 - 4:00	Murray Close, ESR Pesticides/emerging contaminants; Envirolink grant/microbial transport
4:00 - 4:30	Magali Moreau, GNS Emerging contaminants in the Waikato; NGMP update
4:30 - 5:00	Closing discussion; wrap up by 5:00
from 7 pm – dinner at Mac's Brewery	

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REGIONAL GROUNDWATER FORUM

MEETING AGENDA MAY 2019

DATE: MONDAY 6TH - TUESDAY 7TH MAY 2019

VENUE: Ministry for the Environment, 23 Kate Sheppard Place, Wellington

DAY 2 – Tuesday 7th May	
Coffee/tea from 8:00 am	
8:30 - 9:30	Business updates • LAWA • Environment ReCoCo / Wells database • Drinking water
9:30 - 10:00	RMG update • Nic Peet (Horizons) and/or Stefanie Rixecker (Canterbury)
10:00 - 10:30	Morning tea
10:30 - 11:00	Introduction to the Environmental Data SIG • Mike Ede, Marlborough (ED SIG convener)
11:00 - 12:00	Updates from MfE • Update on the GW Forum activity / Water Taskforce o James King, Bryan Smith • EA2019 and FW2020: groundwater reporting o Chris Daughney, Lauren Long • GW quality data extraction update (MfE/LAWA) o Dan Elder
12:00 - 1:00	Lunch
1:00 - 2:00	Discussion, Groundwater monitoring programmes • Rebecca Morris, chair
2:00 - 3:00	Discussion: Coastal groundwater • Pete Davidson, chair
Meeting finishes 3:00 pm *Next meeting: Monday 2 December 2019, Rotorua (in conjunction with Hydro Soc)*	

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REGIONAL GROUNDWATER FORUM

ATTENDEE LIST

DATE: MONDAY 6TH - TUESDAY 7TH MAY 2019

VENUE: Ministry for the Environment, 23 Kate Sheppard Place, Wellington

Name	Organisation	Day 1	Day 2
Kolt Johnson	Auckland Council	1	1
Amber Kreleger	Environment Canterbury	1	1
Carl Hanson	Environment Canterbury	1	1
Fouad Alkhaier	Environment Canterbury	1	1
Mark Trewartha	Environment Canterbury	1	1
Nicole Calder-Steele	Environment Canterbury	1	1
Olive Steven	Gisborne District Council	1	1
Doug Mzila	Greater Wellington Regional Council	1	1
Rebecca Morris	Greater Wellington Regional Council	1	1
Janine Barber	Hawke's Bay Regional Council	1	1
Stephen Collins	Horizons Regional Council	1	1
Peter Davidson	Marlborough District Council	1	1
Susie Osbaldiston	Northland Regional Council	1	1
Marc Ettema	Otago Regional Council	1	1
Jane Harvey	Taranaki Regional Council	1	1
Joseph Thomas	Tasman District Council	1	1
John Hadfield	Waikato Regional Council	1	1
Nic Peet	Horizons Regional Council		1
Mike Ede	Marlborough District Council	1	1
Dan Elder	Ministry for the Environment	1	1
Bryan Smith	Ministry for the Environment		1
Chris Daughney	Ministry for the Environment		1
James King	Ministry for the Environment		1
Lauren Long	Ministry for the Environment		1
Helen Rutter	Aqualinc	1	
Andrew Dark	Aqualinc	1	
Murray Close	ESR	1	
Maga i Moreau	GNS	1	
Uwe Morgenstern	GNS	1	
Roland Stenger	Lincoln Agritech	1	
James Griffiths	NIWA	1	
Jonathon Alsop	IT Effect		1

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Andre Silveira

From: Lee Cowan <Lee.Cowan@dairynz.co.nz>
Sent: Monday, 2 September 2019 10:42 AM
To: Martin Workman; s 9(2)(a) (Max.Kennedy@mbie.govt.nz); s 9(2)(a) s 9(2)(a) s 9(2)(a) Alister Body; s 9(2)(a) s 9(2)(a) s 9(2)(a) s 9(2)(a) s 9(2)(a)
Subject: MEDIA RELEASE: Five years of Water Accord shows dairy farmers doing their bit to improve water quality
Attachments: Fenced and planted streams, Waihi 7.jpg; SUSTAINABLE DAIRYING WATER ACCORD YEAR 5 - Q&A.docx

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Five years of Water Accord shows dairy farmers doing their bit to improve water quality

One of New Zealand's biggest hands-on environmental efforts has created a wave of change on dairy farms across the country and is contributing to progress in improving water quality.

Today, the *Sustainable Dairy: Water Accord* farmers and partners announced their achievements to date, including:

- fencing off dairy cattle from 24,249km (98.3%) of significant dairy accord waterways (waterways which are more than one metre wide and more than 30cm deep). That's the equivalent of nearly 12 road trips from Cape Reinga to Bluff. Excluding stock from waterways is one of the most beneficial ways to improve water quality
- installing bridges and culverts on 100% of stock crossing points dairy cows use
- preparing 10,396 nutrient budgets – up from 6,400 budgets in the first year of the Accord. Nutrient budgets allow farmers to carefully plan nutrient applications and manage nutrient losses
- assessing 100% of Accord farms for effluent management practices – this process checks that farms have appropriate infrastructure and systems in place to manage effluent
- developing riparian management plans to protect water quality on 52% of Accord farms with waterways.

The *Sustainable Dairying: Water Accord* was signed in 2013 and represents a five-year voluntary commitment from New Zealand's dairy farmers, DairyNZ, dairy processors and supporting partners to take a range of actions to improve New Zealand's waterways. You can see a copy online.

Through the Dairy Tomorrow Strategy - which the Accord will transition into – the dairy sector has made a strong commitment that they will continue to work with communities, councils and government to lead work to improve waterways.

Alister Body, chair of the Dairy Environment Leaders Group, a multi-sector group formed to be guardians of the Accord, says that the Water Accord has seen dairy farmers across the country make a range of on-farm changes to improve their environmental management.

"Over 11,000 dairy farmers are part of the Accord. They pulled on their gumboots and put in many thousands of hours of time and made significant investment to help improve water quality," says Mr Body.

"The Water Accord is one of the factors contributing to the measurable improvements in many waterways we have seen occur recently," says Mr Body. "As ecosystems take some time to respond to changes on the ground we can expect to see further improvements to water quality as a result of the changes made on farms over the past five years."

"While we have made improvements in a number of areas, we know that we still have more work to do – particularly in the area of effluent management. While the accord targets were met a minority of farmers are letting everyone else down and need to improve their performance. Dairy companies will continue to work with these farmers to improve their effluent management practices," he adds.

Land, Air, Water Aotearoa's (LAWA) most recent analysis of national river quality trends from 2008 to 2017 showed that for eight out of the nine water quality indicators reported on, *more* monitored sites were improving than degrading.[1]

Mr Body says that many types of activities affect urban and rural waterways in New Zealand, and that dairy farmers are committed to playing their part in improving our water quality.

"We all use our rivers, and we all want to protect them for our future. Although we can be proud of what has been achieved so far, we all acknowledge that there is more to be done to improve ecosystem health and water quality for all New Zealanders," he adds.

Andy Palmer and Sharon Collett from Temuka have been progressively developing planting on their farm over the past twenty years. They are just two of the thousands of farmers who have been taking action to improve water quality.

Today, flourishing riparian planting stretches along about three kilometres of the creek on their farm. Nearly 4,000 plants have been established on the farm, and the couple are continuing to add to this every year, with support from Environment Canterbury. The couple have also fenced off all the waterways on their property, and worked with their former sharemilkers who now own a neighbouring dairy farm to plant native species on a coastal wetland bordering their farms. The wetland is home to Canterbury's only known population of the native giant *kōkopu* fish.

Mr Palmer says that he is fully behind the Water Accord and that today the environmental management requirements in the Accord are very much 'business as usual' for farmers.

"We have a Farm Environment Plan now which covers planting, fencing, effluent and nutrient management. With the plan in place we will continue to take good care of the environment and waterways on our farm and we are audited on our progress," Mr Palmer says.

The Water Accord partners are:

- DairyNZ
- Fonterra
- Open Country
- Miraka
- Synlait

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- Tatua
- DCANZ (Dairy Companies Association of New Zealand)
- Oceania Dairy

Supporting partners are:

- The Fertiliser Association
- Ravensdown
- Ballance Agri-Nutrients
- Federated Farmers
- IrrigationNZ
- New Zealand Institute of Primary Industry Management

- ENDS –

Images attached:
Temuka dairy farmer Andy Palmer has carried out extensive riparian planting on his farm and is now able to enjoy fishing on his farm thanks to the improvements in water quality.

Media Contact:

Alister Body Dairy Environment Leaders Group Chair	s 9(2)(a)
Lee Cowan Senior Communications and External Engagement Manager DairyNZ	021 930 836

A range of farmers are also available to talk to you about what they've been doing on their dairy farms to improve water quality. The following farmers are Dairy Environment Leaders and have offered to speak to media.

National	s 9(2)(a)
Northland	s 9(2)(a)
BOP	s 9(2)(a)
Waikato	s 9(2)(a)
Taranaki	s 9(2)(a)
Canterbury	s 9(2)(a)
Otago	s 9(2)(a)
Southland	s 9(2)(a)

Cheers

Lee

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Lee Cowan
Senior Communications and Engagement Manager
DairyNZ
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Online: dairynz.co.nz | facebook.com/dairynz | twitter.com/dairynz
Cnr Ruakura & Morrinsville Roads | Newstead | Private Bag 3221| Hamilton 3240

[1] https://www.lawa.org.nz/explore-data/river-quality/#/tb-national

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Sunday, 24 March 2019 9:01 PM
To: charlotte.rutherford@fonterra.com
Cc: Victoria Young
Subject: MfE and regional council chair meeting

Hi Charlotte

How are you going? It would be good to catch up.

Doug Leeder, chair of the regional sector, is also keen for us to all catch up. He has talked with MfE about a meeting you had with him, and Fiona McTavish, regarding how Fonterra could assist with the delivery of farm environment plans.

As you probably know the Government is looking to regulate for the use of farm environment plans through a National Environmental Standard. Doug is keen that Fonterra and other processors support farmers with preparing plans and play a role in auditing and reporting on the plans.

MfE agreed to set up a joint meeting with you, Doug and Fiona. Cheryl Barnes, my manager, and I would also attend.

We are meeting with Doug and Fiona in Wellington on 12 April. Can you let me know if you would be available to meet in the morning of 12 April. If this doesn't suit I'll ask Victoria to work some magic with people's diaries.

Cheers

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries
Mobile: 022 517 3268 Email: martin.workman@mfe.govt.nz Website: www.mfe.govt.nz
23 Kate Sheppard Place, PO Box 10362, Wellington 6143

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Andre Silveira

From: David Burger <David.Burger@dairynz.co.nz>
Sent: Thursday, 10 January 2019 10:50 AM
To: Martin Workman
Subject: RE: Analysis of GHG and water mitigations

Hi Martin,
Happy New Year to you also! Hope you had a good break. My first full day back, so just found your email now.

The BERG work reviewed this based on previous work. Key findings were:
A summary of two existing studies indicated that changes already in place by some councils to meet existing Resource Management Act requirements for freshwater management could reduce agricultural greenhouse gas emissions by up to 4%. If land-use change to forestry is also considered, the reports suggest that up to 800,000 hectares of trees could be planted as a result of the Freshwater NPS – the carbon sequestration potential of these trees could be equivalent to approximately 14% of agricultural emissions

The synthesis report is now online if you haven't seen it yet:
https://www.mpi.govt.nz/protection-and-response/environment-and-natural-resources/biological-emissions-reference-group/

Our Dairy Action Plan for Climate Change (DACC) work has established 10 partnership farms to understand farm system options for GHG reduction, and this work will also document co-benefits for WQ.
https://www.dairynz.co.nz/media/5787488/dairy-action-for-climate-change-2017-2018.pdf

Finally our Selwyn-Hinds case study which is focused on meeting WQ limits through farm system changes will also look at co-benefits for GHG:
https://www.dairynz.co.nz/environment/in-your-region/canterbury-environmental-rules/meeting-a-sustainable-future-selwyn-and-hinds/. A key target for this project is:

- By 2021, farmers are confident to implement new systems and options to address N leaching limits and GHG emissions while maintaining profitable and resilient farm business.

Does this help?
Regards,
David

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Monday, 7 January 2019 2:19 PM
To: David Burger <David.Burger@dairynz.co.nz>
Subject: FW: Analysis of GHG and water mitigations

Happy New Year!

Louise kindly sent the attached to me. Do you know of any similar research that has been done looking at the impacts from dairy system change on nitrogen leaching and greenhouse gas emissions? We would be interested in doing more analysis of this sort. Summary of Louise's results below.

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Option A – De-intensify

- Small improvement on current profit levels
- Further N loss reduction (30% from 2015, 12.5% from current)
- System simplification, with limited tools and clearer decision making rules.
- Greater complexity and risk in the process of extracting maximum value. Much higher variability in performance.
- May have wide public appeal with less dairying intensity.
- Remove 38% of Farm's current cash spend from local New Zealand businesses
- Reduce Gross greenhouse gas emissions by 19%
- Improve greenhouse gas efficiency/litre of milk by 8.6%

Option B – Infrastructure

- Satisfactory lift in farm Operating Profit
- Further N Loss reduction (32% from 2015, 16% from current)
- System much more agile, resilient and repeatable
- More tools available to respond to changes and extract gains.
- Offers soil and pasture protection, plus shade and shelter for cows.
- Remove 8.6% of Farm's current cash spend from local New Zealand businesses
- Reduce Gross greenhouse gas emissions by 1.5%
- Improve greenhouse gas efficiency/litre of milk by 13.1%

From: Louise Cook (OwlFarm) <Louise@owlfarm.nz>
Sent: Tuesday, 18 December 2018 11:18 AM
To: Martin Workman <martin.workman@mfe.govt.nz>
Subject: RE: Analysis of GHG and water mitigations

Kia Ora Martin,

Apologies for the delay in providing this information, there has been a late flurry in guests visiting the farm I the past few weeks.
Please find a report attached that details the summary information from our Farm Systems evaluation in a profit, water quality and Greenhouse gas context

Happy to discuss this work at any time

Kind Regards

Louise Cook
Demonstration Manager – Owl Farm
St Peter's Cambridge, Private Bag 884, Cambridge 3450, New Zealand
P +64 7 827 9817 I M +64 27 808 5777 I **F** +64 7 827 9812

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From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Thursday, 6 December 2018 4:36 PM
To: Louise Cook (OwlFarm) <Louise@owlfarm.nz>
Subject: Analysis of GHG and water mitigations

Hi Louise

Great to catch up with you at Dairy Environment Leaders. I would be very interested in the analysis you have undertaken on reducing GHG emissions and what effects it also has on reducing contaminants to water.

Thanks

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries
Mobile: 022 517 3268 Email: martin.workman@mfe.govt.nz Website: www.mfe.govt.nz
23 Kate Sheppard Place, PO Box 10362, Wellington 6143

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St Peter's School, Cambridge, New Zealand
Telephone: 647 827 9899 Fax: 647 827 9812
Website: www.stpeters.school.nz

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Andre Silveira

From: Matthew Randal <Matt.Randal@fonterra.com>
Sent: Saturday, 4 May 2019 4:53 PM
To: Isaac Bain
Cc: Martin Workman
Subject: RE: Data questions

Hi Isaac,

I am in Charlotte's team and we are keen to do some reporting at a catchment level. Do you have shapefiles of the catchments?

If easiest to talk over the phone, please don't hesitate to call.

Thanks heaps,

Matt

Matthew Randal
Sustainable Dairying Technology Manager

Fonterra Co-operative Group Limited
matthew.randal@fonterra.com
mobile +64 21 217 7472
Private Bag 92032, Auckland,1142, 109 Fanshawe Street
Auckland 1010 New Zealand
nzfarmsource.co.nz | fonterra.com

From: Martin Workman [mailto:martin.workman@mfe.govt.nz]
Sent: Wednesday, 10 April 2019 9:31 a.m.
To: Charlotte Rutherford <Charlotte.Rutherford@fonterra.com>
Cc: Isaac Bain <Isaac.Bain@mfe.govt.nz>
Subject: RE: Data questions

Isaac is our GIS/data person so if you can connect him with your data guy would be good.

It would be good to understand how you can help us with testing our regulatory proposals and what impact they would have on farms.

From: Charlotte Rutherford <Charlotte.Rutherford@fonterra.com>
Sent: Wednesday, 10 April 2019 8:47 AM
To: Martin Workman <martin.workman@mfe.govt.nz>
Subject: RE: Data questions

My data guy is running some comparisons of cap verses percentile down to regional council areas. I hopefully will have something to show on Friday for us to decide if its useful and how we would move forward.
Does MfE have spatial GIS mapping of catchments? We don't have a full data set of all catchments but if that was available could run the data to that level.

From: Martin Workman [mailto:martin.workman@mfe.govt.nz]
Sent: Tuesday, 9 April 2019 5:18 p.m.

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To: Charlotte Rutherford <Charlotte.Rutherford@fonterra.com>
Subject: Data questions

Hi

To give you an idea of the questions I'm getting from my team. It would be good to get an idea of what would be possible and what would not at our breakfast on Friday.

- Can Fonterra give us information on distribution of N kg/ha discharges from Overseer information so we can see how many farms would be captured by this proposed rule for different n cap scenarios e.g. 50, 70 90 kg/ha.
- Also, would Fonterra consider entering into a data sharing arrangement with regional councils (or central government) to provide Overseer results (possibly just those over the 70kg/ha cap) so that councils could work out who the NES n cap applied to and approach them for a consent or FEP setting out management required to reduce to cap. Otherwise is time consuming and difficult for Councils to work out who the n cap threshold (or top percentile) should apply to.

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries
Mobile: 022 517 3268 Email: martin.workman@mfe.govt.nz Website: www.mfe.govt.nz
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Andre Silveira

From: Tanya Cornwell <Tanya.Cornwell@dairynz.co.nz>
Sent: Tuesday, 7 May 2019 4:55 PM
To: s 9(2)(a)
Cc: Alister Body; s 9(2)(a) ; David Burger; s 9(2)(a)
Subject: RE: DELG Meeting
Attachments: DELG Agenda May 2019.pdf

Kia ora koutou

Firstly, a quick introduction for the majority of you. My name is Tanya and I am a Senior Policy Advisor in the Wellington office. I have stepped into the secretariat role for DELG.

Please find the attached agenda for the DELG meeting on Thursday, 16 May. Although I have responded to the meeting invite, I am aware that some DELG members may have been inadvertently left off the list. Please feel free to being this to my attention so I am able to provide them the agenda.

If you have any queries, please let me know.

Ngā mihi

Tanya Cornwell
Senior Policy Advisor

DairyNZ
Lambton Quay |Wellington| NEW ZEALAND
Mob +**64 27 239 8468**

-----Original Appointment-----
From: s 9(2)(a)
Sent: Tuesday, 9 April 2019 10:23 AM
To: s 9(2)(a) ; s 9(2)(a) s 9(2)(a) David Burger; s 9(2)(a) Tanya Cornwell; s 9(2)(a)
Cc: Alister Body; s 9(2)(a)
Subject: DELG Meeting
When: Thursday, 16 May 2019 10:00 AM-2:00 PM (UTC+12:00) Auckland, Wellington.
Where: DairyNZ, level 10, 86 Lambton Quay, Wellington

Hello DELG Members,

I hope this finds you all well.

Firstly apologies for another calendar invitation to this meeting, s 9(2)(a) is no longer with DairyNZ and we couldn't track your attendance. I would be so grateful if you could RSVP to this calendar appointment so I can help with travel arrangements, catering and the attendance list.

We are looking forward to welcoming you all to the office for this DELG meeting.

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Please don’t hesitate to contact me with any queries and/or requirements.

Kind regards

s 9(2)
( )

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Andre Silveira

From: Tanya Cornwell <Tanya.Cornwell@dairynz.co.nz>
Sent: Friday, 7 June 2019 1:59 PM
To: s 9(2)(a) ; Alister Body; s 9(2)(a) David Burger s 9(2) Martin Workman; MBIE (Max.Kennedy@mbie.govt.nz); s 9(2)(a)
Cc: s 9(2)(a)
Subject: RE: DELG minutes - 16 May 2019

Kia ora s 9(2)

Thank you for highlighting the importance of capturing the feedback re Commitment 1. I will incorporate your comments into the minutes. The amended version will be presented in the next meeting agenda.

Ngā mihi nui

Tanya Cornwell
Senior Policy Advisor

DairyNZ
Lambton Quay |Wellington| NEW ZEALAND
Mob **+64 27 239 8468**

From: s 9(2)(a)
Sent: Friday, 7 June 2019 11:53 AM
To: Tanya Cornwell <Tanya.Cornwell@dairynz.co.nz>; s 9(2)(a) s 9(2)(a) ; David Burger <David.Burger@dairynz.co.nz>; s 9(2)(a)
Cc: s 9(2)(a)
Subject: RE: DELG minutes - 16 May 2019

Hi Tayna,

Thanks for sending the minutes through.

My main comment relates to the record of the discussion of item 5: DELG's future role – options and opportunities.

You have captured the nature of DairyNZ's thinking around the structure (governance, implementation, advisory) for the implementation of Commitment 1. However, I think it would be useful to also capture the nature of the feedback from many of the DELG who argued that the stakeholder input (particularly the independent stakeholders) should not be confined to just a 3rd tier advisory group.

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Several members made the point that the involvement of independent stakeholders at all levels of any structure will help to ensure that wider society concerns are properly understood and addressed. It was felt that this will also provide greater public confidence in the sector's efforts to meet the commitments.

This was the context of the request that DairyNZ develop a paper for the next meeting.

The draft minutes suggest that this paper will be solely about the definition of the purpose of the independent advisory group. It was my understanding that - following the above discussion - we were expecting the paper to take a broader approach to how to engage independent stakeholder input within the overall structure so as to best help the sector address the C1 commitments and provide public confidence in the process.

Kind regards

s 9(2)(a)

[redacted]

From: Tanya Cornwell [mailto:Tanya.Cornwell@dairynz.co.nz]
Sent: Friday, 7 June 2019 9:39 AM
To: Alister Body s 9(2)(a) s 9(2)(a) David Burger <David.Burger@dairynz.co.nz>; s 9(2)(a) Martin Workman <martin.workman@mfe.govt.nz>; MBIE (Max.Kennedy@mbie.govt.nz) <Max.Kennedy@mbie.govt.nz>; s 9(2)(a) [redacted]
Subject: DELG minutes - 16 May 2019

Tēnā koutou

I hope this email finds you all well. Please find the attached *draft* minutes from the 16 May DELG meeting. If you have any comments, or find any discrepancies, please let me know. Alternatively, any matters arising could be mentioned during the next DELG meeting. Alister, please note there have been minor amendments to section 2 to clarify some points.

On that note, I will soon be sending out a Doodle poll to determine everyone's availability for the next (and final) DELG meeting. It was suggested to hold the meeting in August rather than in July to allow more time for organisation. It was also suggested to hold the meeting on a Thursday to keep up with previous practice.

Ngā mihi

Tanya Cornwell
Senior Policy Advisor
Policy & Advocacy

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Responsible Dairy Group

DairyNZ
level 10, Prime Property Tower (PPT), 86 – 90 Lambton Quay |PO Box 10002 | Wellington 6143 | NEW ZEALAND
Mob +**64 27 239 8468**
Web www.dairynz.co.nz | www.GoDairy.co.nz | www.getfresh.co.nz

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Andre Silveira

From: Mark Robinson <Mark.Robinson2@fonterra.com>
Sent: Thursday, 29 August 2019 8:22 AM
To: Jan Brown; 'Andrew Morrison - s 9(2)(a) Cain Duncan; 'Elaine Cook - Dairy NZ'; 'Geoffrey Young - FF'; 'Karen Adair - MPI'; 'Lindsay Fung - Deer NZ'; Martin Workman; 'Sam McIvor '; 'Steve McBride - Open Country Dairy'; 'Tim Mackle - Dairy NZ'; 'Vincent Arbuckle - MPI'
Cc: 'Allie Stevens (EA to Tim Mackle Dairy NZ)'; Laura Tammaro (MPI); 'Scarlett Becke (EA to Vince Arbuckle MPI)'; Victoria Young
Subject: RE: Draft media release from hui yesterday

Morning all,

Comfortable with the wording in general however one suggested tweak.

As per the copy below, Andrew did raise a very valid point regarding how people are 'feeling' and not wanting to feel the same way next year and in future years. I suggest that we extend the message so that it clearly communicates that farmers as a collective don't want to feel this way next year.

Thanks

Mark

From: Jan Brown <jan.brown@es.govt.nz>
Sent: Wednesday, 28 August 2019 4:35 p.m.
To: s 9(2)(a)

'Victoria Young - (PA to M Workman MfE)' <victoria.young@mfe.govt.nz>
Subject: FW: Draft media release from hui yesterday

Hello

Attached is a draft media release as a result of yesterday's hui. Your feedback is welcomed on this. Can you please advise any changes/or comfort with the release, as soon as possible.

Regards

Jan

Media Release

29 August 2019

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Southland pulls together to tackle winter grazing

Council, industry and government leaders gathered together in Invercargill this week to discuss and agree on a joint action plan to address the wintering issues seen in Southland this year.

The hui, hosted by Environment Southland, included representatives from both the Ministry for the Environment and Ministry for Primary Industries, industry groups Beef and Lamb NZ, NZ Deer Farmers Association, DairyNZ and Federated Farmers; and organisations Open Country and Fonterra.

There was an acknowledgement from around the table that there needed to be a Southland solution for a Southland problem, and that change on the ground to winter practice was crucial if they were to see improvement next season.

Beef and Lamb New Zealand - Southern South Island chairman Andrew Morrison said he didn't want to feel the same way next year. He recognised that the scrutiny on farmers wintering practices this year had highlighted problems and that those around the table needed to take these messages back to their farmers.

Environment Southland has completed three flights to inspect winter grazing practices and has XXX farms to follow-up with on-ground inspections. Of the XXX farms seen from the flights, only one was using all expected good management practices.

The group is now developing a plan with both short and long-term actions. The focus for the next six weeks would be on talking with farmers about paddock selection and managing swales or critical source areas on-farm for winter next year. The group agreed that getting all farms to good management practices was critical.

Environment Southland chairman Nicol Horrell said the hui was a positive step forward and important to have the commitment from those around the table to support each other and Southland farmers to doing the right things. "We know the regulation around these practices is changing both from our own plan, but also from Central Government. For these groups and Southland farmers, now's the time to look at and update your farm plans, share these with your teams, and get advice. Change is required."

"We need to see good management practices in next year's winter grazing."

The group also acknowledged that while the focus of this hui was on the environmental aspects of winter grazing, farmers also needed to ensure they met the animal welfare code of practice.

The hui also identified several longer-term initiative including a need for coordinated local leadership and better understanding of the barriers to adopting good management practices.

ENDS

For more information contact senior communications coordinator Adrienne Henderson on 021 784 964.

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Jan Brown
Executive Assistant
Environment Southland *Te Taiao Tonga*

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Andre Silveira

From: Carl Hanson <carl.hanson@ecan.govt.nz>
Sent: Wednesday, 3 April 2019 5:20 PM
To: Dan Elder
Cc: James King; Chris Daughney; Lauren Long; Bryan Smith
Subject: RE: Groundwater Forum - May 6-7 meeting - thank you for your agenda ideas

Hi Dan,

That looks like a good plan. Yes, I think 15 min each will be enough, but I'll try to build in a little flexibility in case something really grabs people's attention.

Thank you.

Carl

From: Dan Elder <Dan.Elder@mfe.govt.nz>
Sent: Wednesday, 3 April 2019 8:09 a.m.
To: Carl Hanson <carl.hanson@ecan.govt.nz>
Cc: James King <James.King@mfe.govt.nz>; Chris Daughney <Chris.Daughney@mfe.govt.nz>; Lauren Long <Lauren.Long@mfe.govt.nz>; Bryan Smith <Bryan.Smith@mfe.govt.nz>
Subject: RE: Groundwater Forum - May 6-7 meeting - thank you for your agenda ideas

Good morning Carl,

With the interest shown in an update from MfE, if you'd like we could split a 45min section up into 3 topics of conversation. That's if you think 15min on each would suffice?

How do the below look as potential agenda items:
James / Bryan – 15min – Update on the GW Forum activity / Water Taskforce
Chris / Lauren – 15min – How GW was reported on in EA2019, and looking ahead to FW2020
Dan – 15min – GW quality data extraction update (MfE/LAWA)

Regards,
Dan

Dan Elder | Senior Analyst | Strategy and Stewardship
Ministry for the Environment – Manatū Mō Te Taiao
Email: dan.elder@mfe.govt.nz Website: www.mfe.govt.nz Mobile: 0226948594
23 Kate Sheppard Place, PO Box 10362, Wellington 6143

From: Carl Hanson <carl.hanson@ecan.govt.nz>
Sent: Tuesday, 2 April 2019 3:26 PM
To: 'Doug.Mzila@gw.govt.nz' <Doug.Mzila@gw.govt.nz>; Dan Elder <Dan.Elder@mfe.govt.nz>; 'Ewen.Rodway@es.govt.nz' <Ewen.Rodway@es.govt.nz>; 'jeff.smith@hbrc.govt.nz' <jeff.smith@hbrc.govt.nz>; 'John.Hadfield@waikatoregion.govt.nz' <John.Hadfield@waikatoregion.govt.nz>; 'joseph.thomas@tasman.govt.nz' <joseph.thomas@tasman.govt.nz>; 'kolt.johnson@aucklandcouncil.govt.nz' <kolt.johnson@aucklandcouncil.govt.nz>; 'Paul.Murphy@gdc.govt.nz' <Paul.Murphy@gdc.govt.nz>; 'peter.davidson@marlborough.govt.nz' <peter.davidson@marlborough.govt.nz>; 'Raoul.Fernandes@boprc.govt.nz'

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<Raoul.Fernandes@boprc.govt.nz>; 'Rebecca.Morris@gw.govt.nz' <Rebecca.Morris@gw.govt.nz>; 'Regan.Phipps@trc.govt.nz' <Regan.Phipps@trc.govt.nz>; 'stephen.collins@horizons.govt.nz' <stephen.collins@horizons.govt.nz>; 'susieo@nrc.govt.nz' <susieo@nrc.govt.nz>
Subject: Groundwater Forum - May 6-7 meeting - thank you for your agenda ideas

Hi all,

Thank you for sending through your ideas for the GW Forum agenda next month. Several said you'd like to hear from CRIs this time, so I'll get in touch with Murray Close, Magali, and Roland Stenger. I'll also see if I can get someone from the Environmental Data SIG to come for one of the days, just to introduce themselves and start some communication between the groups. Nic Peet from Horizons, one of our two RMG reps, is going to try to come for one of the days as well. Some of you mentioned climate change and coastal aquifers, so we might try to work that in somehow. Anyhow, Pete and Rebecca, I'll probably ask for your help to flesh things out a bit more after I've contacted some of the CRI people, if that's OK. Thanks again everyone, and if any more ideas come into your heads, don't hesitate to contact me.

Carl

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Friday, 29 March 2019 9:15 AM
To: David Burger
Cc: Emily Broadmore
Subject: RE: Proposed Run Sheet Minister Parker's Visit DairyNZ

Thanks for sending this through. The office has asked for the location of Lye Farm.

From: David Burger <David.Burger@dairynz.co.nz>
Sent: Thursday, 28 March 2019 12:07 PM
To: Martin Workman <martin.workman@mfe.govt.nz>
Cc: Emily Broadmore <Emily.Broadmore@dairynz.co.nz>
Subject: Proposed Run Sheet Minister Parker's Visit DairyNZ

Hi Martin,
Here is our proposed run sheet for Minister Parkers Visit to Newstead. As discussed we would like to combine the Owl Farm update on Lye Farm, to maximise the opportunity for discussion. We welcome any feedback from you and the Ministers office.
Regards,
David

Minister David Parker Visit to DairyNZ - DRAFT

Date	Thursday 12 April 2019	
Time	10:00am – 1:00pm	
Location	DairyNZ –Lye Farm	
	Lye Farm Meeting Room	
10:00am	Welcome and overview Dairy Tomorrow	Jim van der Poel (DNZ Chair) Dr Tim Mackle (CEO)
10:15am	Update and discussion on Water Quality • Progress on DairyNZ case studies (Aparima, Selwyn-Hinds, Tararua) • Thinking on Nutrient Allocation	Dr David Burger (Strategy & Investment Leader Responsible Dairying)
	Lawn outside Lye farm	
10:30 am	Overview DairyNZ Farm Systems research Principles of N mitigation On-farm adoption model	Dr David McCall (GM New Systems) Dr Bruce Thorold (Strategy & Investment Leader New Systems)
	Paddock out from indoor facilities	
11:00am	P21 farms systems trials and learnings	Dr David Chapman (Principle Scientist)
	Plantain pastures along driveway	Dr Elena Minnee (Scientist)
11:15am	Forages to reduce N leaching:	

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	• Program approach and key learnings • Plantain specifics • Tararua project	
11:30am	**Methane Measurement Stalls** GHG trials	Dr Jane Kay (Senior Scientist)
11:45pm 12:10pm 12:50pm 1:00pm	**Lye Farm Meeting Room** Owl Farm Partnership Farm findings Lunch and discussion Wrap up Depart	Louise Cook (Demonstration Manager Owl Farm) All Jim van der Poel

In attendance:

DairyNZ Board members (Names to be confirmed)

Jenny Cameron – GM Responsible Dairying

David Burger PhD
Strategy and Investment Leader: Responsible Dairying
DairyNZ
Cnr Ruakura & Morrinsville Roads | Newstead | Private Bag 3221| Hamilton 3240 | NEW ZEALAND
Ph +64 7 858 3750 | Mobile +64 27 838 6311
Web www.dairynz.co.nz

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Andre Silveira

From: David Burger <David.Burger@dairynz.co.nz>
Sent: Friday, 28 June 2019 12:11 PM
To: Martin Workman
Subject: RE: Research Projects not funded

Sorry Martin, just tried to call, will need to be Monday.

Key ones are MBIE plantain, MBIE E.coli and FW improvement fund wetlands. Possible also SFF Aparima.
Regards,
David

From: David Burger
Sent: Thursday, 27 June 2019 8:44 AM
To: Martin Workman <martin.workman@mfe.govt.nz>
Cc: Wes Patrick <wes.patrick@mfe.govt.nz>
Subject: Re: Research Projects not funded

Hi Martin,
Sorry we haven't yet- but will try and get this to you by tomorrow afternoon.
It's been a busy time because of our end of financial year and Farmer auditors.
Regards,
David

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Thursday, June 27, 2019 7:57:46 AM
To: David Burger
Cc: Wes Patrick
Subject: RE: Research Projects not funded

Any luck with the information request below? We are wanting to provide the Minister with the letter this week.

From: Martin Workman
Sent: Sunday, 23 June 2019 10:08 PM
To: david.burger@dairynz.co.nz
Cc: Wes Patrick <wes.patrick@mfe.govt.nz>
Subject: Research Projects not funded

Hi David

Following up after the meeting with Ministers Parker and O'Connor. Can you send to me and Wes synopsises or summaries of the research projects that you mentioned at the meeting that have not been funded and why that was. We want to address in a letter to Minister Woods where the funding gap is.

Cheers

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Thursday, 23 May 2019 8:17 AM
To: Elizabeth Soal; Grant Bryden; Neil Williams
Cc: Victoria Young; Kim Ramakers
Subject: RE: Roundtable planning discussion

I'm happy with that. Kim, can you send out a skype link please.

From: Elizabeth Soal <ESoal@irrigationnz.co.nz>
Sent: Thursday, 23 May 2019 8:14 AM
To: Martin Workman <martin.workman@mfe.govt.nz>; Grant Bryden <grant.bryden@mpi.govt.nz>; Neil Williams <Neil.Williams@mpi.govt.nz>
Cc: Victoria Young <Victoria.Young@mfe.govt.nz>
Subject: RE: Roundtable planning discussion

Kia ora everyone,

I'm looking forward to our discussion on Monday regarding potential work in relation to irrigation schemes, data collation, and demonstrating good farming practices.

The original project that INZ was to be delivering is funded under the Sustainable Farming Fund and Environment Canterbury was also a significant funder of the project.

I have had a meeting with Environment Canterbury about this and they are keen to be part of the discussion on the future of the programme and potential refinement of it to ensure alignment with the government's work programme.

I wanted to check with you as to whether you are happy for a couple of representatives from Environment Canterbury to attend the meeting on Monday by way of Skype/Zoom, please?

If you could please let me know, and I will forward the meeting invitation to the relevant people at Environment Canterbury.

I will also provide you with a one-pager outlining the project and the issues as I see them tomorrow.

Thanks very much,
Elizabeth

-----Original Appointment-----
From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Wednesday, 8 May 2019 11:14 AM
To: Elizabeth Soal; Grant Bryden; Visitor; Neil Williams
Subject: Roundtable planning discussion
When: Monday, 27 May 2019 4:00 PM-5:00 PM (UTC+12:00) Auckland, Wellington.
Where: Meetingroom EH 5D

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Monday, 8 April 2019 5:44 PM
To: Elizabeth Soal
Cc: Victoria Young
Subject: RE: Roundtable planning discussion

I'll get Victoria to get back to you with possible dates. Grant Bryden is a key MPI person for getting direction on Minister O'Connor's goals.

From: Elizabeth Soal <ESoal@irrigationnz.co.nz>
Sent: Monday, 8 April 2019 4:31 PM
To: Martin Workman <martin.workman@mfe.govt.nz>
Subject: Roundtable planning discussion

Hi Martin,

Thanks very much for your time last week.

Are you please able to send me some dates that you might be available over the next few weeks to have a roundtable discussion around the potential for rescoping our SFF project to align with government goals etc?

Also please let me know if you can think of any other people that it might be good to involve.

Thanks very much,
Elizabeth

Elizabeth Soal
Chief Executive Officer
Irrigation New Zealand Incorporated

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SUSTAINABLE DAIRYING: WATER ACCORD – FIVE YEARS ON

Questions and Answers

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1. What have been the most significant achievements?

Stock exclusion from farm waterways – 98.3% of dairy accord waterways (>1m wide, >30cm deep) on New Zealand dairy farms are now excluded from dairy cattle. This represents fencing on 24,249km of measured Accord waterways. That's the equivalent of nearly 12 road trips from Cape Reinga to Bluff.

Stock crossing points to protect waterways – 99.8% of the 36,393 regular stock crossing points on dairy farms now have bridges or culverts to protect local water quality.

Effluent management – all Accord dairy farms have been assessed for effluent management practices.

Nutrient management - During the 2017/18 season, 10,396 nutrient budgets were processed. This represents 94% of Accord dairy farms and is a significant gain from the 56% achieved in year one of the Accord.

Riparian management – 52% of farms with waterways have developed a riparian management plan. Farmers will continue to take action to improve riparian management as part of wider Farm Environment Plans.

2. Are these actions making a difference to water quality?

Yes, we believe so. The science tells us that the actions defined in the Accord lead to improvements in water quality outcomes. For example, peer-reviewed and published journal papers have found that stock exclusion from riparian margins and wetlands results in significant reductions in contaminant loss, including nitrogen, phosphorus, sediment and E. coli.

For instance, livestock exclusion on Southland dairy farms has been linked to a 20 percent reduction in E.coli and a 40 percent reduction in phosphorus loss. Those estimates vary between farms but are driven by reduced bank disturbance and stock defecation directly into water.

Actions undertaken through the Water Accord are likely to be contributing to the measurable improvements in key water quality indicators as summarised in Land, Air, Water Aotearoa's (LAWA) most recent analysis of national river quality trends from 2008

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to 2017, which showed that for eight out of nine water quality indicators reported on, *more* monitored sites were improving than degrading.[1]

There are also numerous examples of where changes on farm in different regions have contributed to downstream water quality improvements. For example farmers in Taranaki have undertaken extensive riparian planting and fencing and this has contributed to significant water quality improvements at 27 out of 59 river sites monitored by Taranaki Regional Council based on long-term trends. No sites monitored by Taranaki Regional Council showed significant declines in quality.

In Canterbury, where dairy farming is a major land use, water quality is stable or improving at more sites than not . Dairy farmers have undertaken extensive fencing and riparian planting as well as improving their nutrient management practices as part of the Accord and Farm Environment Plan requirements.

There is also a lot of work occurring now on the ground by farmers working in collectives such as catchment groups, which will lead to improvements in water quality in the future. One example is in the Aparima catchment, in Western Southland where 608 dairy and sheep and beef farmers are working together with extension experts and scientists to identify, implement and track different act ons on farms and how these affect water quality outcomes. Currently around half of the farmers in the catchment have completed Farm Environment Plans, and all farmers in the catchment area will have a plan by June 2021. The plans provide a farm specific guide on how to mitigate the potentially negative environmental effects of farming activities, with a focus on targeting the main issues in a specific catchment.

3. How many dairy farms are covered by the Accord?

Approximately 11,079 New Zealand dairy farms.

4. Why are farmers not fully compliant for effluent management in some regional counc l areas?

Nationally, 94% of dairy farmers were compliant with effluent requirements, but we recognise that there is still more work to be done to improve effluent management.

The ways that each regional council monitors and assesses effluent management can vary, but the focus is always on best practice. Nationally, 12,295 farms were monitored in 2017/18 and significant non-compliance was 6.1%.

The most recent audit data showed that farmers in Tasman and Marlborough were 100% compliant with effluent requirements, and farmers in Taranaki, Canterbury, Otago and Southland also achieved very high levels of compliance. We acknowledge that a minority of farmers in some regions – like Northland and Waikato – need to lift their

[1] https://www.lawa.org.nz/explore-data/river-quality/#/tb-national

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game to ensure they are managing their effluent appropriately, and DairyNZ will be supporting the dairy companies are doing to support farmers to improve their effluent management. We want to continue to improve farmer performance and are achieving this through with new technology, accreditation, WOF and training programmes.

5. Are the reported numbers independently audited?

For the 2017/18 season, three specific areas were independently audited – these were nutrient management, water use management and dairy farm conversions. These areas were audited by TELARC. Results for other targets were similar to previous years which were also audited by TELARC. For the 2017/18 season, the audit focus was on the areas that were least advanced and therefore had most work to do.

6. What is planned now that the Water Accord is complete?

The Water Accord was intended to span five years. Through the Dairy Tomorrow Strategy, dairy farmers have made a strong commitment that they will continue to work with communities, councils and government to lead work to improve waterways.

Dairy Tomorrow will provide a more comprehensive framework for monitoring progress and aims to build and improve on the Accord.

Importantly, the monitoring and reporting framework under *Dairy Tomorrow* will focus on measuring water quality outcomes (not just farm scale inputs, although they will certainly continue) The new framework will help farmers to prioritise their efforts for water quality outcomes, rather than simply applying a one-size-fits-all approach. In doing so, the new framework help work towards meeting community aspirations for swimmable water.

7. **Some Accord target haves not been met. What is being done about this?**

While we have not reached 100 percent compliance with the goal of having nutrient management data collected from 100% of accord farms, data was collected from 94% of accord farms. 100% of these farms received nutrient performance and benchmarking information.

As part of the Accord we aimed to achieve 100% stock exclusion of all significant wetlands identified by regional councils by 2014. It has not been possible to report on this target as councils have different definitions of what a significant wetland is, and different approaches to identifying and reporting on significant wetlands.

There are two further goals which have target dates of 2020 and are still in progress – that 85% of dairy farms will have water meters installed by 2020 (54% in 2017/18); and all farms requiring a riparian management plan will have completed half of their riparian plan commitments by 2020. These targets remain and the sector will continue to strive to achieve them.

One key learning from the Accord has been around setting meaningful goals and targets and reducing ambiguity or the ability to interpret them in different ways. Learnings from

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the Accord will help improve the way the sector measures, records and reports under *Dairy Tomorrow*.

ABOUT THE WATER ACCORD

The Sustainable Dairying: Water Accord is a set of good management practices aimed at lifting environmental performance on dairy farms. It included commitments to targeted riparian planting plans, effluent management, comprehensive standards for new dairy farms and measures to improve the efficiency of water and nutrient use on dairy farms.

It was launched in 2013 and is a partnership between DairyNZ, most of New Zealand's dairy companies, and supporting partners.

For further information on the Sustainable Dairy/Water Accord and to download a copy of the Five Year Progress Report and Summary, visit:
dairynz.co.nz/wateraccord

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Andre Silveira

From: Tanya Cornwell <Tanya.Cornwell@dairynz.co.nz>
Sent: Wednesday, 10 July 2019 9:52 AM
To: Alister Body; s 9(2)(a) ; David Burger; s 9(2)(a) Martin Workman; MBIE (Max.Kennedy@mbie.govt.nz); s 9(2)(a)

Subject: Water Accord year 5 report - for review
Attachments: water accord progress report_5 years on_DNZ40_011_2.pdf

Importance: High

Tēnā koutou

Please find the attached Sustainable Dairying: Water Accord year 5 report for your review.

I kindly request that your comments, edits, etc. are submitted back to me in one document. This will ensure feedback isn't overlooked, and it will make the incorporation of edits more efficient.

As mentioned during the last DELG meeting, TELARC will need to review our final product before they will sign it off. They have schedule their review of the report for the 16th and 17th Jul. Therefore, we kindly request to receive your feedback by **10am Tuesday, 16 July**. I do understand this is a tight turnaround; this will enable us to achieve our public release target of the end of the month. We greatly appreciate your diligent attention on the final report.

Ngā mihi nui

Tanya Cornwell
Kaitohutohu kaupapa here matua - Senior Policy Advisor
Policy & Advocacy
Responsible Dairy Group

DairyNZ
Te Whanganui-a-tara
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Mob +**64 27 239 8468**
Web www.dairynz.co.nz | www.GoDairy.co.nz | www.getfresh.co.nz

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Andre Silveira

From: Caroline Hart <Caroline.Hart@ecan.govt.nz>
Sent: Friday, 1 March 2019 11:50 AM
To: Nick Vincent; Roger Bannister; Martin Workman
Subject: Wellington visit 12 March

Kia ora koutou

I will be in Wellington on Tuesday 12 March and thought I would see if there might be an opportunity to touch base while I am there. A few matters that I thought we could usefully discuss:

- follow up on the Ministers meeting with CCC and ECan Councillors
- update on the CWMS Fit for the Future project which is nearing completion
- update on the Essential Freshwater programme including the At Risk Catchments work
- MfE views on the PCE report on Overseer and any next steps

Please let me know if you have time in your diaries for a meeting and I can make my way Kate Sheppard Place. I have several commitments between late morning and mid-afternoon but good availability either side of that at this stage.

Ngā mihi

Caroline

Caroline Hart
Programme Manager
Environment Canterbury

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Hon David Parker
Private Bag 18888
Parliament Buildings
Wellington 6160

Friday July 12, 2019

Dear Ministers,

In 2018, concerns were raised about winter grazing practices on dairy, beef and sheep land in Southland and South Otago.

In response, DairyNZ, Beef + Lamb New Zealand and Federated Farmers have implemented collaborative programmes to encourage and promote good wintering practices on all farms, through a pan-sector approach.

Our organisations are firm in the view that poor winter grazing practices are unacceptable, due to the impact on soils and water quality, and can also lead to poor animal welfare outcomes.

Work to support good winter practices on farms includes:

- developing good practice wintering guidelines which support water quality protection and animal welfare. Farmer resources now span the full winter cycle from the paddock/crop selection period through to post-cropping.
- implementing farmer-facing extension programmes to raise awareness and drive adoption of improved practice standards which protect the environment and provide for animal health and welfare.
- a comprehensive campaign this winter. It includes regular information and advice to farmers about good winter grazing practices, shared through social media, newsletters and regular events, as well as media stories and video.
- delivery of a new Beef + Lamb New Zealand winter grazing workshop (that covers the entire year) developed following consultation with NGOs, MPI, MfE and regional councils.
- rollout of a DairyNZ wintering resource to all Southland dairy farmers, to support on-farm decision-making and winter management, along with extra farmer-facing events promoting good practice.
- the red meat sector has already rolled out its New Zealand Farm Assurance Programme and is finalising a new higher 'platinum' tier to it, which would set best practice requirements for crop and winter management.
- DairyNZ developed a holistic Farm Sustainability Plan that captures the elements of our sector's *Dairy Tomorrow* strategy to encompass animal care, environmental stewardship, workforce capability and maintaining a resilient, sustainable and profitable sector.

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- working with the Ministry for the Environment to assist with developing national regulations for wintering practices.
- encouraging our farmers to call out poor winter grazing practices, as demonstrated by our recent joint media release.

We want to assure you that our organisations and the farmers we represent acknowledge the public's concern around winter grazing practices and we are committed to improving wintering practices across our sectors.

If you have any further questions we would welcome the opportunity to meet with you to discuss the challenges facing farmers, and the work we are doing to further support them.

More information on winter grazing can found at:

→ **beeflambnz.com/wintergrazing**

→ **dairynz.co.nz/wintering**

Kind regards,

Jim van der Poel	Andrew Morrison	Chris Lewis
DairyNZ	Beef+Lamb	Federated Farmers

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Andre Silveira

From: David Burger <David.Burger@dairynz.co.nz>
Sent: Tuesday, 30 July 2019 9:04 AM
To: Martin Workman
Subject: Wintering letter to Ministers
Attachments: Winter grazing practices letter to ministers 2019.pdf

Hi Martin,
See attached.
Regards,
David

David Burger PhD
Strategy and Investment Leader: Responsible Dairying
DairyNZ
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Ph +64 7 858 3750 | Mobile +64 27 838 6311
Web www.dairynz.co.nz

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From: Curtis Hammond
To: Andre Silveira
Subject: FW: Response to your Official Information Act request 19-D-01902 s 9(2)(a)
Date: Tuesday, 3 December 2019 10:20:18 AM
Attachments: 19-D-01902 s 9(2)(a) Response Letter.pdf
19-D-01902 s 9(2)(a) - material - second tranche - Final.pdf
List of documents - second tranche.pdf

From: Curtis Hammond
Sent: Tuesday, 15 October 2019 5:21 PM
To: s 9(2)(a) @forestandbird.org.nz
Subject: Response to your Official Information Act request 19-D-01902 s 9(2)(a)

Kia ora s 9(2)(a),

Please find attached the information for the second of three tranches as stated in our response of
4 October. This second tranche comprises 26 documents some of which are being released in
part. Please note:

1. One document is being withheld in part under section 9(2)(f)(iv) of the Act (to maintain the constitutional conventions for the time being which protect the confidentiality of advice tendered by officials).

    1.1 Ministers are yet to make initial decisions on the options to implement the Government's commitment to address nitrogen allocation issues.

2. One document is not released on the basis of section 18(d) of the Act (information requested is or will soon be publicly available). The list attached includes the website where the document is publicly available.

You can expect the final tranche on or before 25 October 2019.

Kind regards,
Curtis Hammond

From: Ministerials
Sent: Friday, 4 October 2019 5:15 PM
To: s 9(2)(a) @forestandbird.org.nz
Subject: Response to your Official Information Act request 19-D-01902 s 9(2)(a)

Kia ora s 9(2)(a),

Please find attached the first tranche of the response to your Official Information Act request dated 06 September. The Ministry intends to provide you the second tranche on 15 October and the final tranche on 25 October 2019.

Kind regards,
Curtis Hammond

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From: s 9(2)(a) @forestandbird.org.nz>
Sent: Friday, 6 September 2019 4:29 PM
To: Ministerials <ministerials@mfe.govt.nz>
Subject: OIA request

Executive Relations
PO Box 10362
Wellington, 6143.

Official Information request.

I would like to request all communications (emails, texts, meeting notes, agendas, notes of conversations, etc.) between Gerard Willis, Bryan Smith and Martin Workman of the Ministry for the Environment's water directorate and Federated Farmers, Fonterra, Dairy New Zealand, Environment Canterbury and Irrigation NZ, since 1st January 2019."

If you have any queries about this request please feel free to contact me for clarification.

Yours sincerely

s 9(2)(a)

Royal Forest and Bird Protection Society of New Zealand Inc.
Ground Floor. 205 Victoria Street . PO Box 631 . Wellington . New Zealand
DD 04 801 2215 . **M** 021 227 8420 .

You can join Forest & Bird at www.forestandbird.org.nz

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Ministry for the Environment
Manatū Mō Te Taiao

PO Box 10362, Wellington 6143
Website: www.mfe.govt.nz
Freephone: 0800 499 700

19-D-01902

s 9(2)(a)

Royal Forest and Bird Protection Society of New Zealand Inc.
s 9(2)(a) @forestandbird.org.nz

Dear s 9(2)(a)

Thank you for your email of 6 September requesting the following under the Official Information Act 1982 (the Act):

> *I would like to request all communications (emails, texts, meeting notes, agendas, notes of conversations, etc.) between Gerard Willis, Bryan Smith and Martin Workman of the Ministry for the Environment's water directorate and Federated Farmers, Fonterra, Dairy New Zealand, Environment Canterbury and Irrigation NZ, since 1st January 2019.*

Part of the information you have requested is enclosed. However, it will take us some more time to assess and prepare the remainder of the information for release. The information is thus being released in three tranches.

In this first tranche, the Ministry for the Environment is releasing 35 documents in scope of your request, as listed in the attached table. Some information within these documents has been withheld under section 9(2)(a) to protect the privacy of natural persons, including that of deceased natural persons.

One document related to DairyNZ's Water Accord year 5 report is refused for release on the basis of section 18 (d) - this information is available at https://www.dairynz.co.nz/publications/dairy-industry/sustainable-dairying-water-accord-five-years-on-report/.

The following table provides a timeline for the release of requested information

Tranches	By date	Action
Tranche 1	4 October 2019	Release of first set of documents (emails and attachments)
Tranche 2	15 October 2019	Release of second set of documents (emails and attachments)
Tranche 3	25 October 2019	Release of final set of documents (e.g. any relevant texts and meeting notes)

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Information in the second and third tranches may or may not be released in full. Information may need to be withheld or refused under:

1.1 Section 9 (2)(a) - to protect the privacy of natural persons, including that of deceased natural persons;

1.2 Section 9 (2)(f)(iv) - to maintain the constitutional conventions for the time being which protect the confidentiality of advice tendered by Ministers of the Crown and officials;

1.3 Section 9 (2)(g) – to maintain the effective conduct of public affairs through

(i) the free and frank expression of opinions by or between or to Ministers of the Crown or members of an organisation or officers and employees of any department or organisation in the course of their duty;

1.4 Section 9(2)(h) – to maintain legal professional privilege;

1.5 Section 18 (d) - the information requested is or will soon be publicly available.

In terms of section 9(1) of the Act, I am satisfied that, in the circumstances, the withholding of this information is not outweighed by other considerations that render it desirable to make the information available in the public interest.

You have the right to seek an investigation and review by the Office of the Ombudsman of my decision to withhold information relating to this request, in accordance with section 28(3) of the Act. The relevant details can be found on their website at: www.ombudsman.parliament.nz.

Please note that due to the public interest in our work the Ministry for the Environment may publish this on our web site on our OIA responses page shortly after the response has been sent to you.

If you have any queries about this, please feel free to contact our Executive Relations team.

Yours sincerely

Katherine Meerman
Director, Water Taskforce
Ministry for the Environment

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Note: due to file size, please email ministerials@mfe.govt.nz for copies of the documents released

DOCUMENT SCHEDULE

Sender	Recipient	Subject	Date	Decisions	OIA sections applied
bill.bayfield@ecan....	Vicky.Robertson@mfe...	Aligning consents with plans	12/04/2019 15:18	Released in full	
Attachment	licy paper – Aligning consents with new plan provisions and national direct			Released in full	
Andrew.Parrish@ecan...	martin.workman@mfe....	Appendix 4 of the NPSFM	8/08/2019 15:56	Released in full	
martin.workman@mfe....	bill.bayfield@ecan....	ECan attendee for impact analysis worksh	11/01/2019 10:28	Released in full	
Attachment 1	Agenda Essential Freshwater Advisory Groups Joint Workshop _ Impact Anal...			Released in full	
Attachment 2	Essential Freshwater - Assessing impacts of possible policy approaches			Released in part	9(2)(f)(iv)
martin.workman@mfe....	sam.mcivor@beeflamb...	Embargoed copy of Essential Freshwater D	3/09/2019 11:24	Released in full	
bill.bayfield@ecan....	martin.workman@mfe....	FW: CME report - for RCEO agenda	5/04/2019 11:30	Released in full	
Attachment 1	Regional Sector Letter to Minister Parker re CME report / 4 April 2019			Released in full	
Attachment 2	ıo - Regional Sector 2017/18 Compliance Monitoring and Enforcement Me			Released in full	
Attachment 3	IS messaging - 2017/18 Compliance Monitoring and Enforcement Metrics I			Released in full	
Attachment 4	Summary - REGIONAL SECTOR INDEPENDENT ANALYSIS - 2017/18 compliance monitoring and enfo			Refused	S 18(d)
https://www.lgnz.co.nz/our-work/publications/independent-analysis-of-the-20172018-compliance-monitoring-and-enforcement-metrics-for-the-regional-sector/					
martin.workman@mfe....	ESoal@irrigationnz....	FW: Meeting request from Harmonic Anal	6/05/2019 8:14	Released in full	
Attachment	- Moving the Majority: what will it take to get the majority of irrigators using technology to improv			Released in full	
Governance@ecan.gov...	martin.workman@mfe....	Letter re Office of the Attorney-General d	20/08/2019 15:59	Released in full	
Attachment	Letter re Office of the Attorney-General decision following Forest and Bird discontinued proceedings			Released in full	
ESoal@irrigationnz....	martin.workman@mfe....	Memo re Building Trust Project review	24/05/2019 13:27	Released in full	
Attachment		Review of 'Building Trust' project		Released in full	
louise.mcdonald@eca...	Governance@ecan.gov...	READ: Six month report to Ministers from	16/07/2019 16:27	Released in full	
Governance@ecan.gov...	Governance@ecan.gov...	Six month report to Ministers from Enviro	21/06/2019 16:23	Released in full	
Attachment 1	Letter_Environment Canterbury six month report to Ministers 21 June 2019			Released in full	
Attachment 2	Six month repor _Environment Canterbury report to Ministers 21 June 2019			Released in full	
Caroline.Hart@ecan....	Hayden.Johnston@par...	Water Forum (15 Feb) briefing material fo	13/02/2019 18:41	Released in full	
Attachment 1	Water Forum_Council briefing 15 February 2019			Released in full	
Attachment 2	Water Forum_9 Joint ECan CCC Water Forum FAQs			Released in full	

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Andre Silveira

From: Bill Bayfield <bill.bayfield@ecan.govt.nz>
Sent: Friday, 12 April 2019 3:18 PM
To: Vicky Robertson; Martin Workman
Cc: Cameron Smith
Subject: Aligning consents with plans
Attachments: Aligning consents with plans.docx

Hi

Attached is the work we have been doing with regard to better aligning consents with the NPSFM and regional plans, and some ideas for RMA changes. This will be presented to our Council next Thursday.

Cheers
Bill

Bill Bayfield
Chief Executive
Environment Canterbury

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Facilitating sustainable development in the Canterbury region ecan.govt.nz

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Policy paper –

Aligning consents with new plan provisions and national direction

Purpose

1. The purpose of this paper is to:

   a) set out the challenges that arise when resource consents issued under old planning documents are misaligned with current plan provisions and national direction;

   b) describe the mechanisms available to councils to align these consents with current plan provisions (and their limitations), and

   c) identify solutions for transitioning these consents to align with new plan provisions.

2. This paper is presented from the perspective of Environment Canterbury, a regional council responsible for completing plan changes to implement the National Policy Statement for Freshwater Management (NPSFM). Our analysis looks beyond the setting of limits to the practical steps that will be required to achieve environmental gains. Our goal is to apply those limits "on the ground" through consent review processes that are efficient and fair.

3. Responding to this issue is challenging, and any response will ultimately need to find the appropriate balance between achieving NPSFM outcomes and managing the impacts on existing consent holders. To mitigate these impacts, transitioning consent holders to new plan provisions is important – this paper looks at options for transitioning over time, however other mechanisms, and particularly financial compensation, may offer a way to reduce the economic impacts on land owners.

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Problem definition

Our plans include a framework and limits to achieve community outcomes and implement the NPSFM, but not all resource consents automatically reflect this framework.

4. Across Canterbury most surface water allocation zones are either fully allocated or over allocated, a situation mirrored in the groundwater allocation zones. In areas where sub-regional planning has occurred it is clear that many of these areas are not achieving water quality outcomes, in part due to a legacy of historic development.

5. Over the past 10 years Environment Canterbury and its communities have invested significant time into developing a statutory planning framework, the Canterbury Land and Water Regional Plan (LWRP), to implement the NPSFM and deliver community aspirations for water quality and quantity in both urban and rural areas. Consequently, our plans now include strict nutrient discharge limits and environmental flow regimes.[1]

6. While our regional plans provide a clear direction on how land and water are to be managed in Canterbury, it is the resource consent (and not the plan) which details the restrictions and limits that apply to a specific consent holder undertaking a particular activity.

7. Resource consent holders must comply with the conditions included in their consent. Consents issued today will include conditions consistent with new regional plans, while consents issued under previous plans will reflect the planning framework in place at that time and our understanding of the potential environmental effects of the activity at that time. As a consequence, through no fault of their own, many consent holders are adhering to limits or restrictions that are not aligned with current plan outcomes.

8. In addition, many early consents were issued at a time when demand for our natural resources (and particularly water) was lower, and without the current level of understanding about cumulative environmental effects. For these reasons early resource consents were often granted with long durations. Until the late 2000's many resource consents were issued with 35 year durations, the maximum allowed under the RMA.

9. This practice has changed, and now Environment Canterbury generally limits the duration of a water permit to between 5 and 15 years to enable earlier alignment with new plan provisions. Common catchment expiry dates are also being tested in the Waimakariri Catchment, where all consents would expire 15 years after the sub regional section of the LWRP becomes operative.

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[1] Consistent with the NPSFM, environmental flow regimes for rivers in Canterbury include a combination of instantaneous flow that may be abstracted, and minimum flows, a trigger level at which water take consents must cease their abstraction. Our regional plans also require partial restrictions which require abstractors to progressively reduce their takes as flows drop down towards the minimum flow. Groundwater allocation limits are based on a total annual quantum of abstraction that may occur

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10. If the majority of existing consents are left unchanged through to expiration, the ability for our statutory planning framework to deliver on the NPSFM and community aspirations is muted. The implications of this are visible when looking at particular catchments, such as the Ashburton/Hakatere River catchment (Table 1).

Table 1. Surface Water Permits in the Ashburton/ Hakatere River Catchment

Total number of surface water permits in the Ashburton /Hakatere River Catchment	114
Number of consents with a minimum flow condition consistent with the LWRP	2
Number of consents with a minimum flow condition not consistent with the LWRP	43
Number of consents without a minimum flow condition	69
…and of these 69 consents without a minimum flow condition:	• one expires before 2023, • 27 expire between 2023 and 2033 and • 41 between 2033 and 2043.

11. These numbers show that:

- 112 out of 114 water permits are not aligned with the LWRP minimum flow
- it won't be until 2043 that all consents are likely to have a minimum flow condition (in the absence of consent reviews)
- some of these consents will also be in place through the next two iterations of the regional planning framework
- there is likely to be considerable disparity in how similar activities are controlled through consent conditions (43 have minimum flows, 69 don't), and
- the catchment will remain over-allocated without a significant intervention and environmental gains sought by the NPSFM won't be realised for some 24 years.

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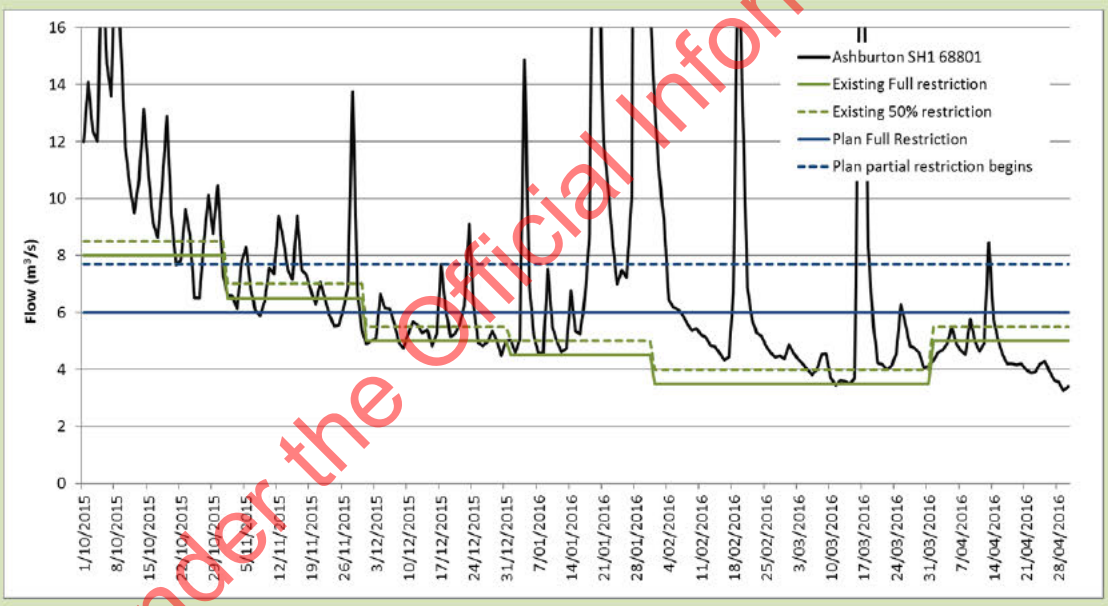
Why this is a problem – achieving environmental outcomes via minimum flows in the Ashburton/ Hakatere River Catchment

The graph below illustrates how minimum flows have been adjusted in the Ashburton/ Hakatere River Catchment to improve environmental outcomes. Through the planning process for the Ashburton River/Hakatere Chapter of the LWRP, Environmental Flows and Allocation Limits were set for the mainstem and several tributaries. A minimum flow of 6 cubic metres per second (measured at State Highway 1) was identified as the critical flow to improve the health of the river mouth and overall water quality. As a result, new LWRP-consistent limits (shown in blue) are higher most months than pre-LWRP limits (shown in green).

While these minimum flows have been raised to achieve the freshwater outcomes being sought for the river, pre-LWRP consents constrain our ability to deliver this on-the-ground. New consent holders will face a partial restriction triggered when the river flow drops below 7.7 cubic metres per second, and full restriction at 6 cubic metres per second. However, pre-LWRP limits mean many consent holders only face partial restriction when the river flow drops below 4 cubic metres per second, with full restrictions at 3.5 cubic metres per second (for the months of February and March).



12. While catchments across Canterbury face their own unique challenges, the Ashburton/ Hakatere River catchment is by no means atypical. There are a number of over-allocated catchments in Canterbury which face similar issues.

13. The current system also creates fairness concerns. It's not uncommon for two adjacent landowners undertaking the same activity to have consent conditions with vastly different levels of stringency or restriction. This occurs solely because resource consents have been granted at different times, under different plan frameworks. This means that when more stringent minimum flow conditions are placed on some, but not all consents, it perversely increases the reliability (and value) of consents with less stringent conditions and provides no environmental gain.

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14. For example, Consent Holder A will be required to cease taking water when the flow in a river drops to an LWRP consistent minimum flow, while Consent Holder B is entitled to continue to abstract below the LWRP minimum flow and must only cease abstraction once the flow reaches the limit specified on the consent (which will be consistent with a pre-LWRP plan).

15. For any given river, it is likely there will be a combination of pre-LWRP and more recent resource consents that allow the abstraction of water. The lack of a level playing field means:

    - the environmental outcomes sought through the NPSFM and the LWRP are not achieved
    - perceptions of unfairness, leading to conflict in local communities
    - Water User Groups, which help water users work together to "share" available allocation to achieve maximum benefit for the community, are more difficult to form, and
    - attempts to achieve greater water use efficiency across all water users are frustrated.

16. These issues will continue to persist because of an inability to efficiently and fairly align all consents to new plans. It's important to note that this disconnect between old consents and new plans is not new and is largely a consequence of RMA design. Regional plans set objectives and rules with a 10 year term, while a resource consent can be issued for a period of up to 35 years.

Mechanisms for aligning existing consents with environmental limits in current plans are prohibitively costly and time consuming

17. Aligning consents with new regional plans requires care. Holders of resource consents, whether they were issued 20 years ago or two years ago, have acted lawfully in obtaining the necessary consent to carry out their activity, must adhere to the conditions included in their consent, and these conditions have informed long-term investment decisions made by consent holders.

18. Mechanisms for aligning consents should, therefore, enable plan outcomes to be achieved efficiently, should seek to provide regulatory predictability, and be fair – mechanisms should allow recognition of the circumstances of individual consent holders and, where justified, provide a pathway for transitioning to new plan provisions.

19. Section 128 of the RMA outlines the circumstances in which the conditions of a resource consent may be reviewed:

    i. Where there are unforeseen or concerning adverse effects on the environment that we wish to address (s.128(1)(a)); and
    ii. Where a regional plan has been made operative and it is necessary to review the consent to implement the levels, flows or rates set by the rule (s128(1)(b)).

20. Councils therefore have the ability to review existing consents to align them with updated planning frameworks. However, there are significant challenges associated

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with this process. Through plan development and plan change processes, rules (e.g. minimum flows) will be debated and settled, and these will apply across the region or to specific catchments. Yet each consent review process will then debate whether or not these limits should apply to individual consents. This disincentivises active participation in the broader limit setting process and instead encourages property-by-property debate (and incurs significantly more costs to councils).

21. The cost of undertaking a plan change to develop a sustainable minimum flow and water allocation regime and nutrient limits which achieve community outcomes is generally between $2 and $4 million[2]. This process includes setting (and debating) minimum flows with the community, including consent holders. A consent review process for a group of consents can cost up to $1.5 million, is time-consuming, and will often involve the re-litigation of the issues debated within a plan change process on a consent-by-consent basis.

22. Given the need to manage within a limited budget, this results in the Council having to make difficult trade-offs between continuing to develop and improve the LWRP regulatory framework or to review some consents to align with the currently operative LWRP.

23. While costs can be recovered from the consent holder for reviews to address adverse effects (section 128(1)(a)), for reviews to implement operative plans the cost sits with the consent authority. Our experience shows these costs can be significant, and the recorded costs are often conservative – they don't reflect the upfront costs associated with engagement, nor do they reflect the large amount of political capital required to get consent review programmes agreed to and implemented.

24. Consent reviews incur significant costs because the procedural requirements for initiating, notifying and reviewing a consent are similar to those for considering and deciding an application for resource consent. In particular, the same provisions in the RMA which relate to public notification, submissions and hearings apply to consent reviews. These processes can be costly, particularly where a hearing of the consent review is required.

25. Costs vary depending on the nature of the consent review programme and the willingness of consent holders to participate in this – we estimate that costs can range from between $1,000 and $10,000 per consent. This is a combination of Goods and Services and staff time.

26. Some examples of recorded costs of consent reviews are included in Table 2.

[2] These 'reduced' costs reflect our experience of plan changes with no rights of appeal to the Environment Court due to the Environment Canterbury (Transitional Governance Arrangements) Act 2016 and more recently the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010. We expect these costs will increase considerably when the Environment Canterbury (Transitional Governance Arrangements) Act 2016 expires in October 2019.

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Table 2. Costs associated with consent reviews

Consent review programme	Cost	Process followed	Degree of difficulty
500 consents in the Rakaia-Selwyn Catchment (2006 - 2010)	Total cost of $1.35 million $1.86m in 2018 dollars	Section 128(1)(a)	High – large number of consent holders, review was to deal with a contested adverse effect, mixed community buy-in
22 consents in the Pareora catchment and 5 in the Maerewhenua catchment (2015/16)	Total cost of $24,000	Section 128(1)(b)	Low – small number of consent holders, good community buy-in
Meridian Energy Limited's Waitaki Dam consent and those of 74 downstream abstractors (2017)	Total cost of $72,000 – with a contribution by Meridian Energy	Section 128(1)(b)	Low – good community buy-in

27. Due to these costs Environment Canterbury's ability to review pre-LWRP consents at the scale needed to make significant change across Canterbury is limited. The Consents Section has a standing budget of $60,000 per year to review resource consents, and with approximately 5,000 water permits across Canterbury, this is clearly inadequate. In the most recent Long Term Plan (LTP) around $250,000 in year one was diverted from the Fresh Water Planning budget to speed a review of consents in the Ashburton Catchment simply as part of a pilot project. Most of this funding will be spent on preparing for the consent review process – informing the community of the impacts of proposed changes to minimum flows as a result of the review process.

28. All-in-all, the costs associated with reviews, balanced against other demands, means that the Council has capacity to undertake only a limited number of reviews per year. This therefore limits the effectiveness of our plans in delivering on the NPSFM and community aspirations and, in practice, once a resource consent is issued the conditions of the resource consent generally remain unchanged until the consent expires (excepting applications by the consent holder to vary conditions under section 127 of the RMA).

Further limitations on reviews

29. Additional limitations restrict what may be achieved through a consent review process. While applications for a new resource consent may be refused if the effects of an activity are unacceptable, consents which are reviewed cannot be cancelled, nor can the duration of the consent be altered.

30. Furthermore, section 131 of the RMA directs that a consent authority must, when reviewing the conditions of the consent have regard to whether the activity will remain viable after the change. This obligation can frustrate a council's ability to deliver plan outcomes as consent holders often argue that the costs of compliance with a new limit

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are prohibitive. While viability is important, the RMA could be clearer that viability should be balanced with achieving plan outcomes.

31. Additionally, section 131 implies an obligation to have regard to the viability of each individual consent holder, i.e. a council can't treat consent holders as a group when considering the impact of bringing consent conditions into line with new planning requirements. This further limits our ability to expedite reviews.

What is required to overcome this issue?

32. An important objective of regional planning frameworks is to implement national direction, and particularly the NPSFM. To achieve this, the RMA regulatory framework needs to provide mechanisms to efficiently and fairly align resource consents to new plan provisions that also bear in mind the economic impact of doing so.

Any new mechanism(s) should be based around key principles

33. It's important that any new mechanism(s) are designed so that they balance the following:

    a) **Effective**: consents should give effect to the NPSFM and regional planning documents (and the outcomes and limits set within these)

    b) **Efficient**: costs to parties should be minimised, including to consent holders

    c) **Equitable**: the disparities in conditions for consents in catchments with similar effects should be reduced

    d) **Preserves natural justice**: the process should be fair and guarantee the right to be heard and the right to respond

    e) **Provides regulatory predictability**: provides regulatory predictability in order to inform investment decisions

    f) **Considers viability:** the process allows for the consideration of the impact on the viability of existing activities.

Possible solutions

34. We have identified two new mechanisms that warrant further investigation (and more are likely to exist):

    1: Amend the RMA to enable automatic updates of consents

    2: Enhanced consent review process in over-allocated catchments.

35. Other solutions were considered but discounted:

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- Increased taxpayer funding of reviews under the existing consent review framework (the process remains inefficient, while costs and timeframes are likely to be unacceptable)
- Amend the RMA to enable cost recovery for all consent reviews (the process remains inefficient, and raises fairness issues around cost-sharing)
- Cancel existing consents in over-allocated catchments and have parties apply for a new consent (this is considered too blunt and raises fairness issues).

36. A key component of both options below is the continued need to increase the rigour applied to regional plan development. This includes front-loading collaboration with communities and better assessing the impacts of proposed plan provisions on the community so that the costs and where these will fall are better understood. Developing a focused implementation approach at the point of plan development also enables visibility over how a plan will be delivered on-the-ground (including how those parts of the community most impacted will be supported to transition to new plan provisions).

1 – Amend the RMA to enable automatic updates of consents

37. **Description**: Make amendments to the RMA to require existing resource consents to be automatically updated with the limits in an operative plan.

38. These amendments could be worded to stipulate that new limits will apply to existing resource consents no less than six months from the date the plan is made operative, unless an alternative timeframe is specified in the plan (where justified this could be extended to, for example, five years). This would expedite delivery of outcomes and through updating consents across a catchment this will significantly reduce the disparities in conditions for similar activities.

39. This mechanism would front-load the conversation at the plan-making process, which we consider the appropriate time and place to have a discussion on the appropriateness of limits. While we acknowledge this would increase plan-making scrutiny, debate and costs, this process allows for the views of the entire community (resource users, wider public) to be canvassed and considered. Relitigating limits at the time of consent application or review is costly, and the ability of the community to have their say on the appropriateness of a limit is constrained – public participation only occurs where notification thresholds are met.

40. The consent review process itself would become largely administrative and involve the updating of consent conditions to align with plan provisions. This would be undertaken at either six months after the plan becomes operative, or at a timeframe specified in the plan.

41. To preserve plan outcomes, appeals at the point of consent review should only be applicable to timeframes for implementing the new limits, with no ability to appeal the limits themselves. Providing an avenue for a consent holder to appeal timeframes for implementation of new limits enables the individual circumstances of the consent holder

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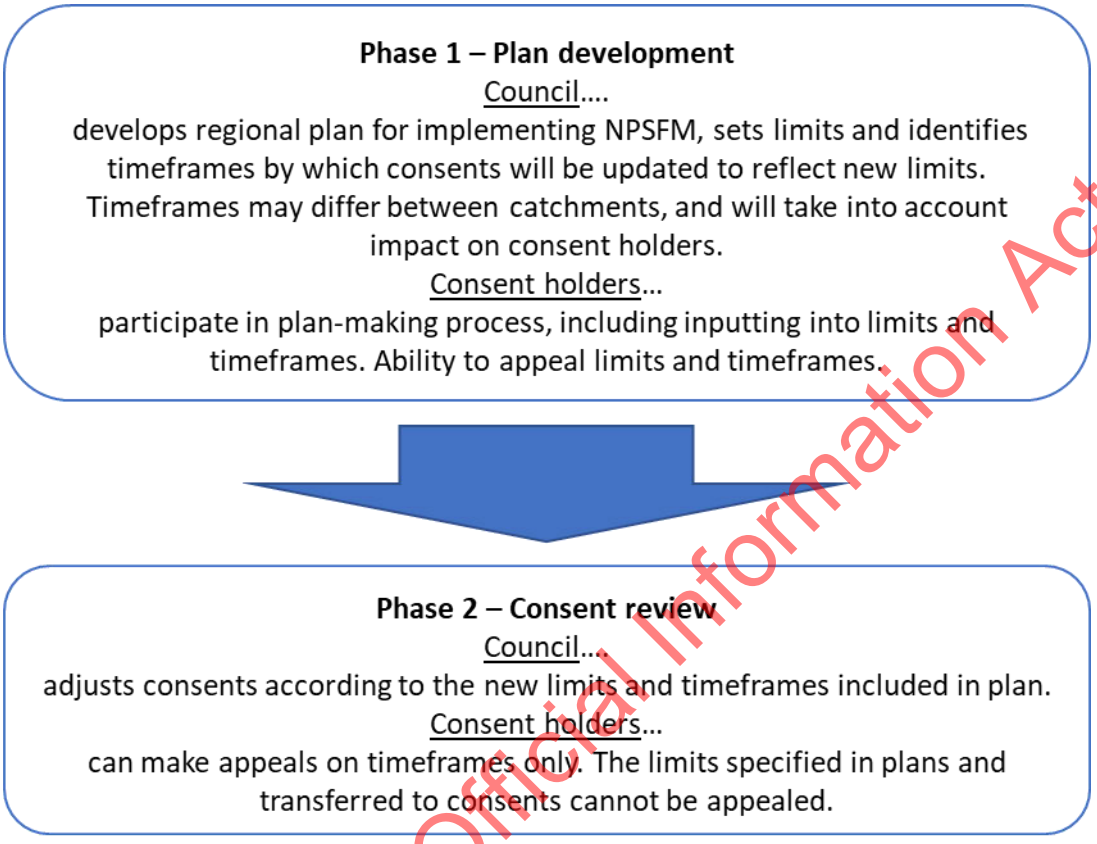
to be considered. The ability to appeal limits will continue to exist at the plan making stage.

42. The below table illustrates the phases and roles of relevant parties under this approach:



43. Natural justice is preserved through the ability for parties to input into and appeal plan rules and limits at the point of plan development, and appeal rights would still be available to affected consent holders in respect of the timeframes for implementation of the limits at the point of consent review. This process would also enable assessment of whether the activity will remain viable after the change (although viability shouldn't be protected at all cost).

44. If this option is followed it is applied only to plan changes or plans developed after the RMA is amended so that existing consent holders have an opportunity to participate in the plan development process.

45. The cost of the review process under this mechanism will be significantly lower. The costs would shift from the point of numerous consent reviews to the point of regional plan development, while the debate on limits is constrained to the plan making process. The costs would be distributed across ratepayers (for plan development) and consent holders via engaging with plan development and through any appeal on new plan provisions.

46. The effectiveness of this option at aligning all consents across the region in the short term would be determined by plan-renewal timeframes. To preserve natural justice this

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option would not apply to existing plans, so it would take effect only when new regional or sub-regional plans are developed. In Canterbury the region-wide LWRP is due for review in 2023, while the sub-regional sections will be due for review at different times depending on when these became operative.

47. Both this and the following option negatively impact on regulatory predictability for pre-LWRP consent holders with long-term consents. It's challenging to improve predictability when undertaking a process to review and change existing consent conditions, and balancing regulatory predictability with giving effect to the NPSFM and regional plans appears to be the biggest trade-off under both options. Predictability is less of an issue for consent holders whose consents expire in the short-term, and/or those issued consents for 10-15 years as per current practice.

2 – Enhanced consent review process in over-allocated catchments

48. **Description:** Make amendments to the RMA to provide powers to councils to undertake an enhanced consent review process in over-allocated catchments. The council would appoint an independent panel of Commissioners with powers to review the resource consents in that catchment. The existing consent review process would apply to all other catchments.

49. The key change that this option would bring about is limiting the elements which can be considered by the independent panel. Under this option the panel would determine when consent holders would be required to align with the new limits (up to a maximum of, say, 10 years where justified), and may set a stepped pathway for graduating to those limits. The panel would not be able to adjust the limits set out in plans.

50. This would limit the debate at the point of consent review to an economic assessment of a consent holders' ability to meet new limits within given timeframes. This assessment would take into account, for example, farm debt, existing infrastructure investment and progress towards achieving GMP. Debates on limits that are held at the point of plan development wouldn't be revisited. We expect this would narrow the debate at the point of consent review and as a consequence reduce time and costs.

51. This option would enable the delivery of outcomes to be expedited in the most in-need catchments (taxpayer funding could also augment ratepayer funding to further speed the consent reviews across over-allocated catchments). It would also significantly reduce the disparities in conditions for similar activities within those catchments. Much like the previous option, it would promote participation (and increase costs) at the plan development stage where limits are set, especially for those holding consents in over-allocated catchments, and remove ongoing and repeated debates around appropriateness of limits.

52. The below table illustrates the phases and roles of relevant parties under this approach:

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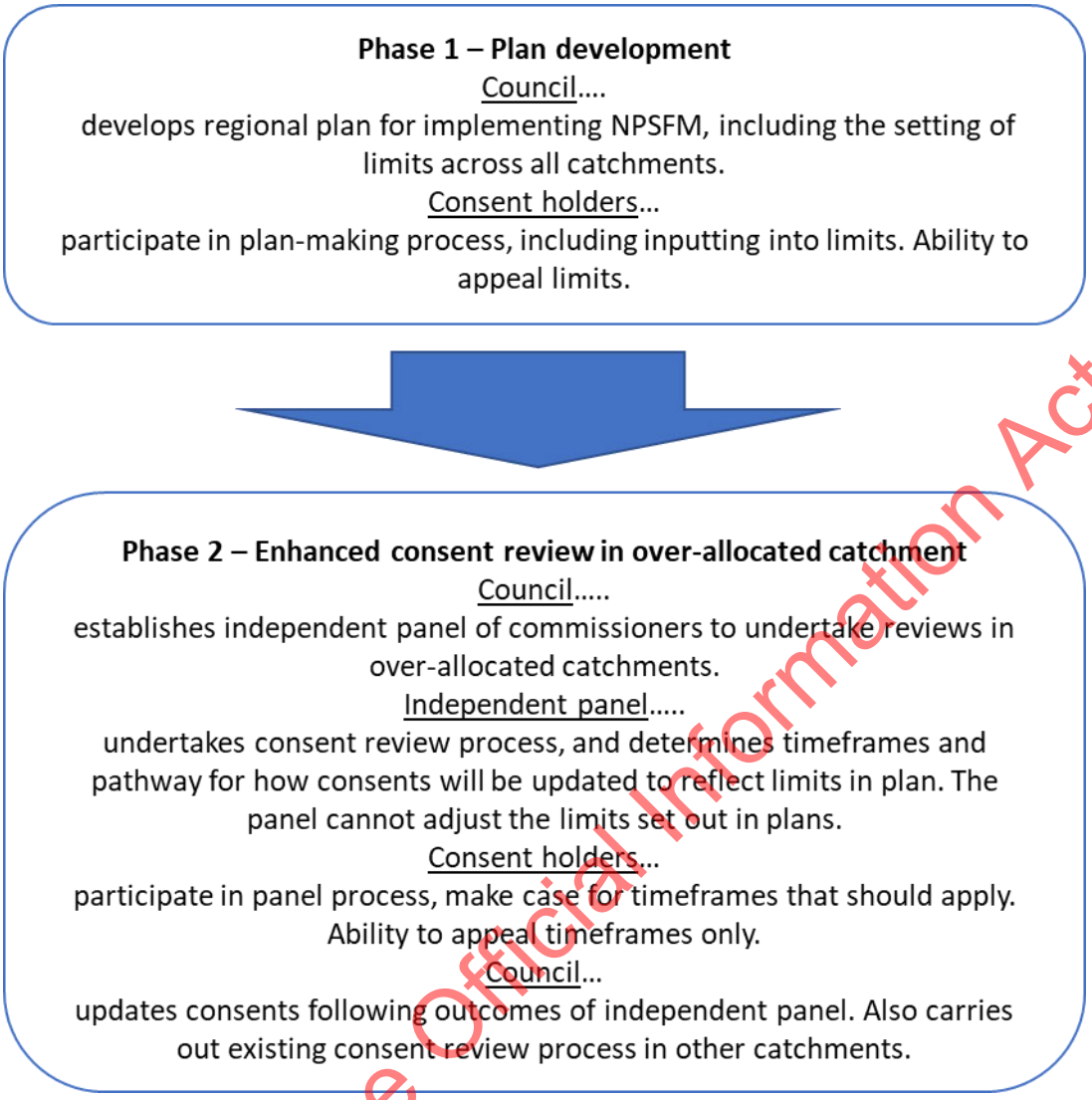

53. The review mechanism would preserve natural justice but, like option 1, is likely to raise issues associated with regulatory predictability for consent holders, but only for those in over-allocated catchments.

54. Importantly, some of the challenges outlined earlier would continue to be faced in catchments not reviewed – equity concerns would remain, the consent review process would remain inefficient for these catchments and not all consents would give effect to the NPSFM.

55. An advantage of this option is that it could be applied to existing plans which have been developed since 2011 and the development of the first National Policy Statement on Freshwater Management. Natural justice is preserved as the impacts on individual consent holders can be considered by the independent panel.

56. Under this option appeal rights would exist for consent holders not happy with the outcome of the review process undertaken by the independent panel. Appeal rights would be limited to the timeframe when the limits are applied. There would be no appeal rights on the appropriateness or not of the limits themselves.

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57. Who pays for the independent panel and the administrative costs of updating consents should be considered. There is a significant public benefit to the improved environmental outcomes, but the consent holder receives and has received benefit from their activity. If the review process was partially taxpayer funded, NPSFM outcomes would be expedited but this would also carry a significant taxpayer cost if undertaken across all over-allocated catchments across the country.

Conclusion

58. Both of these options more effectively speed the alignment of resource consents compared to the status quo, and ultimately increase delivery of the NPSFM outcomes. What's more, they preserve natural justice and enable equity concerns to be addressed across all catchments (option 1), or in over-allocated catchments (option 2). It may be that a combination of option 1 and 2 is the most efficient and effective solution, allowing option 1 to be used as an ongoing permanent solution, with option 2 used to prioritise action in over-allocated catchments.

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Andre Silveira

From: Andrew Parrish <Andrew.Parrish@ecan.govt.nz>
Sent: Thursday, 8 August 2019 3:56 PM
To: Martin Workman
Cc: Bill Bayfield; Cameron Smith; Caroline Hart
Subject: Appendix 4 of the NPSFM

Hi Martin

I understand Bill Bayfield spoke to you yesterday about appendix 4 to the NPSFM and the inclusion of ICOLLs like Te Waihora.

I thought it prudent to follow up with a quick email

- The 2017 amendments to the NPS-FM clarified that Intermittently Open and Closed Lakes and Lagoons (ICOLLs) are included in the National Objective Framework (NOF) for freshwater lakes.
    - At the time ECan had recently made operative Plan Change 1 to the Land and Water Regional Plan which set outcomes and targets for the Selwyn Waihora Catchment which gave effect to the 2011 NPS and the 2014 NPS but did not align with the national bottom lines established in the 2017 revision of the NPS.
    - PC1 was developed to give effect to the outcomes expressed in the Zone Implementation Programme Addendum developed by the Selwyn Waihora Zone Committee – a committee of 15 with 5 papatipu Rununga Representatives, 7 community representatives alongside a representative from Selwyn, Christchurch and Environment Canterbury.

- To achieve NPS-FM objectives for Te Waihora we estimate an ongoing economic cost of approx. $300m per year under a land use change scenario or a one-off $373m cost under a wetland construction scenario.
    - The Zone Committee had considered carefully the economic impact and the timeframe required to achieve their outcomes.
    - This was tested through a pubic RMA decision making process with independent Commissioners chaired by a former Environment Court Judge.

- Where it is difficult for water bodies such as ICOLLs like Te Waihora to meet national bottom lines, the NPS-FM currently allows communities to set water quality objectives below a national bottom line temporarily, provided the water body is listed in Appendix 4 of the NPS-FM.
    - Appendix 4 is currently blank – but serves a critically important purpose in the NPSFM framework
    - Environment Canterbury suggested to include ICOLLs like Te Waihora in the NPSFM 2014 (rev 2017) at the time the 2017 revision to the NPS was developed.
    - Environment Canterbury has also raised the concern with ICOLLs and Appendix 4 with current coalition government ministers
    - The need is still present for a tool such as Appendix 4 mechanism to support local decision making while providing firm direction that degraded water quality must be improved to achieve national and community outcomes over time.

Happy to discuss further with you if this would be helpful

Kind regards

Andrew

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Friday, 11 January 2019 10:28 AM
To: Bill Bayfield
Cc: Lucy Bolton
Subject: ECan attendee for impact analysis workshop

Hi

As discussed we are running a workshop with representatives from our advisory groups to help develop and test the impact analysis we propose for the Essential Freshwater package. Vaughan Payne says he is seeing if Mike Scarsbrook can attend from his council. Jon Roygard is attending.

The workshop is on Thursday 17 January 10am - 4pm at MfE Wellington. We will run through the different policy proposals that we are looking to include in the Essential Freshwater package and the impact analysis to support these proposals. This includes analysis that has been done, that we propose to do, and where we see some of the gaps could be. This impact analysis will cover social, cultural, environmental and economic impacts. We will be seeking input from attendees on priorities for the analysis work and suggestions for how best to do the analysis building on existing work given limited time.

We will send out the agenda and papers today. So let me know if anyone can attend from ECan.

Thanks

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries
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Essential Freshwater Advisory Groups Joint Workshop – Impact Analysis

17 January 2019

Rooms 1C, Environment House, Kate Sheppard Place

Attendees:
From FLG: Nicola Shadbolt; Marnie Pricket
From KWM: Kingi Smiler; Tanira Kingi; Paul Morgan
From STAG: Adam Canning; Bryce Cooper; Jon Roygard
From Regional Council Sub Group: Douglas Leeder; Mike Scarsbrook; ECAN representative (tbc)
Apologies:
Gary Taylor; Andrew Robb; David Mcleod
From MfE:
Martin Workman (facilitator/chair); Jo Burton; Peter Nelson; Stephen Fragaszy (note taking); Lucy Bolton, Steve Rylands, Nicola Scott. Subject matter leads to join as needed. Christopher Holland (MPI)

Agenda

9:45am – 3:30pm

9:45am Arrive – refreshments
Karakia i tīmata

Welcome
10:00am *Introductions*

Agenda items

Item 1: *10.15am – 11.00am*	*Context and background for the workshop.* Constraints, expectations and opportunities for the impact analysis (Martin)
Item 2 *11.00am – 12.30pm*	*Impact of the overall Essential Freshwater Package* Analysis we should be doing for the current Essential Freshwater package: • where we should be focussing our analysis, including interconnections and cumulative impacts within Essential Freshwater and with other areas? • what our priorities should be for commissioning external analysis?

12.30pm – 1.00pm ***Lunch***

Item 2: *1.00pm – 1.30pm*	continued
Item 3: *1.30pm – 3.15pm*	*Assessing the impacts of specific freshwater proposals.* What is necessary and achievable for decisions in April on the discussion document: • where we should be focussing our analysis over the next three months?

Closing business

Item 4: *3:15pm – 3:30pm*	*Wrap-up: what have we heard, and what are the next steps?*

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Karakia whakamutunga

3:30pm Meeting closes

References:

Background Document	Title	
Background Document	Essential Freshwater: Assessing impacts of possible policy approaches	In confidence

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Andre Silveira

From: Victoria Young <Victoria.Young@mfe.govt.nz> on behalf of Martin Workman <martin.workman@mfe.govt.nz>
Sent: Tuesday, 3 September 2019 11:24 AM
To: sam.mcivor@beeflambnz.com; Rowena.Hume@beeflambnz.com; david.burger@dairynz.co.nz; David Rhodes; dan.coup@deernz.org; Mike.Chapman@hortnz.co.nz; Andrew.Bristol@hortnz.co.nz; esoal@irrigationnz.co.nz; tim.ritchie@mia.co.nz; Fiona.gower@ruralwomen.org.nz; media@waternz.org.nz; ceo@waternz.org.nz; caroline.read@overseer.org.nz; k.hague@forestandbird.org.nz; Lee.Cowan@dairynz.co.nz; kimberley.crewther@dairynz.co.nz; nclark@fedfarm.org.nz
Subject: Embargoed copy of Essential Freshwater Discussion Document to be provided

Good morning

As you may be aware, the Government is releasing *Action for healthy waterways* – a discussion document on national direction for essential freshwater at 11 am on Thursday 5 September.

We propose to make an embargoed copy of the discussion document and supporting materials available to a small group of key partners and stakeholders, including you, at 8.30 am on Thursday 5 September. A copy will be emailed to you, on the expectation that you will respect the embargo – that is, not forward the contents to anyone outside your organisation prior to 11 am.

If you would prefer printed copy, you are welcome to send a Wellington-based staff member to collect a hard copy from Victoria Young at the Ministry for the Environment offices in Kate Sheppard place at 8.30 am. Please let us know if you will be collecting a hard copy.

Thank you

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries
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Essential Freshwater Advisory Groups Joint Workshop – Impact Analysis
17 January 2019

Essential Freshwater: Assessing impacts of possible policy approaches

Context 2

Outline of possible scope of work to evaluate the entire policy package 5

Policy approaches and impact assessments planned or underway 7

- Improving farming practices and managing intensification of rural land-use 7
- In-stream sediment 10
- Preventing ongoing drainage and degradation of wetlands 14
- Maintain or improve overall water quality 15
- Safeguarding ecosystem health 16
- Dissolved oxygen in rivers 19
- Providing for renewable electricity under the Freshwater NPS 21
- Urban 22
- Copper and zinc 24
- Sustainable flows in rivers and water levels in aquifers 24
- Sensitive downstream environments 24
- Te Mana o te Wai and Māori values for freshwater health 25
- Allocation of nitrogen 26

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Context

1. This paper sets out the approach to impact analysis in the Essential Freshwater programme.

Purpose of analysis

2. The primary purpose for the analysis is to provide information to support and inform Ministers' decisions on regulatory proposals in December 2019.

3. There are two other interim purposes of the analysis, which is to provide:

   - sufficient information to Ministers, to enable them to make decisions on what to consult on in July 2019
   - information to enable the public to provide informed responses to the consultation.

Scope

4. The initial focus of this work is the analysis of the regulatory proposals that the Ministry will be **consulting on in July 2019**. This includes the social, cultural, environmental and economic impacts, both positive and negative.

5. Of the six workstreams included in the Essential freshwater Work programme, this work will cover aspects of:

   - National Policy Statement for Freshwater Management amendments
   - National Environmental Standard for Freshwater Management
   - Allocation of freshwater resources

6. The July/August consultation will not cover every aspect of these workstreams. We intend to do more work, and further rounds of consultation on these workstreams (such as allocation of water takes and providing bottom lines for further attributes).

What we want to achieve from the 17 January 2019 meeting

7. The three purposes above give us two distinct timeframes that we need to work to, April 2019, to input into the consultation discussion document and October 2019, to input into Ministers decisions. We need to provide regulatory impact analysis and s32 evaluations at these dates. In our upcoming meeting we would like to discuss both:

   - the immediate requirements about **what is necessary and achievable for decisions on the discussion document in April**; and
   - **what analysis we should be doing over the longer term**.

8. For the April 2019 timeframe, from this meeting we would like to understand your views on:

   - where we should be focussing our analysis over the next three months?
   - what our priorities should be for commissioning external analysis over the next three months?

9. For the October 2019 timeframe, from this meeting we would like to understand your views on:

   - where we should be focussing our analysis over the next nine months, including interconnections and cumulative impacts within Essential Freshwater and with other areas?

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- what our priorities should be for commissioning external analysis beyond July 2019?

10. We also welcome any input into analysis that you consider we should be doing to support future Essential Freshwater proposals.

Timeframes are tight but necessary

11. We need to meet the April and October timeframes in order to enable the government to make changes in this term of Government. The timeframes will require us to prioritise some analysis projects over others and consult on options while we are still undertaking analysis. We consider that while not ideal we will be able to meet both of the timeframes with sufficient analysis.

12. Because much of this work is specialised and will only be able to be done by a limited number of providers we may need to prioritise the work that we commission from some providers, and analysis we would like to have done prior to consultation may need to be on a longer timeframe. In addition procurement rules may also mean that any impact analysis that needs to be done by a provider who is not on our approved provider list may not be able to be done prior to consultation.

Proposed analysis

13. Accompanying this introduction are precis of the impact analysis we propose to do for each of the topics. These set out potential policy responses, who is affected and the impact testing we have planned. In addition to the four main questions set out above, we welcome your feedback on these precis, including our proposed approach to the analysis, and identification of gaps in our analysis and suggestions on how we could fill these gaps.

14. In addition to this work, we propose to do social and cultural impact analysis that is relevant to all of the proposals. This is set out later in this document in project 1 and 2 of the "Outline of possible scope of work to evaluate the entire policy package".

Over the longer-term our work will need to consider the cumulative impact of proposals

15. People and the environment will be affected by a combination of changes, so we will need to consider the impacts of the package as a whole, as well as the impacts (both positive and negative) of other government policies, especially climate change, biodiversity and potential changes to the NES on drinking water.

16. While it will need to be somewhat iterative, we consider the first step is to assess the individual impacts of the proposals, then get Ministers to identify preferred policy responses. Once this is done there can be analysis of the cumulative effects of policy proposals. Given the timeframes we are working to, we consider that this work will need to be done in the second half of 2019 to inform final Cabinet decisions. It is also likely that we will need to provide advice on more than one package of options to enable Ministers to consider alternatives and different timeframes.

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Te Mana o te Wai

17. In conducting work for the Essential Freshwater work programme, particular consideration is given to Te Mana o te Wai. Te Mana o te Wai is the concept that gives meaning to our policy and directs a common purpose for freshwater management – including providing for the water first and adopting a holistic lens. Te Mana o te Wai will guide this impact assessment.

Problems to address

- Sediment, nutrients and pathogens (predominantly from rural land) continue to affect rivers, groundwater and estuaries
- Extensive, historic and ongoing drainage and degradation of wetlands has resulted in permanent loss of wetlands, and adverse effects on those that remain
- Habitat and spawning areas for indigenous fish are highly modified or degraded
- The health of freshwater ecosystems is degraded. For example, three quarters of indigenous fish species under threat of extinction
- In a growing number of catchments, the volume of water abstracted has reached or exceeded sustainable limits
- The way rights to use resources is managed is unfair
- Māori rights and interests in freshwater have not been addressed

The impacts of the possible interventions

18. This paper presents a precis of the proposed policy responses for freshwater to address these problems. These responses focus on using regulatory - RMA national direction (NPS and NES) approaches or potentially legislative approaches (allocation of nutrients). There is a description of the impact assessment for each individual response.

19. In this paper, we talk about commissioning work. This means setting up the right people to do the analysis. The work could be done in-house by the Freshwater Taskforce or by contracting external experts (or a combination). Also indicated is where analysis will be done on existing information.

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Outline of possible scope of work to evaluate the entire policy package

20. The previous papers focus largely on the impact analysis for individual policy proposals. We need to draw these strands together and provide a picture of how the entire policy package interacts in terms of costs and benefits. To meet this need, we have begun scoping work presented below that could utilise an ecosystem services framework to describe the cumulative effects of the policy package on social, cultural, economic, and environmental well-being.

21. To give a complete picture, we need to have a backwards-looking component to assess the effects of the status quo business as usual policy settings and also a forwards-looking component to model the effects of the policy package. Due to the exigencies of time, budget constraints, and available information, a broad study of this type has to be location-specific, preferably in a catchment (or two) that we consider relatively representative and data-rich. Also, we cannot begin the forwards-looking component until we have clarity on the proposed policies as well as further information on the state of the problem for some issues considered within the Freshwater NES and NPS[1].

22. Therefore, this is an opportune time for your inputs, feedback, and contributions to the scope of work we are developing to evaluate the package as a whole. The description below is a potential beginning to achieve this objective, and we intend to refine it to achieve our objectives on policy impact testing.

Study part 1: backwards-looking assessment of the impacts of status quo

23. It is necessary to evaluate the effects of current "business as usual" conditions when considering the social, cultural, and economic impacts of proposed environmental policies. There is an implicit cost of inaction or continuation of the status quo. Assessments of proposed policies that do not examine these implicit costs provide only half the picture to policymakers. To support contextual analysis of the entire suite of policy choices, we propose to conduct a study that will highlight the social, cultural, and economic costs of environmental degradation; it will make these effects of environmental degradation explicit.

24. The Ministry has already conducted a review[2] of literature that addresses these impacts of environmental degradation and how future studies could be structured most effectively. The review provided the following over-arching conclusions:

    a) Previous research shows strong correlations between the state of freshwater ecosystem attributes and the state of ecological, cultural, social, and economic values that flow from freshwater ecosystems. It also points to high levels of degradation in some areas, which means a high level of cost across the types of values.
    b) Detailed research on the costs of degradation needs to be undertaken at a catchment or local level and requires information from the relevant local communities.
    c) In order to integrate information on the costs of degradation with policy modelling in a catchment, there needs to be a clear relationship between the metrics for the state of the environment and the metrics for the values. This integration can be achieved with quantitative measures of value, such as monetary valuation of ecosystem services, and/or semi-quantitative, qualitative, or hierarchical measures of value through ranking or rating

[1] We anticipate research on hill country cropping and intensive grazing to be completed in May.

[2] internal link to review

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systems. Future research could focus on refining estimates of such relationships and integrating them into policy projections.

25. Detailed and integrated studies of this general type have been conducted for Te Waihora-Lake Ellesmere and the Waiapu and Waikato-Waipa catchments. We could build on this existing work or conduct a new study, but the ultimate decision on the location should depend on information availability to underpin both the backwards- and forwards-looking components of the study.

Study part 2: forwards-looking assessment of the package's effects

26. This study's primary objective is to evaluate the cumulative costs and benefits of the policy package (possibly including climate policy options as well) in relation to ecosystem services and wellbeing in the same catchment as part 1. This has two parallel components: biophysical modelling to evaluate what changes would be required and what their environmental and economic effects would be, and social exploration of values the community holds for the environmental and economic systems that would be affected. These components will enable us to understand how the catchment community would be able to implement the changes and their effects on the community. Both components of this study require the policy proposals being finalised and the delivery of information from impact testing specific to individual policy components.

27. Component 1 of this study would apply ecosystem services modelling to assess the effects of the policy package on relevant services that affect social, cultural, economic, and environmental aspects of wellbeing. It would entail establishment of current ecosystem service provision and analysis of changes in service provision due to the policy interventions. Not all ecosystem services and aspects of wellbeing could be assessed, but it would likely be possible to highlight specific ones of particular significance. This study could benefit from incorporating findings from other impact testing work we are undertaking to describe overall costs entailed by the required changes.

28. Component 2 of this study would include assessment of the social impacts of the policy interventions from the point of view of the affected community. This would be based on Part 1 and could use a range of social science methods. This would help us understand the anticipated social effects of the policies and how the required interventions could be implemented in practice. As such, this research component would help us test likely feasibility and impacts of the interventions as well as show what outcomes may be possible through status quo policy environment but incorporating non-regulatory extension programmes.

Conclusion

29. A research programme of this nature would provide useful information to support our Regulatory Impact Statement process by providing analysis of the effects of current policy to date, what a continuation of the status quo could look like, and how the proposed policies will affect social, cultural, environmental, and economic wellbeing. While the study would be limited to one or two discrete catchments, we would endeavour to relate findings to existing information in a generalisable way.

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Policy approaches and impact assessments planned or underway

30. **Yellow highlighted text** indicates testing that would involve significance expense and/or time.

Improving farming practices and managing intensification of rural land-use

Policy responses

31. The intent of the policy responses under consideration is to reduce the effects of discharges of contaminants and other activities on water bodies from rural land uses. Policy responses being considered are national regulations prescribing:

    - mandatory Farm Environment Plans, to reduce the impact of rural land-use on water quality
    - requirements to exclude stock from waterways, to prevent water pollution caused by stock access to waterways
    - restrictions on high-risk activities (such as intensive grazing on forage crops, hill country cropping and feedlots/feed pads/sacrifice paddocks) to reduce the effects of these activities on water quality. This is linked to the sediment policy responses.
    - constraints on farm intensification in specific areas, to prevent further degradation of water quality caused by land-use changes or increasing farm inputs.

32. The environmental impacts anticipated from these policy responses are improvements in the ecological health of water bodies impacted by rural land uses.

Who is affected?

Policy response	Social impacts	Cultural impacts	Economic impacts
National regulations to better manage rural land-use, covering: • stock exclusion • farm environment plans/good management practice • high risk activities • intensification	Regulations could create issues around property rights and allocation fairness. For example, constraining intensification could disproportionally affect owners of under-developed land (including Māori-owned land), or land-owners with low-discharge existing activities. There would be some animal welfare benefits from better regulating feedlots/feedpads.	Better management of rural land-use will improve water quality in rural areas, which will improve the natural form and character value of waterbodies, and allow greater utilisation and enjoyment of freshwater resources for activities like mahinga kai, swimming, boating, fishing etc.	Costs for farmers to develop and implement FEPs, reduce high-risk activities and fence waterways where this is not already required. Requirements could be staged to target higher risk farm-types/areas first. The policy design would need to take account of potential for wasted investment or locking in unsuitable land uses e.g. fencing to exclude stock from land which in the

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	Social impacts may arise if farming profitability is significantly reduced by the proposed policy responses e.g. decreased employment, rural depopulation and flow-on effects on services such as schools and medical facilities.		longer term is likely to be converted to forestry. Cost to regional councils to implement regulations, and monitor compliance (depending on area and action already underway). Under the NES, these costs could be recouped from farmers. Economic benefits foregone in areas that are theoretically able to intensify but are unable to do so due to unacceptable effects on water quality. Potential economic benefits to NZ from improved water quality, enhancing NZ's image for export products and tourism.

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Impact testing

33. Scale of the problem:

- Assessment of regional council rules across:
  - Stock exclusion
  - Farm environment plans/good management practice
  - High risk activities
  - intensification
- Review of existing literature and knowledge on water quality, economic, social and cultural impacts of the policy responses
- Assessment of current good practice codes and guides relevant to proposed policy responses
- Intensification: Modelling to understand where intensification may occur and how it may impact water quality without intervention. The modelling will predict:

- where different types of rural land-uses (sheep and beef, dairy, horticulture and forestry) will occur and the total extent of change in hectares over the next 5-10 years based on commodity prices, land-use capability and other factors
- changes in inputs for the different rural land-uses (eg, stock numbers) based on historical information/projections
- the likely impact of these predicted changes on water quality (nationally with regional break-down).

- Farm Environment Planning: Stocktake of information on the costs and benefits of implementing and maintaining existing farm environment plans (FEPs) including any measures of effectiveness of current FEPs and their audit requirements (MPI funded, underway). This will inform the costs, benefits, and effectiveness of introducing mandatory farm environment plans over time
- High risk activities: Assessment to compile a list of high-risk activities (including LAWF recommended activities) - based on scale of activity, contaminant discharges and whether they are adequately managed under existing plan rules
- Hill country cropping:
    i. area and locations of hill country cropping (assessed using remote sensing). Ideally this assessment would be followed up by modelling the water quality impacts from all the identified sites (already commissioned).
    ii. Review of NES Plantation Forestry approach to mapping (underway).

34. Economic impact:

    a. Farm scale modelling analysis of ~50 farms, looking at the financial and water quality impacts and benefits of potential NES regulations covering FEPs, stock exclusion, high risk land use activities, wetlands and constraints on intensification. The sample farms will cover a range of geographic areas and types of farming, and include some Māori owned farms.

    b. The next stage of this research will use the information generated in (a) to model the financial and water quality impacts and benefits of the same potential NES regulations at a catchment, regional and national scale.

    c. Working with industry (e.g., irrigation schemes) to obtain existing data for use in analysing the financial costs to farms associated with preparing, implementing and auditing Farm Environment Plans. This research will also seek data on the water quality benefits from the implementation of Farm Environment Plans.

35. Social impact:

    a. Research using a catchment case study to understand first-hand the social impacts and benefits (e.g., on employment, community cohesion, wellbeing) of the modelled NES regulations from the point of view of the affected community. This will be based on the findings of the ecosystem services modelling detailed below (cultural impact).

    The next stage of this study (2019/20 financial year) will look at how an ecosystem services approach to farm and catchment management can help landowners farm within

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environmental limits while also achieving desirable economic outcomes. This can be used to:

i. assess the efficacy of an extension programme to support the potential NES regulations, using an ecosystem services approach as a tool for farmers to farm within environmental limits
ii. inform the Regulatory Impact Statement by providing analysis of an enhanced status quo as a policy option (in the absence of regulations) (yet to be scoped).

36. Cultural impact:

a. Conduct ecosystem service modelling on a case study catchment(s) to establish baseline ecosystem service function, and the impact of potential NES regulations (FEPs, stock exclusion, high risk land use activities, wetlands and constraints on intensification). Part of this research will look at the modelled impact of regulations on cultural ecosystem service provision in a case study catchment(s). We are currently working to establish which cultural ecosystem services will be included (depends on data availability). Suggested examples include aesthetic, recreational and mahinga kai.

In-stream sediment

Policy responses

37. The intent of the policy responses under consideration is to reduce the effects of in-stream sediment on water bodies. Policy responses being considered include amendments to the National Policy Statement for Freshwater Management:

i. A set of attribute tables: sediment attributes with at least bottom lines and potentially also bands
ii. Monitoring requirements: in-stream sediment monitoring requirements
iii. Integrated catchment management planning: identification of high risk erosion areas, high risk sediment generating activities, and sensitive receiving environments in plans, and their use in sediment limit-setting processes.

38. The environmental impacts anticipated from these policy responses are improvements in the ecological health of water bodies impacted by sediment.

Who is affected?

Policy response	Social impacts	Cultural impacts	Economic impacts
Attribute tables	Greater enjoyment of water bodies in terms of biodiversity and recreation as well as aesthetic and intrinsic values.	Greater enjoyment of water bodies in terms of fisheries, biodiversity, intrinsic, and mahinga kai values.	Costs to resource users, particularly urban and infrastructure development and the primary sector. Benefits to fisheries, tourism, aquaculture, infrastructure

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Policy response	Social impacts	Cultural impacts	Economic impacts
	Risk of decreased employment and population.		operation (transport, logistics, hydropower, etc.), and municipal water supply systems, and natural hazard resilience. Increased implementation costs to councils (they currently spend ~$14.5 million per annum on erosion-related goods and services and employ, in aggregate, 107 FTE directly related to sediment and erosion management.[3])
Monitoring requirements			Potentially large increased monitoring costs for regional councils (increases in equipment, staff time and capability).
Integrated catchment management planning			Added complexity and cost to the planning process for regional councils.

Resource user impacts

39. New rules and activity restrictions to meet bottom lines would accrue costs to resource users. A survey of council staff from seven regions indicated they would focus on both regulatory and non-regulatory methods to address sediment discharges from the following types of activities and standards: land disturbance (100% of respondents), land/vegetation clearance (87.5%), land use (87.5%), earthworks (75%), and farm planning (75%). A smaller majority said they would focus on forestry (62.5%), cultivation (62.5%), discharges to water (50%), performance standards (50%), subdivision (50%), in-stream water quality standards (37.5%), and structural standards

[3] Robb, C. & Brown, I. (2018) Regional Sector Capacity and Capability - Erosion and sediment. Report commissioned by Resource Managers' Group

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(25%).

Cost example

40. The Sustainable Land Use Initiative (SLUI) in the Horizons region provides a useful starting point for resource estimates. Over the past decade, SLUI has spent over $65 million (~1/3 central government, 1/3 regional council, 1/3 landowner) resulting in, among other things, 660 farm plans, land use mapping of 500,000ha, and 30,000ha of on-farm erosion mitigations. These interventions cover about 12% of Horizons' total highly erodible land area.

41. A recent review of SLUI's impact on water quality trends[4] showed that:

> "… statistically significant associations between improving trends for all water quality variables [including suspended sediment indicators] and the proportion of catchment involved in SLUI farm plans. There were also significant associations between improving water quality and additional [Horizons Regional Council] initiatives associated with riparian planting and new fencing."

Positive impacts of interventions

42. The economic, social, and cultural cost of doing nothing (the cost of environmental degradation through current business as usual policy regimes and resultant sediment discharges) is difficult to estimate comprehensively for two main reasons.

- Some costs of degradation cannot be quantified and/or should not be considered in monetary terms (e.g. species extinction or degradation of tapu sites).
- For many of the costs that can be quantified and/or monetised, there is inadequate information to do so robustly. For example, attribution of specific or proportional ecosystem health decline due solely to sediment is usually impossible because ecosystem health responds to multiple stressors of which sediment is only one (though often a major) component.

43. Mitigations to reduce sediment loss virtually always carry co-benefits for reducing loss of nutrients, contaminants, and in some cases heavy metals. The specific mitigations (for example, afforestation) may also provide carbon sequestration and land productivity benefits through maintaining or improving soil health and quality.

44. More widely, as indicated above, reducing sediment loss can have numerous co-benefits including society wide natural hazard and climate change risk reduction, increased productivity in aquaculture and fisheries, reduced costs for municipal water supply and treatment systems, hydropower operators, etc.

Impact testing planned

45. The impact testing described here relates to the sediment attributes only. We do not envision undertaking extensive impact testing for monitoring requirements and integrated catchment planning beyond our ongoing engagement with the sediment working group of regional councils. For sediment attributes, we have planned a staged impact testing programme that is partially underway now. The attribute development work underway (NIWA/Cawthron project) to be delivered in February will provide potential attribute bottom lines.

[4] Snelder, T. (2017) Assessment of recent reductions in E. coli and sediment in rivers of the Manawatū-Whanganui Region Including associations between water quality trends and management interventions

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46. Scale of the problem: We are able to assess the scale of the problem – rivers currently below bottom lines – through a simple mapping exercise overlaying the proposed bottom lines with modelled in-stream indicator values[5].

47. Scale of the problem: Hydrological modelling to assess how much sediment yield reduction is required to meet proposed bottom lines where they are currently breached. This work will be underway shortly.

48. Scale of the problem: A literature review and feasibility study for a bespoke national integrated erosion and economic modelling study. No work of this scope and scale has been attempted previously, and we wish to determine whether a national study will meet our needs. We will determine, when they present the results of the feasibility study and the literature review whether to proceed with a national study and/or regional case studies. This work is underway.

49. Social and cultural impacts: The literature review and feasibility study includes evaluation of the mitigations' environmental co-benefits and how social and cultural values can be incorporated in the study.

50. Economic impact: Integrated erosion and economic modelling to assess scenarios (land use, management, and standards) that could achieve the required sediment yield reduction and the costs and co-benefits of those scenarios.

51. Economic impact: One regional case study has been scoped almost completely and could start at the same time (or before) a national study. Other potential regional case studies could focus on how the proposed policies would interact with urban development, forestry, general rural land use, and estuarine health.

Hydrological modelling

52. The hydrological modelling will identify the required reduction in sediment yield to achieve the in-stream bottom lines for at least suspended sediment. No nationwide models have established significant relationships between sediment yield and the relevant deposited sediment indicator, and so the project will also explore new model development or other avenues to assess the reduction requirements to meet deposited sediment attribute bottom lines.

53. The hydrological modelling must occur first because it provides the sediment yield reduction "targets" for catchments. We are currently contracting this work with NIWA. With this information, we will be able to provide rough costs using information from studies that provide costs to achieve sediment reduction.

Summary

54. We are progressing the following work to be completed in March:

    i. National hydrological modelling as described above

    ii. A discrete analytical literature review of how sediment mitigations are incorporated in modelling frameworks (erosion and economic), what/how co-benefits, including social and cultural co-benefits, can be incorporated in the study, and the variability and sources of variability in sediment mitigation effectiveness.

[5] See the document on indicative exceedances of the attributes on the portal.

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iii. A feasibility study for national scale integrated erosion and economic modelling of sediment regulation impacts.

55. Following delivery of this information in March, we will decide what work to progress next and whether to do a national assessment and/or regional case studies.

Preventing ongoing drainage and degradation of wetlands

Policy responses

56. The intent of the policy responses under consideration is to prevent further loss of wetlands by drainage, sedimentation, or earthworks. This could be achieved in regulations in a new national environmental standard. The regulations would override regional rules.

57. The environmental impacts anticipated from these policy responses are retention of wetlands otherwise at risk of degradation or draining. This means that those wetlands will be able to continue to provide benefits such as ecosystem services, including flood mitigation and denitrification.

Who is affected?

Policy response	Social impacts	Cultural impacts	Economic impacts
Restrictions on draining and degrading wetlands	Removing the risk of draining wetlands retains opportunities for hunting and wildlife watching.	About 10,157 hectares of wetlands are on Māori land, making up 4% of total remaining wetland area or 10% of wetlands left on private land. Removing the risk of draining retains opportunities for mahinga kai.	Retention of ecosystem services (denitrification, flood mitigation) provided by the remaining wetlands. These benefits accrue to the land owners and the wider community. Opportunity costs to land owners and developers wanting to drain wetlands for pasture, infrastructure or urban development.

Impact testing

58. We are considering the following impact testing:

i. Scale of the problem: assessment of biodiversity at-risk of being lost that would be retained or restored

ii. Scale of the problem: stocktake of existing research on farmers' understanding of ecosystem services provided by wetlands and why farmers choose to retain wetlands

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iii. Cultural impact: assessment of values that would be retained, e.g. mahinga kai gathering.

iv. Economic impact: opportunity costs, such as, constraints on draining wetlands for pasture

v. Economic impact: costs to NZTA in offsetting wetland destruction for state highways

vi. Economic impact: value of ecosystem services retained (flood mitigation and denitrification)

Maintain or improve overall water quality

Policy responses

59. The intent of the policy responses under consideration is to avoid the risk of regional plans allowing water quality to decline (either within a band, or until a council sets the freshwater objectives in its regional plan). This could be achieved by amending the NPSFM. The options under consideration are:

- Direct regional plans to maintain water quality at a precise state (currently must maintain within attribute bands); and
- Direct regional plans to maintain water quality from a specified date (e.g. 2014) to ensure any declines prior to NPSFM implementation by 2025 (or 2030 in limited circumstances) are not locked in. The NPSFM currently directs overall water quality to be maintained or improved from the date the freshwater objectives are set.

60. Note that a requirement to maintain already exists, and this analysis only relates to the impact of changing that requirement as described above. While the requirement to maintain or improve water quality has significant impacts, the changes being considered are expected to have limited impacts.

Who is affected?

Policy response	Social impacts	Cultural impacts	Economic impacts
Direct regional planning to maintain water quality at a precise state (rather than within a band)	Few impacts anticipated	Few impacts anticipated	Reduced land use development capacity compared to the status quo.
Direct regional plans to maintain water quality from a specified date	Few impacts anticipated	Few impacts anticipated	Potential for debate and litigation, i.e. the feasibility of determining water quality at set date and at what confidence.

Impact testing

61. Scale of the problem: Environmental Reporting, and the state and trend analysis that underpins it allows us to determine what the water quality was in 2014 for some indicators at this national

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level, and identify which indicators this may not be possible for (e.g. periphyton). More up-to-date data and analysis is due this year.

62. Social impact: Nothing specific planned.

63. Cultural impact: Nothing specific planned.

64. Economic impact: The Land Use Capacity analysis (completed in 2014) modelled the headroom and shortfall of land use capacity under multiple scenarios, including maintaining existing water quality at its precise state or within a band. This tells whether the policy responses above would lead to reduced scope for intensification.

65. Economic impact: It may be necessary to assess whether water quality (in terms of the NPSFM attributes) can be determined for historic dates with enough confidence to understand the potential for debate and litigation.

Safeguarding ecosystem health

Policy responses

66. The intent of the policy responses under consideration is stop further degradation and loss of freshwater ecosystems, and address the degradation of habitat and spawning areas for indigenous fish. This could be achieved by amending the NPSFM. The options under consideration are:

67. Directing no net loss of habitat and ecosystems

68. Directing integrated strategic management: directing councils to take a more proactive, future focussed and integrated approach across the resource management system, intended to prevent further degradation and reverses past damage:

69. Adopt a precautionary approach where effects on ecosystem health are uncertain, but potentially significantly adverse

70. Add objectives and policies for better management of fish passage

71. Add a new optional value for Threatened Indigenous Species

72. Add new requirements for monitoring and reporting: Direction that monitoring and reporting includes aquatic life, habitat and ecological processes and improve transparency around what information represents.

73. The policy responses to safeguard ecosystem health are closely linked with the sediment, wetlands, estuaries, and urban work streams. Alongside the Essential Freshwater links, this package is linked to draft proposals in the NPS for Indigenous Biodiversity (in preparation), existing provisions in the NZ Coastal Policy Statement, the one billion trees programme, the freshwater improvement fund, wider resource management system reform, and long term resource management system planning.

74. The environmental impact anticipated from these policy responses is that the ecosystem health of water bodies improves, and habitat, aquatic life, and ecological processes are better safeguarded.

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Who is affected?

Policy response	Social impacts	Cultural impacts	Economic impacts
All	Safeguard natural capital, and provision of social ecosystem services for current and future generations.	Safeguard natural capital, and provision of cultural ecosystem services for current and future generations.	Safeguard natural capital, and provision of economic ecosystem services for current and future generations.
All	Benefits from intrinsic, aesthetic and spiritual values	Benefits from intrinsic, aesthetic and spiritual values	Protecting environment is more cost effective than restoring it Positive impacts for tourism and primary industry brand Opportunity cost from restricted ability to profit from degradation
Precautionary approach	Shorter timeframe for freshwater management decisions leading to better protection of ecosystem	Shorter timeframe for freshwater management decisions leading to better protection of ecosystem	Increase costs for resource users in proving effects as more evidence required. Reduces burden of proof costs of setting freshwater limits for councils (and public)
Objectives and policies for better management of fish passage	Positive impact on recreation and harvesting (eeling)	Positive impact on Mahinga kai	Implementation and monitoring costs for barrier owners Positive impacts for tourism and primary industry brand
No net loss of habitat and ecosystem	Safeguarding of natural capital	Safeguarding of natural capital	Opportunity cost for existing land owners with rivers and streams Increased the costs of development due to mitigation or offsetting of effects necessary to ensure no net loss

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Policy response	Social impacts	Cultural impacts	Economic impacts
Integrated strategic management	Can inform more efficient, targeted efforts of community groups. Social cohesion – better connections and engagement with community. Involvement in planning future development and activities in the area. Greater protection of significant areas and species	Can inform more efficient, targeted efforts of community groups. Involvement in planning future development and activities in the area. Greater protection of significant areas and taonga species	Long term efficiency improvement arising from improved coordination between agencies Long term benefits from greater certainty for developers Short term costs to councils and other agencies in the development of the strategic plan. Increased complexity for councils to implement.
Add value for Threatened Indigenous Species to NPSFM	Intellectual, aesthetic and spiritual benefits from greater protection of threatened species (if desired by the community)	Intellectual, aesthetic and spiritual benefits from greater protection of taonga species (if desired by the community)	Positive benefits for ecotourism
Monitoring and Reporting – clarifying existing obligations	Provides information which allows people to engage in democratic processes and decision making in an informed way.	Better ability to engage in democratic processes and decision making	Could lead to an increase in compliance costs for councils if not carrying out obligations already

Impact testing

75. Impact testing is still to be scoped for changes relating to:
    - Threatened Species value
    - Precautionary approach
    - Monitoring and reporting
76. Scale of the problem: data and analysis from Environmental Reporting, and the state and trend analysis that underpins it allows us to determine the existing ecosystem health. Review of regional council plans in relation to no net loss and implementation of the relevant NZ Coastal Policy Statement provision. Review of the effectiveness of provisions in the NZCPS for how its direction relating to the precautionary principle, strategic planning and no net loss works.
77. Social impact: Nothing specific planned.

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78. Cultural impact: Nothing specific planned.

79. Economic impact: The (incomplete) national data set of fish passage barriers identifies over 20,000 barriers. Need to determine costs to fix barriers and timeframe required to address barriers particularly for councils. Will work with the Fish Passage Advisory Group and councils to carry out this.

80. Economic impact: No net loss - We will research the impact of a no net loss policy, including opportunity costs, by undertaking a literature review of international practice and current council practice.

81. Economic impact: Strategic Integrated Catchment Planning – We will carry out a survey of councils on the costs of implementation of proposals to councils and the benefits for future assessments of consents – council consultation.

82. Economic impact: Literature review (e.g. effectiveness and benefits of Strateg c Integrated Catchment Planning).

Dissolved oxygen in rivers

Policy responses

83. The intent of the policy responses under consideration is to address the effects of contaminants and other activities in rivers that reduce dissolved oxygen levels in the water. There will be better understanding of dissolved oxygen state and trends; knowledge of where improvement is required; and better protection of ecosystem health and biodiversity.

84. This could be achieved by amending the NPSFM. The option under consideration is:

    - Direct more comprehensive monitoring and management of dissolved oxygen (similar to the requirements for the Macroinvertebrate Community Index). Councils would be required to identify when dissolved oxygen levels fell below a certain threshold and put a management plan into place to address this if it does. Dissolved oxygen levels are influenced by many complex and interacting drivers (including weed growth, flows and shading). A monitoring and management requirement means management actions would be employed in a timely manner, rather than assessing the achievement of an objective set using a dissolved oxygen attribute.

85. This response will increase the spatial coverage of dissolved oxygen monitoring as well as requiring more continuous monitoring, which provides a more comprehensive picture of ecosystem health than spot measurements, which are currently the most widely used method.

86. This work is closely related to the Ecosystem Health work because dissolved oxygen is a key determinant of habitat quality for fish and other aquatic life and is essential for providing for the needs of the water body.

Who is affected?

87. The drivers of dissolved oxygen concentrations are complex and interactive. Methods for addressing dissolved oxygen include limiting resource use (such as flow and nutrient management), and adopting specific management actions (such as increasing riparian shading, aeration, or removal of macrophytes).

88. There would be many positive environmental impacts from improved management of dissolved

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oxygen:

- increasing shading through riparian planting would reduce growth of nuisance aquatic plants, reduce temperatures and provide greater habitat diversity
- Increasing fish habitat quality leading to more resilient fish populations – benefits for fisheries as well as intrinsic biodiversity value
- Aesthetic and ecosystem benefits of avoiding anoxic "dead water" zones
- Better protection of sensitive downstream environments such as estuaries and lakes, avoiding the need for costly restoration in the future

Policy response	**Social impacts**	**Cultural impacts**	**Economic impacts**
Direct more comprehensive monitoring and management of dissolved oxygen		Recognition of values dependant on the health of aquatic species (e.g. mahinga kai). Recognition of values dependant on water quality (e.g. aesthetic values)	Increased monitoring costs for regional councils (minor to moderate increases in equipment, staff time and capability). Costs associated with mitigation actions that will fall to different parties (including land owners) and vary in magnitude depending on the management response.

Impact testing

89. Scale of the problem: Commission research to predict the interventions required to improve dissolved oxygen concentrations in different stream and river types. The research will aim to quantify 1) the relative importance of the critical drivers influencing the dissolved oxygen regime and 2) potential management actions to meet dissolved oxygen objectives, with a conceptual model of relationships between management actions and critical drivers.

90. Scale of the problem: We have a good understanding of the physiological effects of dissolved oxygen on organisms. This information was used to formulate the existing DO attribute that applies below point sources.

91. Scale of the problem: The study conducted by Depree (2016) describes the current state of dissolved oxygen nationally. The quality and quantity of dissolved oxygen data was reasonably sufficient to allow the current state to be assessed at the national scale.

92. Social impact: Once the importance of potential management actions has been assessed we will be able to estimate social impacts. This may be able to be adapted from impact testing analysis carried out for other policy options related to water quality.

93. Cultural impact: Once the importance of potential management actions has been assessed we

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will be able to estimate cultural impacts. This may be able to be adapted from impact testing analysis carried out for other policy options related to water quality.

94. Economic impact: We intend to collate information on the scale and cost of increased monitoring requirements by regional councils.

95. Economic impact: It will be possible to use or adapt impact testing analysis carried out for other policy options related to water quality because the management actions required are often similar.

96. Economic impact: Once the importance of potential management actions has been assessed we will be able to estimate costs involved, based on examples or case studies.

Providing for renewable electricity under the Freshwater NPS

Policy responses

97. The intent of the policy responses under consideration is to address the contribution of hydro-generation infrastructure to the decline in water quality, while recognising that hydro-generation infrastructure is important to allow New Zealand to reduce its contribution to climate change and meet its commitments to renewable energy.

98. This could be achieved by amending the NPSFM (including amendments to Appendices 3 and 4, or it may be done through modification to policies CA3 and CA4). The option under consideration is to:

99. **Provide an exceptions framework for existing hydro-electric infrastructure or for all renewable electricity:** Allow a regional council to set an objective below a national bottom line in order to safeguard New Zealand's security of electricity supply and to realise the benefits provided by renewable electricity generation.

100. The environmental effect of this option is that some water bodies may continue to be affected by existing infrastructure.

Who is affected?

Policy response	Social impacts	Cultural impacts	Economic impacts
Provide an exceptions framework for hydro-electric infrastructure		Certain rivers may not achieve the same water quality outcomes as others not containing infrastructure. We intend to understand the scale of potential rivers affected by looking at those catchments containing infrastructure that are	More certainty about making full use of NZ's renewable electricity infrastructure. The Halliburton Report (see below) demonstrated that there was a risk to New Zealand's security of electricity supply. The existence of regional council discretion in the

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Policy response	Social impacts	Cultural impacts	Economic impacts
		already below national bottom lines.	implementation of the Freshwater NPS means that this impact is unable to be stated with certainty.

Impact testing planned

101. Scale of the problem: Existing modelling allows us to describe the relationship between flows, hydroelectricity generation, emissions, and consumer pricing.

102. Scale of the problem: Identification of catchments/freshwater management unit that are below existing (and any proposed) national bottom lines and contain hydro-generation infrastructure.

103. Social impact: None planned

104. Cultural impact: None planned

105. Economic impact: This economic impact can be described using the above modelling.

Urban

Policy responses

106. **Direct city and district councils to strengthen the requirements to adopt integrated planning:** We have had consistent feedback that city and district councils frequently view their role as limited to obtaining and complying with discharge consents, leaving the bulk of the responsibility to plan for, and manage effects on, urban water with regional councils. City and district councils are however uniquely placed to promote better integrated catchment planning due to their role in managing infrastructure and land use activities.

107. This proposal aligns with other proposals (such as in the ecosystem health and sediment workstreams) which are looking at how to encourage integrated management in a spatial sense.

108. **Direct regional councils to prevent or limit the net loss of urban water bodies:** A particular issue of concern in urban environments is the degradation or loss of freshwater environments generally due to urban development. As part of the analysis on this policy response, we will need to consider:

- What constitutes stream "loss" (e.g., stream length, habitat, ecosystem function)
- How to determine "net" loss (e.g., how to determine in what situations loss may be justified and how to determine a commensurate improvement somewhere else)

109. This proposal aligns with proposals under the ecosystem health workstream, which may achieve the same outcomes.

110. **Guidance on urban good management practices**: Urban GMPs would sit under the Urban Water Principles drafted by the Urban Water Working Group. This group was set up in 2016 to develop complementary measures to the rural GMP work.

111. The environmental impact anticipated from these policy responses is improvements in water

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quality and ecosystem health of water bodies affected by urban areas.

Who is affected?

Policy response	Social impacts	Cultural impacts	Economic impacts
Direction for city and district councils on integrated planning	Little or no impacts anticipated	Little or no impacts anticipated	Potential for administrative costs to councils if required to participate more fully in freshwater planning processes.
Preventing or limiting the net loss of urban water bodies	Improved liveability through increased public green space, access to water bodies for recreation. Potential that if it increased significantly the cost of housing, this would exacerbate social problems arising from housing unaffordability.	Reduction in loss of mauri of urban water bodies through degradation and loss. Protection of water bodies would enable ongoing connections between people and water bodies.	Potential for increased cost of housing provision (through reduced yield), housing construction (through less flat land), reduced house value (through smaller lot sizes). Potential benefits in terms of house value (through improved amenity and liveability), housing construction (through reduced earthworks and piping), and reduced remediation of environmental effects.
Guidance on urban good management practices	N/A	N/A	N/A

Impact testing planned

112. The impact testing would mainly be in relation to preventing net loss of urban water bodies, because this is likely to have significant on the ground impact. Impact testing necessitate quantifying the problem, and identifying the relative costs and benefits of protecting urban water bodies from loss or degradation. This testing is likely to tie in closely with any impact testing under the ecosystem health workstream. The testing we anticipate carrying out is as follows:

113. Scale of the problem: Extent of urban water body loss (historical and current) and adequacy of

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current regulation.

114. Scale of the problem: Assessment of current city/district council involvement in integrated freshwater planning

115. Economic impact: Costs and benefits of retaining urban water bodies in housing development and infrastructure projects

116. Social impact: Social impacts of retaining urban water bodies in housing development projects

117. Cultural impact: Cultural impacts of retaining urban water bodies in housing development projects

Copper and zinc

Policy responses

118. The intent of policy responses is to reduce copper and zinc in water bodies, reducing toxic effects on aquatic species, and slowing or reducing the build-up of persistent contaminants in receiving environments. Policy responses being considered are: Government direction to phase out vehicle sources of copper, and guidance for using existing legislation to control building material sources of copper and zinc.

119. Impact testing will focus on the expected improvement to freshwater quality and receiving environments in terms of toxicity effects and ecosystem health; what other values are affected and how; the costs to vehicle owners; and examples of avoided costs.

120. More detail on these options and impact analysis will be provided to the advisory groups after the options have been discussed with the advisory groups and the Ministers.

Sustainable flows in rivers and water levels in aquifers

Policy responses

121. The intent of the policy responses under consideration is for regional plans to set sustainable flows in rivers and water levels in aquifers that safeguard the life-supporting capacity and ecosystem health of the water bodies. These would replace the direction in the proposed National Environmental Standard for Ecological flows and levels (2008) that has no statutory weight. The main options – freshwater objectives for river flows, a non-mandatory default flow regime, and direction for managing tributaries – largely provide more explicit direction to existing policies in the National Policy Statement for Freshwater Management.

122. There are very few catchments without any flow regime requirements set in a regional plan.

123. Social and cultural impacts: will be evaluated as part of the social and cultural impacts of whole package.

124. Economic impact: we will use the cost benefit analysis done for the 2008 NES and updated in 2017.

125. More detail on these options and impact analysis will be provided to the advisory groups after the options have been discussed with the advisory groups and the Ministers.

Sensitive downstream environments

Policy responses

126. The intent of the policy options under consideration is to reduce the input of sediment, nutrients and pathogens to estuaries and other sensitive receiving environments. This may be achieved by

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amending the NPSFM directing regional councils to take into account the effects on downstream receiving environments when setting fresh water objectives and limits. The main option – to provide clearer direction within the NPS-FM to consider downstream environments – will clarify the existing policy intent of the NPS-FM. This links to the workstreams on sediment and ecosystem health.

127. More detail on these options and impact analysis will be provided to the advisory groups after the options have been discussed with the advisory groups and the Ministers.

128. Subject to funding, a longer-term project will identify and develop estuarine attributes for ecological and human health in a similar manner to the NOF. The intent of this project is to provide councils with information about the limits that will need to be set upstream in order to achieved desired water quality in downstream receiving environments. This links to the sediment workstream.

Te Mana o te Wai and Māori values for freshwater health

Policy responses

Te Mana o te Wai

129. The intent of the policy responses that are being explored is to strengthen the concept of Te Mana o te Wai within the NPS-FM and more clearly direct councils and communities to use Te Mana o te Wai as the framework that guides decision-making and practice in freshwater management.

130. Changes to Te Mana o te Wai would not affect what is already required in the current NPS-FM. The current intent is to clarify linkages between requirements in the NPS-FM and Te Mana o te Wai, and how the concept is to be implemented in practice.

131. Specifically, this work would emphasise the need to provide for the health and well-being of the river first, to consider the freshwater system holistically, and to engage with communities, Iwi and hapū in decision-making and practice.

Māori values for freshwater system health and mātauranga Māori

132. The intent of the policy responses that are being explored is to strengthen the provisions and requirements for Māori values for freshwater system health and monitoring of mātauranga Māori to be incorporated in freshwater management.

133. Māori values for freshwater system health and mātauranga Māori policy options will complement and strengthen the concept of Te Mana o te Wai and the requirements in the NPS-FM (for instance in terms of iwi and hapū engagement and incorporating identified values, Tangata whenua roles and interests, complementing the ecosystem health value, providing for the water first, etc).

134. Changes in this work stream will strengthen and clarify current requirements, and provide further direction to councils.

Impacts

135. It is anticipated that the options would build on and clarify the existing approaches in the NPS-FM.

136. Social and cultural impacts: will be evaluated as part of the social and cultural impacts of whole package.

137. Economic impact: tbd

138. More detail on these options and impact analysis will be provided to the advisory group after the

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options have been discussed with the advisory groups and the Ministers.

Allocation of nitrogen

s 9(2)(f)(iv)

Who is affected?

Policy response	Social impacts	Cultural impacts	Economic impacts
	s 9(2)(f)(iv)	s 9(2)(f)(iv)	s 9(2)(f)(iv)

Impact testing

141. s 9(2)(f)(iv)

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s 9(2)(f)(iv)

s 9(2)(f)(iv)

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Andre Silveira

From: Bill Bayfield <bill.bayfield@ecan.govt.nz>
Sent: Friday, 5 April 2019 11:30 AM
To: Martin Workman
Subject: FW: CME report - for RCEO agenda
Attachments: CME messaging 4 April 2019.docx; Regional Sector Letter to Minister Parker re CME report 4 April 2019.docx; 6298 - National Compliance Monitoring - Summary Document.pdf; CME memo 4 April 2019.pdf; Cover - CME Report Concise Summary.pdf; Cover only - CME Full Report.pdf

Importance: High

Hi

See attached for your information. Happy to talk on Monday if you want.

Cheers
Bill

From: Robyn Harrison <robyn.harrison@horizons.govt.nz>
Sent: Friday, 5 April 2019 9:24 a.m.
To: RCEO Group <RCEO@horizons.govt.nz>; RCEO PA/EA <RCEOPA@horizons.govt.nz>; Clare Wooding <clare.wooding@lgnz.co.nz>; Natasha Muir <Natasha.Muir@horizons.govt.nz>; 'Iain Maxwell' <iain@hbrc.govt.nz>; 'Bill.McMaster@waikatoregion.govt.nz' <Bill.McMaster@waikatoregion.govt.nz>; 'Graeme.Campbell@gw.govt.nz' <Graeme.Campbell@gw.govt.nz>; 'Jonathan.Streat@es.govt.nz' <Jonathan.Streat@es.govt.nz>; Rina Douglas <Rina.Douglas@horizons.govt.nz>; 'Mike Nield (Mike.Nield@trc.govt.nz)' <Mike.Nield@trc.govt.nz>; 'Harriet.shelton@gw.govt.nz' <Harriet.shelton@gw.govt.nz>; 'Anke.Kole@gw.govt.nz' <Anke.Kole@gw.govt.nz>; Megan Tyler <Megan.Tyler@aucklandcouncil.govt.nz>; Pat Dougherty (NCC) <Pat.Dougherty@ncc.govt.nz>; 'Rohana Sergent' <Rohana.Sergent@hbrc.govt.nz>
Subject: FW: CME report - for RCEO agenda
Importance: High

Hi everyone

Apologies for the lateness, but please find attached papers that relate to Item 5 on the RCEO Agenda. Again, these have also been placed in the Sharefile.

The attachments are:

1) CME Memo – Bill to RCEOs
2) Letter sent to Minister Parker re CME report 4 April 2019
3) Comms messaging
4) National Compliance Monitoring – Summary Document
5) Final Report – Cover only
6) Concise Summary – Cover only

Kind regards

Robyn

Robyn Harrison | Executive Assistant to the Chairman and Chief Executive

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Who's putting local issues on the national agenda?

We are. LGNZ.
Te Kāhui Kaunihera ō Aotearoa

4 April 2019

Hon David Parker
Minister for the Environment
Parliament Buildings
Private Bag 18041
Wellington 6160

Dear Minister

I'm pleased to present you with the latest report written by Dr Marie Brown entitled *Independent Analysis of the 2017/18 Compliance, Monitoring and Enforcement Metrics for the Regional Sector.* Commissioned by the regional sector, the report is the first comprehensive review of the sector and its compliance, monitoring and enforcement functions under the Resource Management Act (RMA).

It builds on the work of the WynnWilliams report of April 2018 commissioned by the Regional Sector in response to Dr Brown's challenging report for EDS, *Last Line of Defence* which prompted considerable reflection within and beyond our sector about our CME role.

We welcome the findings of this recent report which shows that the regional sector is in a good position to recognise and promote CME as a key tool in the delivery of better resource management outcomes, particularly with respect to water. As a sector, we recognise that CME is an essential instrument to implement policy alongside consenting and non-regulatory means.

We note that the report has taken some time to reach you. This has allowed the sector to collectively work to lift its capability and capacity in CME. The report identified where there were gaps both collectively and individually for regional councils. That identification has allowed us individually and collectively to address those matters. The work of our Compliance and Enforcement Special Interest Group (CESIG) consisting of specialist CME staff from all regional councils assisted by others has been very effective in this regard. We seek now to bring the report and our work to your attention in order to promote it and to seek closer collaboration with your officials in several areas that we believe will serve to lift effectiveness of CME under the RMA.

Firstly, we would welcome the opportunity for the sector and particularly CESIG members to work together with the EPA Working Group to co-design the new RMA Investigations Unit and to determine how it will interact with Territorial Authorities and Regional Councils. We understand this work has already begun. We see a significant opportunity to work with this new unit on emerging challenging enforcement areas like end of life tyres and nutrients.

As we previously advised in December 2018, the Regional Sector supports the proposed new role for the EPA with the caveat that EPA action should only be available in circumstances where a particular council specifically requests, or agrees to, EPA assistance on an enforcement matter. The Regional Sector does not support law changes empowering the EPA to initiate enforcement activity without the support of the council concerned.

Secondly, we would seek to work with MfE and EPA officials to develop a robust regime that would both reflect our delivery and satisfy both our and your reporting needs. We again understand this work is underway but needs completion.

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Thirdly, we would welcome the opportunity to continue to discuss our suggestions contained in our previous report on CME for legislative change that would strengthen our enforcement role, including:

- Extending the limitation period from the current six months to 12; and
- Increasing infringement fines and penalties.

I look forward to the opportunity to talk with you in person about this report, our work programme in this area, and to reiterate the Regional Sector's commitment to strengthening compliance, enforcement and monitoring.

Yours sincerely,

Doug Leeder
Chair, Regional Sector
Local Government New Zealand

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Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Memo

Date	4 April 2019
To	RCEOs
CC	
From	Bill Bayfield, Chief Executive, Environment Canterbury

Regional Sector 2017/18 Compliance Monitoring and Enforcement Metrics

- This report was produced in December 2018, so has now been around for quite some time. It was a report commissioned from Dr Marie Brown, a recognised leader in RMA enforcement, by our Compliance and Enforcement Special Interest Group (CESIG). The report sought to improve the availability of data on CME across all 16 regional councils and unitary authorities. The key recommendations are **attached**.

- We have discussed the report previously, one of its strengths is that it was a first and it was prepared by an independent consultant. Inevitably it contained various assertions and comments that did not find favour with all. In my view, none of these warranted challenging or rewriting. A number will require consideration in further iterations.

- CESIG is effectively already leading the coordination of the actions being taken on the key recommendations for improvements, and individual councils are also addressing issues specific to them. CESIG are also engaged with Ministry for the Environment and EPA and other government departments addressing issues arising from this report and actions being undertaken by this government.

- Originally it was proposed to release the report following taking it to the Minister. For a variety of reasons this has not occurred. Our Comms SIG has generated messaging for such a release recently revised as **attached** to allow us to manage an unexpected release that surprisingly has not occurred. I am also arranging for a media release to be drafted and ready to go in the event that the report is made public and we need to "claim this space."

- As a result of the delays, for which I am largely responsible, the report has been discussed briefly with the Minister and MfE officials, receiving appreciation, and they have signalled a willingness to be briefed further. We are seen as responding well in comparison with other sectors, including central government sectors, to the CME capability challenge.

- I have drafted a letter for Doug Leeder to take the report to the Minister. We are hopeful that as we did last time, a number of Chairs and CEOs will be meeting the Minister shortly

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on freshwater and that we will piggyback CME for 10 minutes to that meeting. LGNZ are pursuing.

- If a meeting does not occur, then it is envisaged that the matter will be addressed at the meeting between the Minister and the regional sector in Invercargill on May 3rd. We understand from MfE that the Minister may well spend some time talking to CME in Invercargill. Of note is that CESIG will meet on the 5th and 6th May in Canterbury.

- I see no reason, given the dated nature of the report that individual councils can't use it and take it to committees or council. I would prefer that until the Minister has it and has discussed it with us, we keep such consideration at committees or council in confidence.

- Of note is that the 2018/19 year ends on 1 July and we will be considering a further iteration of the report. The minor matters like the role of CEO in enforcement that arose from the first iteration need to be discussed and if possible resolved before the second iteration is commenced. CESIG also needs to consider who prepares the second iteration, and is a consultant necessary?

- If all goes to plan and the Minister is briefed on it, any press release will be low-key, there is a suggestion of common release with MfE and the Minister. The attached comms messaging should be used by any individual council asked about the report as it pertains to them, however is suggested that if the query is to the sector, then using the same messaging we work through a single spokesperson.

- I am happy to be the spokesperson.

Yours sincerely,

Bill Bayfield
Chief Executive

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2017-2018 Compliance monitoring and enforcement metrics report

Comms messaging for media or third party enquiries

Prepared by Chrissie Morrison, Comms SIG co-convenor, 5 March 2019

Background

Dr Marie Brown of The Catalyst Group was contracted by the Waikato Regional Council on behalf of the Regional Sector's Compliance and Enforcement Special Interest Group.

Dr Brown is the author of *Last Line of Defence: compliance, monitoring and enforcement of New Zealand's environmental law,* which called for a stronger oversight, coherent national reporting and greater capacity at a ministry level to ensure at a local level regional authorities were delivering compliance and monitoring under the Resource Management Act in a consistent way. The report went on to suggest that while the Regional Sector is demonstrating an increased technical capacity that political influence on decision making was widespread.

Since Dr Brown's Environmental Defence Society report, other Environmental NGOs such as Forest & Bird and Fish & Game, have done their own reports and/or media stories on the sector's compliance status. Irrespective of how the data has been collected and interpreted, context and the sector's voice has been very much missing from the conversation.

More recently the Minister for the Environment has signalled changes to the way compliance and monitoring is undertaken. This has included the release of *Best Practice Guidelines Compliance Monitoring and Enforcement* under the Resource Management Act 1991 and the proposal for the EPA to have a new role in Enforcement.

A report conducted by Wynn Williams for the sector assisted with the crafting of a letter to Minister Parker last year. However, this new report, *Independent Analysis of the 2017/2018 Compliance, Monitoring, and Enforcement Metrics for the Regional Sector*, completed in December 2018 is the first comprehensive review of our sector and its Resource Management Act (RMA) specific CME functions.

With an increasing spotlight on the role of regional councils and a focus on raising our reputation and relevance, the CME report is a timely opportunity to tell our story.

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Overarching messages

1. Regional and Unitary Councils are regulators under the Resource Management Act, primarily around the sustainable use of the country's natural resources.
2. Effective compliance and enforcement is essential to achieving good environmental outcomes.
3. This report is the first time in NZ that a full overview of our practice has been completed.
4. We know what is needed, have the dedicated resources and systems and have been working hard to make a real effort towards achieving consistency across our compliance and enforcement practices the country.
5. Report has identified where there are gaps, and we are working to set standards for best practice to achieve effective compliance and enforcement.
6. These standards will be available for individual councils to assess their own systems and make improvements within their context. For example, Auckland and Wellington's land use and catchments are vastly different to small urban/large rural regions such as the West Coast and Southland.
7. We undertake audits of our compliance and enforcement practice – using our peers – to identify where we can improve practice.
8. Working collectively is enabling our sector to lift our capability and capacity.

Secondary messages

1. Across the 16 regional and unitary councils, 436 FTEs are employed in CME roles.
2. Compliance monitoring is funded through mechanisms such as rates and Section 36 charges.
3. Councils administer a total of more than 200,000 active resource consents, of which nearly 50,000 were deemed to require monitoring (based on environmental effect?).
4. Collectively the sector receives nearly 30,000 complaints, 87 per cent of which are responded to, annually.
5. 92 per cent of consents requiring monitoring have been done so, with high variable levels of compliance region to region.
6. In response to non-compliance the sector issued more than 4,000 formal actions - 905 formal warning, 1844 abatement notices, 1289 infringement fines and applied for 21 enforcement orders.
7. Page 82 of the recently released *Best Practice Guidelines Compliance Monitoring and Enforcement* under the RMA states that "Currently a number of councils have a policy of the chief executive approving prosecutions. This practice is acceptable, provided appropriate measures are in place to ensure a robust and transparent decision making process. The chief executive must be independent of political influence, have enforcement knowledge and experience, and an understanding of the council's enforcement policies and priorities".
8. It is important to note that serious offending takes time to investigate and prosecute – sometimes up to two years.
9. 49 individuals and 60 corporate defendants were convicted, with the dominant offence being discharge of contaminants. Collectively, the prosecutions resulted in $2 million in fines in addition to other approaches such as restorative work.

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10. Cost recovery equates to approximately 2 per cent of the total possible fines for the entire suit of convictions ($90 million).
11. The sector also uses other regulatory tools such as enforcement orders, infringement notices and consent reviews for non-compliance issues.

Regional snapshots are provided on pages 75-78 of the report. Below are some suggested topics councils may be approached for further information on. It is recommended you note what has been identified as gaps for your council and prepare messages appropriate to your CME approach. Some topics have been pre-populated with suggested answers.

1. **Unitaries have competing demands regional vs local territorial authority functions.**
2. **Council is under resourced.**
3. **Limited/no prosecutions in the reporting year.**
   It is important to note that serious offending takes time to investigate and prosecute– sometimes up to two years. In the reporting year, 49 individuals and 60 corporate defendants were convicted nationally, with the dominant offence being discharge of contaminants. Collectively, the prosecutions resulted in $2 million in fines in addition to other approaches such as restorative work.
   Since the 2018 report's completion, XX Council has had XX successful prosecutions including x, y, and z.
4. **Competing demands of regional vs local territorial authority functions.**
5. **Bespoke approach to managing compliance, constraining national comparative datasets/ need for improvement in information management, including datasets and formal tools.**
   The report has identified where there are gaps, this is helping us to set standards for best practice. These standards will be available for individual councils to assess their own systems and make improvements within their context. Our Council is doing….
6. **Provision for CE to participate in decision making on prosecutions.**
   Page 82 of the recently released Best Practice Guidelines Compliance Monitoring and Enforcement under the RMA states that "Currently a number of councils have a policy of the chief executive approving prosecutions. This practice is acceptable, provided appropriate measures are in place to ensure a robust and transparent decision making process. The chief executive must be independent of political influence, have enforcement knowledge and experience, and an understanding of the council's enforcement policies and priorities".
7. **Limited codification for prioritising permitted activity.**
8. **Reliance on incident response.**
9. **Education and non-regulatory work programmes.**
10. **No active enforcement policy.**

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SUMMARY

REGIONAL SECTOR INDEPENDENT ANALYSIS

2017/18 compliance monitoring and enforcement metrics

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The Resource Management Act is New Zealand's flagship environmental legislation and its implementation is highly devolved. Achieving the purpose of the Act – the sustainable management of natural and physical resources – is dependent on the quality of that implementation. Monitoring and reporting on the activities and performance of agencies charged with applying the Act is pivotal to understanding our nation's stewardship of the environment and to reviewing and validating the institutional arrangements in place to carry out that important role.

Compliance monitoring and enforcement (CME) is a significant tool in achieving the overarching purpose of the RMA. Carried out poorly it can result in slippage that erodes the potential of the regulatory regime to achieve its statutory goals. Carried out in a robust manner, it can assist in driving positive environmental

outcomes and mitigating failures elsewhere in the policy process. However, data on performance of the agencies charged with the CME role has always been patchy, and councils have historically been provided little overarching guidance and support.

This independent report represents a regional sector-led effort, under the leadership of the Compliance and Enforcement Special Interest Group (CESIG), to improve the availability of data on CME functions. This inaugural survey saw all 16 of New Zealand's regional councils and unitary authorities (collectively referred to as the 'regional sector') participate. The dataset – while patchy due to various factors – provides a very interesting insight into the conduct of CME agencies under the RMA, and its value will only increase in subsequent iterations.

Using the data from this survey, Dr Marie Brown has produced the most comprehensive report on CME activities undertaken by the regional council sector in the RMA's 27 year history. It also exceeds the publicly available detail on the activities of any other environmental regulatory regime in the country. Dr Brown says this data leaves regional councils subject to criticism and analysis, which is brave and should be commended. Throughout the analysis of the survey results, several key issues surfaced, which provide something of a 'blueprint' for improvement, identifying the key sector-level priorities to enhance operations in the coming years.

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Key recommendations for improvements:

- While variation is to be expected given the diffuse nature of the regime and lack of oversight in the past, there is ample opportunity for the sector to now work to standardise approaches to fundamental CME tasks, which would enable national scale data to have much stronger value due to increased comparability.
- Resourcing for CME is varied, but overall appears to be relatively low in several regional councils – possibly too low to carry out the minimum requirements set down within the newly promulgated Best Practice Guidelines. The variation is not generally explained by relative wealth, land area or population, but appears often driven by other matters.
- Many regional councils were unable to provide some relatively basic Information for these survey questions. While information management is doubtless an area in which the sector has improved greatly in recent years, further development is required to maintain reasonable levels of transparency.
- The internal policy framework for CME in many agencies is incomplete or has aspects that open regional councils and individuals within those councils up to reputational risk from an inability to demonstrate fair and clear decision-making processes. Independence, transparency and consistency are fundamental components of being a credible regulator.
- Some regional councils perform consistently well across all or most measures in this survey, while the reporting of others demonstrates some significant shortcomings that should be addressed. Continuing to administer a robust and regular reporting framework, including review and improvement of the current suite of metrics, will help to drive performance improvement year on year.
- Unitary authorities do not sufficiently demarcate their regional vs district CME activities in their information management systems, meaning the level of transparency on regional-level operations is lower than their regional council counterparts. This erodes both the comparability of the collective dataset and has reputational implications for the unitary councils.

Monitoring reports such as this one help to discern areas of strong performance and areas where improvement is needed. They also help to give insight into the appropriateness of institutional arrangements and provide public transparency. They are of greatest value when conducted regularly and consistently over time, with agencies gradually orienting their information management system such that they can fulfill the data requirements comprehensively.

This document is a summary of the full report which is available upon request.

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RMA compliance monitoring and enforcement 2017/18

Businesses and landowners

Information from the public

50,000
active resource consents require ongoing monitoring

30,000
RMA complaints lodged

92%
have been monitored

87%
have been responded to

RMA breaches resulted in

4000+ formal actions

- **1289** infringement fines
- **904** formal warnings
- **21** enforcement orders
- **1844** abatement notices

Regional sector

16
regional and unitary councils around the country employ

436
staff who are dedicated to RMA CME

Prosecutions

Most common serious breach:
Discharging contaminants to environment

$2 million in fines against polluters

- 49 individuals convicted
- 60 companies convicted

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Monday, 6 May 2019 8:14 AM
To: ESoal@irrigationnz.co.nz
Subject: FW: Meeting request from Harmonic Analytics and Regen
Attachments: Moving the Majority.docx

Hi

I received the attached and would appreciate your feedback on it.

Thanks

Martin

From: Bridgit Hawkins <bridgit.hawkins@nzregen.co.nz>
Sent: Friday, 3 May 2019 1:24 PM
To: Phil Shepherd <phil@harmonic.co.nz>
Cc: Martin Workman <martin.workman@mfe.govt.nz>; James King <James.King@mfe.govt.nz>; Bryan Smith <Bryan.Smith@mfe.govt.nz>
Subject: Re: Meeting request from Harmonic Analytics and Regen

Hi Martin & James,

Thank you very much for your time last month. In the intervening time I have been speaking about this proposal with various peers and colleagues in the sector, particularly in Canterbury, and have had overwhelming support to progress it further.

I have attached a draft of a proposed approach that comes at the challenge from the opposite direction - farmer up rather than policy/regulation down. What I propose is to test this approach and if successful to work on how this can then be scaled out for significant impact.

I would appreciate your feedback on how this might fit with MPI/MfE's framework for supporting change in the sector as a concept, and what would be the appropriate fund to investigate. Any actual proposal would be led by an irrigation scheme (or schemes) and have support form Irrigation NZ and other parties in the sector.

Regards,
Bridgit

BRIDGIT HAWKINS
CEO

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0274 119 336 Wellington, 6145
bridgit.hawkins@nzregen.co.nz I nzregen.co.nz

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On Mon, Mar 18, 2019 at 12:06 PM Phil Shepherd <phil@harmonic.co.nz> wrote:

> Dear Martin and James
>
> It was a real pleasure talking on Friday. I realise the afternoon may not have gone to plan, but I thought I'd check to see if your meeting with Grant Brydon went ahead and if Regen was discussed.
>
> In the meantime, i know Bridgit is speaking with WIL about leading the funding application and drafting a two pager.
>
> All the best, Phil
>
> On Wed, 6 Feb 2019 at 21:20, Phil Shepherd <phil@harmonic.co.nz> wrote:
>
> > Dear Iggy, Bridgit, Victoria, Martin and Bryan
> >
> > I appreciate you arranging this meeting time. I am away from Wellington and on leave until Feb 25. I believe it will be best to arrange a time with Bridgit in my absence.
> >
> > If a time cannot be confirmed prior to Feb 25, please let me know and I will try and join.
> >
> > I hope it goes well.
> >
> > All the best, Phil
> >
> > On Tue, 5 Feb 2019 at 13:50, Ignatius Menzies <Ignatius.Menzies@mfe.govt.nz> wrote:
> >
> > > Dear Bridgit and Phil,
> > >
> > > Martin Workman and Bryan Smith from MFE's Water Directorate are happy to meet with you (CC'd in). Victoria Young is Martin's PA and has sent through some possible meeting times (see email below). Can I please ask you guys to liaise with Victoria to arrange a time that suits?
> > >
> > > All the best,
> > >
> > > Iggy
> > >
> > > ---
> > >
> > > **From:** Victoria Young <Victoria.Young@mfe.govt.nz>
> > > **Sent:** Tuesday, 5 February 2019 1:32 PM
> > > **To:** Ignatius Menzies <Ignatius.Menzies@mfe.govt.nz>
> > > **Subject:** RE: Meeting request from Harmonic Analytics and Regen
> > >
> > > Hi Iggy,

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Martin has some times available the week of the 18th Feb.

Tuesday 19th between 9am-11am

Wednesday 20th 2:30 – 3:30

Thursday 21st 10am – 11am and 2pm - 4pm

Thanks

Vic

Ngā Mihi

Victoria Young – PA to Directors of Water: Martin Workman & Katherine Meerman
Ministry for the Environment – Manatu Mo Te Taiao
Cellphone: 022 014 0094 Email: Victoria.young@mfe.govt nz Website: www mfe govt.nz
Environment House, 23 Kate Sheppard Place, Thorndon, PO Box 10362, Wellington 6143

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DISCUSSION PAPER

Moving the Majority: what will it take to get the majority of irrigators using technology to improve irrigation practice – SOON.

Prepared by Bridgit Hawkins

CEO, Regen

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Moving the Majority

How can we support the majority of irrigators to be confident to invest in technology and change irrigation management practice?

The Goal

Improving water quality is a goal for all New Zealand. To achieve the improvement aimed for in the timeframe desired will take many significant changes, implemented quickly, to many activities to have the required impact on water quality. Irrigation, and irrigation of dairy farms in particular, has been identified as being a significant contributor to the deterioration of water quality across Canterbury.

Increasing pressure is coming to irrigators to reduce water use and turn around water quality outcomes in the near future. For individual irrigators this appears to put their current farm system at risk as they associate less irrigation with a reduction in potential grass growth. However, a significant amount of irrigation is done based on limited or no data or consideration for future weather and is driven by a 'just in case' approach. But there is ample evidence that applying the right amount of water at the right time not only reduces nitrogen leaching and wastage of water but improves pasture growth.

The Challenge

<u>Knowledge set</u>

- There is limited knowledge by irrigators of the soil/water interactions and so how they can optimise their ability to irrigate.
- A growing number of farmers have some form of soil moisture monitoring installed, but a limited number really understand the data presented or how they can use this data to optimise irrigation actions.
- There are many 'rural myths' about irrigation that perpetuate and make the knowledge set confusing and contradictory

<u>Risk appetite</u>

- Farmers fear of the consequences from under-watering (reduced pasture growth) is much greater than fear of the consequences from over-watering (increased nitrogen leaching, soil damage).
- There is risk to changing their current practice that the outcome will be negative. Without understanding the potential financial benefits from the spend on technology and the effort to learn, farmers are reluctant to take the chance, preferring to keep the status quo.

<u>Cost/Benefit</u>

- Calculators that demonstrate the cost/benefit from better irrigation scheduling are treated with scepticism by farmers; the majority do not believe they are that far off being optimum so don't believe they have much to gain from savings from reduced irrigation – less power use, improved pasture growth and less water used.

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Wider Context

The current regulator framework in place to address irrigation's impact on water quality centres on the Farm Environment Plan (FEP) process. These requirements within the Irrigation section of a FEP have been built upon the industry definition of best practice that requires justification of the agronomic requirement for each irrigation event. FEPs have been put in place by every farmer in the Canterbury region, and now been audited at least once; what is deemed 'acceptable' for now has been set. This is generally step 1 towards achieving best practice, with the expectation that the farmer will continue to add to the set of technology and improved practice in the time leading up to the next audit. So, what will be 'acceptable' in 2-3 years' time will be closer to best practice.

This approach, while setting a baseline of expectation, also drives a 'tick the box' approach to compliance and focuses on achieving the next requirement at the end of the time period. Over a period of time improved practice will happen, but the question is; will improved water quality outcomes be achieved in the timeframe New Zealand is expecting and the Government has set with the current approach?

Additionally for farmers, improving irrigation practices is one of many farm practices that are under scrutiny and practice change is required to be made; health & safety, animal welfare, milk quality, staff management to name a few. This is overwhelming, especially for farmers not part of a larger farm group with management support and is doubly difficult if they are struggling to understand the problem or exactly what is expected to correctly address it.

Current Status

Already doing it well and have been for years.

Small number so have limited impact on overall water quality even though they are doing well.

FEP audit process will capture these. Will probably end up exiting the industry.

Small number but likely to have impact on overall water quality due to very poor irrigation practice.

The majority by number and by the potential to impact water quality.

Addressing these farmers is the key

Key question

How do we give the 'majority' farmers confidence to invest in technology and then use it to make better irrigation management decisions?

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Hypothesis

If we start by asking farmers what they need to know to reduce the risk for them individually to use technology in irrigation management, and then answer those questions, this will accelerate the purchase and use of technology which in turn will lead to improved practice. The improved practice will lead to improved water quality outcomes.

Experiment

Run a series of expert facilitated, farmer centred, workshops that identify their knowledge gaps and reservations surrounding using technology to improve irrigation practice. Workshops to be centred in irrigation schemes or farmer clusters, to encourage participation and mobilise peer persuasion to engage.

When the farmer groups' needs are clearly understood, bring in expert practitioners to provide the knowledge required, clear examples of technology solutions that meet their needs and how they can access them.

Measure the uptake and use of technology for irrigation management by the participants in the farmer workshops over the next 3 months, 6 months and one year from the workshops.

Measure the uptake and use of technology for irrigation management by the neighbours of the participants in the farmer workshops over the next 3 months, 6 months and one year from the workshops.

Outcome

Have a clear and detailed understanding, from the farmers' perspective, of what is stopping/slowing them from using technology to improve irrigation management practice and gain the benefits for their farm business from this.

Have an understanding if addressing the issues identified in a way that is relevant to the farm business leads to a greater and faster adoption of the use of technology.

Should the hypothesis be proved this will provide a blueprint for accelerating the rate of irrigation management improved practice and so accelerate the improvement in water quality outcomes for New Zealand compared to the status quo rate of change.

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Andre Silveira

From: Governance <Governance@ecan.govt.nz>
Sent: Tuesday, 20 August 2019 3:59 PM
To: Martin Workman; Hayden Johnston (Parliament); Vicky Robertson
Subject: Letter re Office of the Attorney-General decision following Forest and Bird discontinued proceedings
Attachments: Letter re Office of the Attorney-General decision following Forest and Bird discontinued proceedings.pdf

Tēnā koe

Please find attached a copy of a letter from Chair Steve Lowndes re Office of the Attorney- General decision following Forest and Bird discontinued proceedings sent to Hon David Parker .

Ngā mihi
Bernie Campbell

Governance

Environment Canterbury

PO Box 345, Christchurch 8140
Customer Services: 0800 324 636
24 Hours: 0800 76 55 88
ecan.govt.nz

Governance@ecan.govt.nz

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Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636
200 Tuam Street
PO Box 345
Christchurch 8140
www.ecan.govt.nz/contact

20 August 2019

Hon David Parker
Minister for the Environment
Associate Minister of Finance

d.parker@parliament.govt.nz

Dear Minister

As you might be aware, in May this year Forest & Bird filed proceedings in the High Court against the Auditor General and Environment Canterbury, challenging the exemptions that the OAG has issued in favour of Environment Canterbury's Zone Committees for the last nine years. The Zone Committees (10) were joint committees with the region's territorial authorities that gave effect to Canterbury's Water Management Strategy. These exemptions allowed Zone Committee members with conflicts of interest to participate in discussions and developing Committee consensus recommendations to councils on matters before the Committees.

The Auditor-General has decided to revoke those exemptions and Forest & Bird has accordingly agreed to discontinue the proceedings.

This resolution of the High Court proceedings, and the Auditor-General's withdrawal of the exemptions, have no effect on the Resource Management Act plans and draft plans flowing from the consensus recommendations already made by Zone Committees (through the development of their Zone Implementation Programmes and Zone Implementation Programme Addenda). There is also no impact for committee members around their involvement in the decisions the Zone Committees have already made.

Environment Canterbury and the Territorial Authorities in Canterbury will now work closely with the Zone Committees to ensure that their future work can continue in a way that complies with the law now these exemptions are no longer in place.

In the meantime, the implementation of the Canterbury Water Management Strategy will continue. The collaborative work of the Zone Committees remains an important part of the implementation of the Strategy as affirmed in the recent Canterbury Water Management Strategy Fit for the Future project conducted by the Canterbury Mayoral Forum.

The Canterbury Mayoral Forum believes strongly in the merits of the collaborative process. Using this community-led process across the last decade has allowed us to make significant progress in developing and implementing a robust planning framework for water management in Canterbury.

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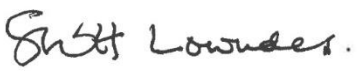
Collaboration has helped:

- communities to accept that there are problems and that something needs to be done;
- integrate (within the planning process) science, planning theory, differing viewpoints, stories and field-trips, leading to positive outcomes;
- ensure that rūnanga are in no doubt that their views have been included in the committees' recommendations.

We believe that we can continue to apply a collaborative approach to our planning and implementation processes so we can continue to enjoy the benefits of that approach. We also await with interest the report from the Resource Management Review Panel and its recommendations on the future of the collaborative planning process under the RMA.

If you have any questions or require clarification, Chief Executive Bill Bayfield and General Counsel Catherine Schache are available to assist (bill.bayfield@ecan.govt.nz; catherine.schache@ecan.govt.nz).

Yours sincerely



Steve Lowndes
Chair

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Andre Silveira

From: Elizabeth Soal <ESoal@irrigationnz.co.nz>
Sent: Friday, 24 May 2019 1:27 PM
To: Martin Workman; Grant Bryden; Andy Barbati; Neil Williams
Subject: Memo re Building Trust Project review
Attachments: Memo re Building Trust Project review.docx

Kia ora everyone,

In anticipation of Monday's meeting, please find attached a brief Memo in relation to INZ's "Building Trust" project.

I look forward to discussing this in more detail when we meet.

Have a good weekend,
Elizabeth

Elizabeth Soal
Chief Executive Officer
Irrigation New Zealand Incorporated

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Memo – in confidence

To:	Martin Workman, Ministry for the Environment Grant Bryden, Ministry for Primary Industries Neil Williams, Ministry for Primary Industries Andy Barbati, Environment Canterbury
From:	Elizabeth Soal, Chief Executive, Irrigation New Zealand
Date:	24 May 2019
Purpose:	For information and discussion
Title:	Review of 'Building Trust' project

Introduction

This Memo provides background information on the Irrigation New Zealand (INZ) project 'Building Trust' which has been funded primarily through the Sustainable Farming Fund (SFF), with a significant contribution from Environment Canterbury, and various primary sector partner organisations.

Project background

The Building Trust project was approved under the SFF in the first half of last year, with a commencement date of 2 July 2018 and an estimated completion date of 26 June 2020.

The intended outcomes of the project[1] were:

To provide catchment communities with transparent information about the tangible actions being undertaken by farmers to address water quality issues over time:

- *Provision of catchment specific farming practice change information and trends on combination with water quality and quantity states and trends*
- *An ability to easily and factually show the catchment water story*
- *Better targeting of resources and support to the areas of practice change in greatest need*
- *Improved understanding of the effectiveness of specific or combinations of practice changes within the catchment*
- *Indirect application of peer pressure to the uptake of practice change "you're one of x% who have not achieved this."*

It was intended that a "visual and engaging interface will be developed to display this – making information useful and easy to digest for both farmers and their communities."

[1] Text taken directly from SFF Grants Portal information

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Two catchment case studies were to be used for the project – the Lower Waitaki and Selwyn-Te Waihora. These catchments were selected due to the significant data collection being undertaken by irrigation entities in these catchments (the Waitaki Irrigators Collective and Central Plains Water, respectively).

The need for review

As incoming Chief Executive of INZ, I believe that it is timely to review the project for the following reasons:

- Reduced INZ staff resourcing has seen less progress made in late 2018 and early 2019 than was anticipated.
- A lack of clarity as to what community stakeholders would want out of the project.
- Potential risks in relation to the creation of a large data network or system and a subsequent information portal that may not be financially sustainable in the future.
- The pace of policy and technology development in this area superseding some of the drivers of the project (such as National Environmental Standards, Integrated Farm Planning, national principles for good farming practice, and the benchmarking and catchment-scale modelling available under OverseerFM).

Areas for discussion

The Government is clearly committed to ensuring that farm systems in all regions meet (at least) minimum good practice standards.

Irrigation schemes (particularly in Canterbury and North Otago) are some of the leaders in the primary sector in developing and implementing sophisticated environmental management systems that include environmental farm planning, external auditing, extensive environmental monitoring processes, and other environmental programmes (such as riparian management, stream augmentation, etc.).

The schemes therefore have extensive data available that could be used to link good practices on farm with environmental outcomes. This includes farm environment plan auditing information, water quality and quantity data, and environmental inventories (such as wetland creation).

INZ is keen to explore opportunities with government to leverage off these rich data sources. We wish to demonstrate how our industry's leadership in farm practice changes can be linked to environmental and other outcome areas. It is necessary to identify what is needed by local and central government and the wider community, and how we can integrate our schemes' information with other systems, without duplicating effort.

We are open to rescoping and refining the current project or developing a new longer-term programme to meet the needs of the government, the community, and our members.

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Andre Silveira

From: Louise McDonald <louise.mcdonald@ecan.govt.nz>
Sent: Tuesday, 16 July 2019 4:28 PM
To: Governance; d.parker@ministers.govt.nz; n.mahuta@ministers.govt.nz
Cc: mark.batt@parliament.govt.nz; Hayden Johnston (Parliament); Helen Wyn (DIA); Cheryl Barnes; Martin Workman
Subject: READ: Six month report to Ministers from Environment Canterbury as required under the Environment Canterbury (Transitional Governance Arrangements) Act 2016.

Kia ora,
We have received requests from the media for the six-monthly report provided to the Ministers as below.
Can you confirm that the Ministers have seen the report and that it is ok to make the report public?
Ngā mihi
Louise

From: Governance
Sent: Friday, 21 June 2019 4:23 PM
To: Governance <Governance@ecan.govt.nz>; d.parker@ministers.govt.nz; n.mahuta@ministers.govt.nz
Cc: mark.batt@parliament.govt.nz; joe.beaglehole@parliament.govt.nz; hayden.johnston@parliament.govt.nz; Helen Wyn <Helen.Wyn@dia.govt.nz>; cheryl.barnes@mfe.govt.nz; martin.workman@mfe.govt.nz
Subject: HPE CM: Six month report to Ministers from Environment Canterbury as required under the Environment Canterbury (Transitional Governance Arrangements) Act 2016.

Tēnā kōrua,
Attached is the covering letter with the six month report to Ministers from Environment Canterbury as required under the Environment Canterbury (Transitional Governance Arrangements) Act 2016.
This report is for the period to April 2019 and was approved in the public excluded part of our Council meeting held on 20 June 2019.

Nāku iti noa, nā
Louise McDonald
Senior Committee Advisor
Governance

Louise McDonald
Senior Committee Advisor
Environment Canterbury
Christchurch Office

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21 June 2019

Hon David Parker & Hon Nanaia Mahuta
Minister for the Environment &
Minister of Local Government
Parliament Buildings
Private Bag 18041
Wellington

By email: d.parker@ministers.govt.nz
n.mahuta@ministers.govt.nz

Dear Ministers Parker and Mahuta,

Environment Canterbury – Six-monthly report on the management of fresh water in Canterbury

I enclose, on behalf of the Canterbury Regional Council, our *Six-Monthly Report*. We are required to report to you as Ministers for the Environment and of Local Government every six months under the Environment Canterbury (Transitional Governance Arrangements) Act 2016. This is the fifth *Six-Monthly Report* we have delivered to Ministers.

This biannual report is for the reporting period 27 October 2018 through 27 April 2019 and covers the three agreed reporting requirements;

1. Progress on the Canterbury Land and Water Regional Plan;
2. Progress on other plans relating to the management of freshwater within the Canterbury region; and
3. Progress on the implementation of the Canterbury Water Management Strategy (CWMS).

The next reporting period will be to 27 October 2019.

We continue to make good progress in setting limits with our communities through the RMA planning framework and supporting industry to manage water and associated matters, and we are increasingly focusing our resources on implementation and action on the ground to improve water management. Our monitoring for compliance, education and enforcement programmes are prioritised based on risk and impact of the activities, and these programmes continue to be developed working with industry and stakeholders to ensure they are pragmatic and effective.

Environment Canterbury continues to lead the "Fit for the Future", a project under the auspices of the Canterbury Mayoral Forum, to ensure that the CWMS, particularly its targets and goals, are fit for the future needs of the region and can deliver the outcomes desired by the community for freshwater. We have held many workshops with key stakeholders to identify intermediary 2025 and 2030 goals. The draft goals were approved by the Mayoral Forum at their meeting on 24 May 2019.

Environment Canterbury is strongly aligned to delivering action on the ground in each zone through the community-led CWMS zone committees, and our zone delivery teams.

We continue to work collaboratively with industry and have established a shared understanding of industry-agreed Good Management Practice (GMP). We are now seeing action on farm to improve water and land management as more intensive farmers demonstrate they are operating at GMP or better through Farm Environment Plans (FEPs).

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The Immediate Steps Biodiversity Programme continues to support freshwater-related restoration projects for biodiversity Since 2010, $10.3 million has been approved by zone committees for over 560 projects across Canterbury.

Significant investment and progress continues on the piloting of environmental infrastructure for high value waterways in Selwyn and Ashburton districts. The Council acknowledges the government's commitment to existing funding for these initiatives.

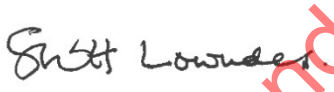
Environment Canterbury and Ngāi Tahu's joint Tuia work programme has been running since 2012 and is aimed at achieving sustainable environmental outcomes, perpetuating and supporting customary practices, and providing for development and effective iwi participation. We continue to build on the relationship with Ngāi Tahu and continue to work with Ngāi Tahu to reflect mātauranga Maori requirements of the NPS-FM.

We continue to make progress in restoring the mauri and ecology of significant waterbodies in the region including Te Waihora/Lake Ellesmere and Wainono Lagoon in partnership with papatipu rūnanga and the Ministry for the Environment. Phase Two of the Te Waihora restoration project is well underway with a Mātauranga Māori monitoring programme and an applied research methodology have been developed as part of the Whakaora Te Ahuriri project. Work continues on the Wainono Restoration Project to protect mahinga kai, improve sediment management and increase plantings. Continued support for this project in the shape of co-funding for the main project, Whakaora Te Ahuriri has been welcomed via the Government's *Freshwater Improvement Fund*.

Government investment continues to be crucial to the success of on-ground biodiversity and freshwater initiatives in Canterbury, and we want to continue to work with Government to progress projects that deliver the outcomes sought by our communities and Government priorities.

We would welcome the opportunity to discuss with you our progress in managing freshwater in Canterbury and further collaboration to assist us to achieve better water management in the least time possible. Please don't hesitate to contact my Executive Assistant, Karen Stanley: DDI 027 446 5323, Governance@ecan.govt.nz.

Yours sincerely,



Steve Lowndes
Chair

Encl: **Reporting to Ministers – Six Month Report**

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Report to Ministers – Six Monthly Report

April 2019

Reporting on progress made in respect of issues relating to the management of freshwater in the Canterbury region.

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Background

The Environment Canterbury (Transitional Governance Arrangements) Act requires reporting to the responsible Ministers (Environment and Local Government) on progress made in respect of issues relating to the management of freshwater in the Canterbury region.

The requirements of the Act:

- The first reporting period runs from the date of the first council meeting (27 October 2016).
- The reporting interval is biannual.
- Environment Canterbury must provide a report as soon as practicable after the end of each period.

The subject of the reporting is to include:

a. progress on the Canterbury Land and Water Regional Plan;
b. progress on any other plans relating to the management of freshwater within the Canterbury region; and
c. progress on the implementation of the Canterbury Water Management Strategy.

This is the fifth report for the 2016 to 2019 local authority election-cycle period and covers the period 27 October 2018 to 27 April 2019.

A description of the sources of data/information for the content of the reporting is provided in the table below.

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Agreed reporting structure

Reporting requirement	Source of information
1. Progress on the Canterbury Land and Water Regional Plan;	Progress against RMA Planning schedule; Update, (map of Canterbury based on LTP schedule for the RMA planning framework)
2. Progress on any other plans relating to the management of freshwater within the Canterbury region;	Progress against RMA Planning schedule; Update, (map of Canterbury based on LTP schedule for the RMA planning framework)
3. Progress on the implementation of the Canterbury Water Management Strategy (as below);	
a) Progress with, and use of, the matrix of good management and supporting material such as the farm portal and ECan's farm plan auditing project;	• MGM and Portal Project update • Estimates of FEPs completed, • Number of Farm Audits completed, • Number of Farms registered on the ECan Farm Portal, and • Number of Land Use Consents granted
b) Water metering including global consents held by irrigators: reporting of consented versus actual takes and any enforcement and compliance actions taken as a result of breaches of consents;	Water Metering project produces measures from the water metering databases and systems Updates on Compliance and Enforcement Action
c) Zone committee progress with developing or implementing zone implementation programmes;	• Quarterly Updates on each Zone Work Programme updates • Zone Annual Reports
d) Progress reports on council funded freshwater related restoration projects;	• Immediate Steps Projects • Freshwater Projects from Zone Work Programmes • Regional Flagship Projects; Whakaora Te Waihora and Wainono • MAR and TSA Environmental infrastructure projects
e) Progress on the water storage and distribution infrastructure for meeting the CWMS targets.	Infrastructure Work Programme.

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Highlights for the period to April 2019

Note: Updates following the previous Ministers Report are provided in blue.

Progress on the Canterbury Land and Water Regional Plan (LWRP)

- The LWRP is fully operative.
- Part A of Plan Change 5 to the LWRP revises the regional level approach to farm nutrient management and incorporates nutrient discharge limits based on industry agreed Good Management Practices (GMP). Part A was made operative on 1 February 2019. As part of the process to settle appeals on the plan change, the external working group continues working through implementation challenges.
- Plan Change 7 to the Land and Water Regional Plan (LWRP) is currently under development and is being prepared in three parts. The Part A is an omnibus change that proposes changes to region-wide policies and rules in the LWRP. Notification of the plan change is currently scheduled for 20 July 2019 (subject to Council decision-making).

Progress on Sub-Regional plans to the LWRP

- Plan Change 2, Hinds was made operative from 1 June 2018.
- Plan Change 3, South Coastal Canterbury was made operative from 1 September 2017.
- Plan Change 5, Part B which introduces specific water quality limits and related policies and rules for the Waitaki catchment only was made operative on 1 February 2019.
- Orari-Temuka-Opihi-Pareora zone: Part B of PC7 was developed in in collaboration with the OTOP zone committee and looks to make further reductions beyond GMP and increase in minimum flows. Notification of the plan change is currently scheduled for 20 July 2019 (subject to Council decision-making).
- Waimakariri zone: Part C of PC7 was developed in in collaboration with the Waimakariri zone committee and looks to make further reductions beyond GMP and increase in minimum flows. Notification of the plan change is currently scheduled for 20 July 2019 (subject to Council decision-making).
- Hurunui Waiau zone: Submissions closed on 31 May 2019; 13 submissions were received.

Progress on implementation of Canterbury Water Management Strategy

a) Matrix of Good Management (MGM) and Farm Portal

The Farm Portal has been updated to ensure alignment to the framework agreed through the Nutrient Management Plan Change 5 to the LWRP and to better support the Farm Environment Plan (FEP) Audit Programme. It is currently available at https://farmportal.ecan.govt.nz/.

- There are 24 auditors certified under the Canterbury Farm Environment Plan Auditor Certification Programme and one application in process.
- 2,900 (approximately) intensive farms are expected to demonstrate they are at or better than Good Management Practice. Of these:
  - 1,500 farms are being managed via their irrigation scheme consent

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- More than 600 out of the 1,400 remaining targeted farms have applied for a land use consent – with many of the rest working on nutrient budgets as preparation for consents
- Approximately 2,345 farms involved in Environment Canterbury campaigns have completed an FEP
- 1,587 farms have been audited at least once.

b) Water Metering and Compliance

- Environment Canterbury manages the largest number of water takes of any regional council in New Zealand. There are 7,910 water takes across 5,085 consents of 5 l/s and above.
- 6,294 water takes are now metered and action plans are in place to ensure that the remainder of the consent holders meet the requirements of regulations.

c) Zone Committee - Zone Delivery

- Zone committees continue to work to the programme agreed to with their zone teams.
- The main focus across these teams is on getting farmers to Good Management Practice, working with industry and with farmers on keeping stock from waterways and water metering.
- Zone Committee Annual Reports for 2018 are available.
- Joint Work Programmes continue to be developed with key partners such as Irrigation New Zealand and New Zealand Fish and Game Council.
- CWMS Fit for Future project is underway. Draft intermediary goals for the CWMS for 2025 and 2030 and work programmes to achieve the goals were approved by the Canterbury Mayoral Forum on 24 May 2019.

d) Freshwater Restoration Projects

- Since 2010, $10.3m has been allocated for over 560 projects across a range of ecosystems in partnership with individuals and land care groups through the Immediate Steps Biodiversity Programme.
- Continued work on two major freshwater restoration projects:
  - Whakaora Te Waihora – Phase Two is underway with the design phase of the main project Whakaora Te Ahuriri complete.
  - Wainono Restoration Project – work continues under Te Mano O Te Wai including mahinga kai protection, farm surveys and mitigations to manage sediment, endangered fish habitat protection, planting and amenity development.
- Significant investment and progress continues on the piloting of environmental infrastructure for improved water management in high value waterways in Selwyn and Ashburton districts.

e) Distribution Infrastructure

- In the Hurunui Waiau Zone:
  - Amuri Irrigation Company (AIC) takeover proposal has been accepted by Hurunui Water Project and AIC.
  - Emu Plains Irrigation resource consent applications to divert, take and discharge water have been lodged and in process.

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- Waimakariri Irrigation Ltd (WIL) appeal hearing on the interim decision from the Environment Court on the Waimakariri Irrigation Ltd (WIL) 8.2Mm^3 storage resource consent took place in June 2018. Two interim decisions indicate consent will be granted if additional mitigation requirements are included in consent conditions.
- Central Plains Water (CPW) Sheffield Scheme Stage 2+ is operating.
- In the Ashburton Zone:
    - Rangitata Diversion Race Management Ltd (RDRML) consent for an additional take of 10m^3/s from the Rangitata River at high flows appeal is yet to be resolved.

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Reporting Requirement 1:

Progress on the Canterbury Land and Water Regional Plan;

CWMS and NPS FM Context

Collaborative engagement is at the heart of the CWMS. It empowers communities to make their own decisions about how best to meet agreed, region wide and local targets.

Through the CWMS, the process of setting Environmental Limits (including environmental flows, allocation limits and nutrient loads) provides an opportunity for the community to take local ownership of water management, and to work together through complex information, to reach decisions around priority outcomes and values.

Zone Committees and communities are working collaboratively through the Resource Management Act (RMA) plan development timetable. This intensive process transfers the priority outcomes and values into resource management plans, supports Environment Canterbury to meet its statutory responsibilities, and achieves sustainable management of the region's water and land resources and aligns the planning framework to CWMS targets.

The Land and Water Regional Plan is operative and aims to help achieve NPS FM requirements and deliver community aspirations for water quality in both urban and rural areas. It provides clear direction on how land and water are to be managed, including setting outcomes and limits for water quality for urban and rural water bodies.

The Canterbury Land and Water Regional Plan

1. The Canterbury Land and Water Regional Plan (LWRP) is now fully operative and sets outcomes and limits for water quality for urban and rural water bodies. Recent updates to this planning framework include Plan Change 5.
2. Nutrient Management and Waitaki Plan Change / Plan Change 5 - was made operative on 1 February 2019. The plan change:
    - deals with the effects of land uses, particularly farming activities, on water quality at a region-wide level
    - ensures the effective management of water quality in the Waitaki sub-region
    - sets industry agreed Good Management Practice as the minimum standard for all farming activities.
3. The nutrient management rules apply in all catchments in the region not currently the subject of sub-region plans. Resource consent, including audited Farm Environment Plans, is required if properties irrigate more than 50 hectares or have more than a specified amount of winter grazing of cattle, depending on property size. As part of the process to settle appeals on the plan change, the external working group continues working through implementation challenges.
4. Plan Change 7 to the Land and Water Regional Plan (LWRP) is currently under development and is being prepared in three parts. Part A is an omnibus change that proposes changes to region-wide policies and rules in the LWRP to:
    - provide greater protection to habitats of freshwater species
    - enable consideration of Ngāi Tahu values in relation to a broader range of activities
    - support the use of managed aquifer recharge across the region
    - provide a revised nutrient framework for commercial vegetable growing operations.

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5. Part B and C of Plan Change 7 have been developed in collaboration with the Waimakariri and Orari Temuka Opihi Pareora (OTP) Zone Committees and looks to make further reductions beyond GMP and increase in minimum flows. Environment Canterbury has been in discussion with Ngāi Tahu and other key stakeholders over the last month. Schedule 1 consultation has been completed for all three parts of Plan Change 7 and Council is currently working through the feedback received. Notification is currently scheduled for 20 July 2019 (subject to Council decision-making).
6. All sub-regional plans are operative with the exception of the two discussed above (see Reporting Requirement 2).
7. There is a lot of work going on regionally with regards to implementing the LWRP and this is discussed in more depth in subsequent sections of this report.

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Reporting Requirement 2:

Progress on any other plans relating to the management of freshwater within the Canterbury region;

CWMS and NPS FM Context

The LWRP provides a region wide planning framework within which catchment specific plan changes (sub-regional chapters) are added to introduce local environmental limits (including environmental flows, allocation limits and nutrient loads) to enable Environment Canterbury to meet the requirements of the NPS FM.

The sub-regional chapters are developed via a detailed and intensive collaborative community engagement and planning process which is a core tenet of the CWMS.

This collaborative process involves working closely with manawhenua and science and planning staff from both Environment Canterbury and territorial authorities to develop local solution packages that aim to take into account economic, social, cultural and environmental values. These are translated into a rule framework as a sub-regional chapter of the LWRP.

Rūnanga are represented on all the CWMS zone committees and Environment Canterbury supports and works closely with rūnanga on the zone committees.

Sub-Regional Planning

8. The current status of the sub-regional chapter development process is set out in the following table.

Sub-Regional Plan	Progress	Next steps
Hurunui Waiau (Hurunui Waiau Rivers Regional Plan)	**Statutory Process – (post notification, pre-hearing):** The Zone Committee has agreed on a targeted plan change mindful of the impact of the earthquakes in the northern part of this zone. Consultation on Plan Change 1 to the Hurunui and Waiau River Regional Plan (HWRRP) closed on 31 May. Council received 13 submissions. Change 1 proposes to change the HWRRP rules that address the cumulative effects of land use on water quality so that dryland farmers can continue to operate without the need for resource consent. Note: the Hurunui Waiau Zone has had a plan framework in place since 2012 – the Hurunui Waiau Rivers Regional Plan (HWRRP).	Hearings are expected to be held in late 2019, with recommendations made to Council in mid-2020
Waimakariri (Waimakariri River Regional Plan; upcoming sub-region plan change to the Land and Water Regional Plan)	**Statutory Process (pre-notification):** Councils received the final outcomes from the collaborative process led by Zone Committee at the end of 2018 This included recommendations for the sub-region plan change to the Land and Water Regional Plan, and on-the-ground projects. Schedule 1 consultation has been completed and Council is working through feedback. Notification is currently scheduled for 20 July 2019 (subject to Council decision making).	Statutory recommendations from the collaborative process will be given effect to through a sub-region plan change to the LWRP to be notified prior to expiry of ECan Act streamlined appeals process, alongside implementation of on-the-ground actions. Plan change will also incorporate part of the Waimakariri River Regional Plan (WRRP) into the Land and Water Regional Plan – this will require a plan change to the

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Sub-Regional Plan	Progress	Next steps
		WRRP effectively deleting part of that plan. The remainder of that plan will be incorporated via future sub-region processes.
Banks Peninsula (Land and Water Regional Plan – Plan Change 6)	**Operative:** Wairewa Plan Change 6 to the LWRP made operative 1 February 2017.	Implementation of Wairewa Plan Change 6 and progressing on-the-ground actions.
Selwyn Waihora (Land and Water Regional Plan – Plan Change 1)	**Operative:** Selwyn -Te Waihora Plan Change 1 to the LWRP made operative from 1 February 2016.	Implementation of Selwyn Waihora Plan Change 1 and progressing on-the-ground actions.
Hinds (Land and Water Regional Plan – Plan Change 2)	**Operative:** Hinds Plan Change 2 to the LWRP made operative from 1 June 2018.	Implementation of Hinds Plan Change 2 and progressing on-the-ground actions.
Orari-Temuka-Opihi-Pareora (Opihi River Regional Plan; Pareora Catchment Allocation Plan; upcoming sub-region plan change to the Land and Water Regional Plan)	**Statutory Process (pre-notification):** Councils received the final outcomes from the collaborative process led by Zone Committee last year. This included recommendations the sub-region plan change to the Land and Water Regional Plan, and on-the-ground projects. Schedule 1 consultation has been completed and Council is working through feedback. Notification is currently scheduled for 20 July 2019 (subject to Council decision making).	Statutory recommendations from the collaborative process will be given effect to through a sub-region plan change to the LWRP to be notified prior to expiry of ECan Act streamlined appeals process, alongside implementation of on-the-ground actions. This process will also incorporate two separate catchment plans into the Land and Water Regional Plan (being the Opihi and Pareora catchment plans).
Waitaki (Waitaki Catchment Water Allocation Regional Plan; Land and Water Regional Plan – Plan Change 5)	**Operative:** Waitaki Plan Change 5 to the LWRP made operative from 1 February 2019	Implementation of Waitaki Plan Change 5 and progressing on-the-ground actions. Implementation Working Group being established to deal with Good Management Practice implementation issues as they arise.
South Coastal Canterbury (Land and Water Regional Plan - Plan Change 3)	**Operative:** South Coastal Canterbury Plan Change 3 made operative 1 September 2017.	Implementation of Plan Change and progressing on-the-ground actions.

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Reporting requirement 3: Implementation of CWMS

3a: Progress with, and use of, the matrix of good management and supporting material such as the farm portal and Environment Canterbury's farm plan auditing project.

CWMS Context

The Land and Water Regional Plan, notified in 2012, provides clear direction on how land and water are to be managed in the region, including setting limits on the discharge or leaching of nutrients.

Plan Change 5 makes amendments to the nutrient management rules and sets industry agreed Good Management Practice (GMP) as the minimum standard for all farming activities on properties larger than 10ha. Every farmer is encouraged, and largely required by the rules, to complete a Farm Environment Plan (FEP) which includes an assessment of the environmental impacts of their farming activities.

Farmers can use their FEP to work out what they can do to improve water quality – for example, fencing and planting waterways and drains may help control sediment loss and smarter irrigation systems that improve water management can also help control nutrient leaching.

Plan Change 5 also requires farmers to register their farming activities on the Farm Portal. The Portal provides access to farm specific nutrient management based on the Matrix of Good Management and information to help them get a resource consent if required.

Farms that require a resource consent will need to be audited by a certified auditor. Each farm then reports a nutrient loss number and a grading on how well a farm is being managed to GMP. Auditing frequency depends on performance.

As more data is collected, Environment Canterbury will be better able to report on how the region is progressing towards nutrient efficiency at a broad scale and report on progress in meeting Good Management Practice.

Matrix of Good Management and Farm Portal Project

9. The Farm Portal has been updated to ensure alignment to the framework agreed through the Nutrient Management Plan Change 5 (PC5) to the Land and Water Regional Plan (LWRP) and to better support the Farm Environment Plan (FEP) Audit Programme. It is currently on online at https://farmportal.ecan.govt.nz/. Under the LWRP, permitted land use activity farms in high risk nutrient management areas are required to register in the Farm Portal by 01 July 2019.
10. The Farm Portal supports farmers to calculate their nitrogen loss rates. It also allows Environment Canterbury to capture key data related to the implementation of Good Management Practices (GMP) and undertake more accurate catchment accounting.

Farm Environment Plan Audit Programme

11. The Farm Environment Plan (FEP) Audit Programme has been developed to ensure consistency, robustness and transparency in the way FEPs are audited within Canterbury. Farmers can now find information relating to FEP auditing at www.canterburywater.farm
12. The Certification Programme was introduced in early 2017. To date there are 24 Certified FEP Auditors and one application in process.
13. Synlait's Lead with Pride and HortNZ New Zealand Good Agricultural Practice (NZGAP) programmes have been approved as alternative certified programmes.
14. Mahinga kai guidelines have been developed to help farmers identify key risks to include in their FEP to protect and enhance mahinga kai.

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Key Metrics for Good Management Practice

15. In Canterbury there is a total of 7,419 farms (based on Statistic New Zealand[1] excluding forestry as not affected by farming rules), of which 1,400 require a land use consent and 1,500 have an authorisation to farm as they are managed by collectives (irrigation schemes and farming enterprises) holding a consent. The remaining farms are permitted land use activities.
16. To date, 81% of the required FEPs are in place and have been audited at least once or will receive their first audit within the next year. 49% of these farms now have a resource consent.
17. The *Farming at GMP* campaigns consists of three measurable activities: development of FEP, land use consent to farm applications that set property level nitrogen loss limits, and audited FEPs and their associated grades.
18. Key metrics for the matrix of good management and supporting material such as the farm portal and Environment Canterbury's farm environment plan auditing programme are;

Metric	Progress	Estimated Target	Commentary
Number of FEPs Completed	Total of 2,345	2,900	The dairy industry has almost completed all FEP's. **NOTE: This number is now drawn from Environment Canterbury's resource consents information and collectives' data whereas in previous reports it was based on an industry survey.**
Number of FEP Audits completed	Total of 1587 to date (756 in 2017/2018)	1,000 per year	FEP audit programme is established and underway with strong support from the irrigation schemes and the farm advisory sector. **NOTE: Total number of FEPs Audits is available every year in November.**
Number of Farms registered in the Farm Portal as a permitted land use activity	14 farms have registered since PC5 became operative	2,386*	**NOTE: The Farm Portal is designed for use to implement the rule under PC5.** **This figure excludes 2,133 farms that are 10ha or less (Statistic New Zealand[1]) in area not requiring registration in the Farm Portal.**
Number of Land Use Consents	686 consents for farming activities granted since the LWRP was notified (2012).	1,400	**NOTE: 1,500 farms are being managed to GMP under conditions set out consent conditions of the major irrigation schemes and farming enterprises.**

**Some of these farms may be permitted activities not requiring registration on the Farm Portal due to conditions of rules in the LWRP*

[1] Statistic New Zealand Agricultural Production Statistics: June 2017 (final)

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Reporting requirement 3: Implementation of CWMS

3b: Water metering including global consents held by irrigators: reporting of consented versus actual takes and any enforcement and compliance actions taken as a result of breaches of consents;

CWMS Context

The National Regulations require water consent holders to provide annual water use information to Environment Canterbury prior to 31 July each year. However, Environment Canterbury is requesting that water use data that is telemetered be submitted daily to Environment Canterbury via service providers.

Environment Canterbury is working closely with service providers to ensure daily data is quality checked and will raise notifications with service providers if there are any issues.

Summary of Water Metering

19. Environment Canterbury has the largest number of water takes of any regional council in New Zealand. There are 7,910 water takes across 5,085 consents. Note that the numbers of consents changes over time due to cancellation of consents, amalgamation of consents, consents becoming inactive, cleansing of data (e.g. removing duplicates) and changing takes to permitted activity levels (e.g. below 5 l/s).

National Water Metering Regulations

20. 6,294 water takes are now metered in line with the national water metering regulations, and action plans are in place to ensure that the remainder of the consent holders meet the regulations.

Compliance and Enforcement

Global or significant consents

21. The 2017/2018 compliance monitoring annual report of compliance and enforcement was completed in August 2018. Of the 5,754 consents monitored, 65% were water take consents. 91% of the water take consent holders complied with their consent conditions.
22. Planning for the 2018/2019 monitoring programme with organisational priorities for compliance has been completed. The monitoring of regionally significant consents and other prioritised consents has commenced. The 2018/2019 Annual compliance monitoring annual report of compliance and enforcement will be completed in August 2019.

Other water consents

23. The water monitoring approach continues to provide an improved way to identify, investigate and action potential non-compliances using water use data received via telemetry.
24. During 2018, approximately 525 consent holders with water takes between 5-10 litres/second (l/s) who have not installed water meters were contacted. More than 45% of these consent holders have now installed water meters and we continue to work with those still needing to install them and verify them. There are 45 consent holders who have not submitted data in both 2016/17 and 2017/18 and have not responded to letters and/or warnings. Tailored action plans (covering a number of methods and tools) to ensure consent holders become compliant have been completed.

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Reporting requirement 3: Implementation of CWMS

3c: Zone committee progress with developing or implementing zone implementation programmes

CWMS Context

Since October 2015 each of the ten CWMS zone committee has developed a work programme that aligns to their Zone Implementation Programme (ZIP) and the Canterbury Water Management Strategy (CWMS).

Environment Canterbury has established Zone Delivery teams to focus resources on delivering to each zone committee's zone work programme. Each zone work programme covers a wide range of objectives set out as 'five-year outcomes' that contribute to CWMS targets.

Zone Based Work Programmes

25. Activities in each zone cover biodiversity enhancement and protection, improving on-farm practices, and specific local projects on local water bodies. A summary of what's happening in each zone is contained in the table at the end of this section.

Zone Annual Reports

26. The 10 Zone Committees and the Regional Committee complete an annual report covering key issues and achievements for each year.
27. Ten reports for 2018 can be found on the CWMS water zone main page at: https://www.ecan.govt.nz/your-region/your-environment/water/whats-happening-in-my-water-zone/. The Regional Committee's report will be available from mid- June.

CWMS Targets Report

28. The 2017 CWMS Targets Progress Report shows progress we are making towards achieving the CWMS strategy.
29. The report is available at https://www.ecan.govt.nz/your-region/your-environment/water/measuring-progress. The 2017- 2019 Targets Progress Report is currently being prepared and can be found on the same page from September 2019.

CWMS Quick Guide

30. The CWMS Quick Guide is a 12-page summary of the CWMS, and can be found at https://www.ecan.govt.nz/your-region/your-environment/water.

CWMS Fit For Future Project

31. Environment Canterbury continues to lead the "Fit for the Future" project for the Canterbury Mayoral Forum, owner of the CWMS to ensure that the CWMS is fit for the future needs of the region, meets the requirements of the NPS FM and can deliver the outcomes desired by the community for freshwater.
32. The project has:
    - Built on the current strategic framework, which continues to provide a good foundation for freshwater management in Canterbury

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- Developed intermediary draft goals for each of the target areas (for 2025 and 2030) – to provide clear direction about what progress we're looking for over the next ten years, and help to maintain a focus on action
- Considered what is required to enable the strategy to be delivered.

33. The collaborative ethos that underpins the CWMS has been central to the project.
34. Draft goals developed in discussion with key stakeholder groups were approved by the Canterbury Mayoral Forum on 24 May 2019.
35. The Mayoral forum also supported the development of an implementation plan and monitoring framework to deliver the goals.

Joint Work Programmes

36. In addition to the zone-based work programmes as set out above, Environment Canterbury continues to develop and implement work programmes with key partners (sector groups, key agencies, and the dairy sector) such as:
    a. Canterbury dairy industry
    b. Irrigation New Zealand,
    c. Fish and Game, and
    d. the Canterbury District Health Board.
37. The Canterbury Dairy Joint Work Agreement (DJWA) between Environment Canterbury, Dairy NZ, Fonterra, Synlait Milk, Westland Milk, Oceania Milk and Irrigation NZ. Through the DJWA, the parties are committed to delivering long term benefits to the Canterbury region and environment in the course of fulfilling their operations and responsibilities. The agreement includes a series of tasks and associated targets such as ensuring that dairy farming operations in Canterbury receive high grades on FEP audits. Over the past six months, the parties have worked on a number of initiatives including; ensuring farms meet their requirements to have a land use consent, encouraging farmers to make greater use of soil moisture monitoring for irrigation scheduling, providing guidance on winter grazing and on mahinga kai management, and providing appropriate support to those farmers who are seeking to move up an audit grade.
38. The Irrigation New Zealand Joint Work Programme covers activities that contribute to CWMS outcomes. It complements work on future crops and farming systems elsewhere, with an emphasis on industry standards, research (central government funded) knowledge and training, water efficiency implementation initiatives and communications/extension work on these topics.
39. Joint work programmes are in place between Environment Canterbury and Fish and Game North Canterbury, and Central South Island. The benefit of these joint programmes is that parties are aligned, and they work collaboratively in an integrated way to improve the environment and deliver on the CWMS.
40. The multi-agency Canterbury Fish Screen Working Party includes representatives from Irrigation New Zealand, Central South Island and North Canterbury Fish and Game, Te Rūnanga o Ngāi Tahu, Otago Regional Council, Environment Canterbury and the Department of Conservation. It reports back to Environment Canterbury via the CWMS Regional Committee and has the mandate to review technical standards for fish screens. Following a Council decision in April 2018 to prioritise fish screen monitoring, work commenced on the development of a Fish Screen Compliance Monitoring

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campaign. Fifty priority sites selected with input from the Department of Conservation, Fish & Game and iwi have been included in an Environment Canterbury work programme to improve compliance. These consents are located mainly at large intakes or environmentally significant or sensitive sites. The Working Party continues to investigate information gaps to inform improvements to intake configurations and practices with particular regard to native fish species. The Working Party is also investigating funding requirements to enable research on fish screens. MPI has offered Sustainable Food and Fibre Fund support for an industry led approach to better define good practices with a focus on native fish species. Environment Canterbury continues to work with consent holders to upgrade their screens to current best practice and/or put interim improvements in place while longer-term ones are planned.

41. The Canterbury Drinking Water Reference Group (CDWRG) comprise of representatives from all ten Canterbury territorial authorities, Environment Canterbury, the Canterbury District Health Board Medical Officer of Health and Drinking Water Assessors. It provided advice to the Canterbury Chief Executives on areas where Canterbury could work with DIA to improve outcomes in its proposed changes under the Three Waters review. The Group has provided a valuable platform for agencies to work together to find solution on issues and share information on areas of common interest.

Zone Based Work Programmes

A summary of the Zone Work Programmes is provided as Appendix 1.

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Reporting requirement 3: Implementation of CWMS

3d: Progress reports on council funded freshwater related restoration projects.

CWMS Context

There are a range of council funded freshwater related restoration projects from the smaller biodiversity projects (Immediate Steps) through to the larger multi-year water body restoration projects such as Whakaora Te Waihora and Wainono.

There are also Environmental Infrastructure projects which aim to achieve multiple outcomes such as to future proof water quantity and water quality in key groundwater and surface water bodies, through waterway enhancement. The key CWMS target areas supported by these projects are aquatic habitat (native and introduced), biodiversity, drinking water and recreation (for example, swimming and fishing). A Managed Aquifer Recharge (recharging groundwater through a purpose-built 'leaky' basin) pilot project is underway in the Ashburton Zone. This project receives its water supply via irrigation distribution infrastructure. An expansion of this concept for the Hinds-Rangitata plains is underway. A Targeted Stream Augmentation (solar power supplied groundwater to a spring-fed stream when the springs are dry) pilot project is underway in the Selwyn Waihora Zone. Combinations of these concepts, known as Near River Recharge (where a river system is augmented through basin and/or dry river bed sections) are being considered across multiple CWMS Zones.

Immediate Steps and Biodiversity Projects

42. Launched in 2010, the Immediate Steps Biodiversity protection and restoration programme provides funding for on-the-ground actions aimed at halting or reversing the decline in indigenous biodiversity.
43. Up to March 2019, over $10.3 million had been approved for over 560 projects (including sub-projects) under the CWMS Immediate Steps biodiversity programme. Environment Canterbury allocates $1.0m per annum on this programme. The programme is designed to encourage joint investment in projects for the protection and restoration of biodiversity on private and public land.
44. Environment Canterbury is committed to creating a step-change in effort for the regeneration of freshwater, marine and terrestrial biodiversity. An internal Strategic Plan for Biodiversity has been developed to support internal alignment of Environment Canterbury's diverse functional and regulatory roles and ensure Environment Canterbury's direction and actions are clearly articulated. The Plan will also help to leverage the activities of others working on improving biodiversity.
45. The two new programmes, Braided Rivers and Wetlands, have been resourced and have additional funding to develop and implement ki uta ki tai (mountains to the sea) plans for priority braided rivers, and wetlands action plans with willing landowners respectively. The first Braided River Management Plan is expected to be completed in 2020. Through its Regional Wetlands programme, Environment Canterbury is developing action plans and undertaking protection and enhancement work on 12 sites to protect ecologically significant wetlands on private and public land across Canterbury.

Freshwater Projects from Zone Work Programmes

Whakaora Te Waihora

46. Whakaora Te Waihora (WTW) is an intergenerational operational programme of the Te Waihora Co-Governance Group (https://tewaihora.org/about/), which includes Te Rūnanga o Ngai Tahu, Environment Canterbury, Selwyn District Council, Christchurch City Council and the Department of Conservation (DOC).

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47. WTW provides the partnership and platform for an ambitious programme of work – to restore and rejuvenate the mauri and ecosystem of Te Waihora / Lake Ellesmere in two generations (approximately 35-40 years) (https://tewaihora.org/welcome-tautimai/).
48. Phase One (2012-2017) initiated restoration actions and was funded via $6.0m from the Government's *Fresh Start for Fresh Water Fund*. The total programme budget of $10.6m was supported via funding from Environment Canterbury and Te Rūnanga o Ngāi Tahu.
49. Key achievements of Phase One are summarised at http://tewaihora.org/wp-content/uploads/2014/04/Achievements-of-Phase-One-of-Whakaora-Te-Waihora-2012-2017.pdf. Some key achievements are:
    - Ongoing willow control work around the shore of Te Waihora / Lake Ellesmere. This work is being extended for a three year period with the 'Weed Strike Force', commencing in 2018/2019.
    - Planted over 200,000 plants.
    - Restored Te Repo Orāriki (Taumutu Wetlands) and handed the management of the site back to Te Taumutu Rūnanga.
    - Ongoing support for the Kids Discovery Plant-out, which included sites planted by schools, and school trips to re-visit and learn at planted sites https://tewaihora.org/kids-planting-programme-a-success/.
50. Phase Two of WTW is underway, and key projects include:
    - The Whakaora Te Ahuriri project:
        - This project is developing a constructed wetland to improve water quality, mahinga kai, and biodiversity values in Ahuriri Lagoon https://tewaihora.org/ahuriri-lagoon-project-underway/, and is funded by the Government's *Fresh Water Improvement Fund*, Environment Canterbury, and NIWA.
        - The design phase has been completed, a Mātauranga Māori monitoring programme and an applied research methodology have been developed, and earthworks and the planting of 130,000 plants are scheduled for 2019.
    - The Weed Strike Force, which is controlling willows around the lakeshore of Te Waihora / Lake Ellesmere to allow the natural restoration of wetland sites. This partnership project is co-funded by Environment Canterbury and DOC, and delivered by DOC.
    - Progressing the trial establishment of macrophytes back in to Te Waihora / Lake Ellesmere, with further plantings behind the established wave barriers https://tewaihora.org/wave-barrier-drone-footage/. This partnership project is co-funded by Environment Canterbury and NIWA, and delivered by NIWA.
51. Additional funding sources (including that provided from Government) will need to be identified to enable this and future work to be carried out over the 40-year life span of this project.

Wainono Restoration Project

52. The Wainono Lagoon is a coastal wetland and open water habitat of national and international significance for birdlife, native fish and plant communities. It is also highly valued by Ngāi Tahu hapū for its richness as a mahinga kai site.

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53. In September 2018, Hunter Downs Irrigation Scheme announced it was no longer going ahead due to lack of support from landowners in its command area. The Lower Waitaki Zone Water Management Committee is working with Environment Canterbury and other parties to work out next steps for Wainono Lagoon.
54. The development of an Iwi Management Plan for the Wainono Catchment has been delayed due to resourcing issues.
55. Achievements for the reporting period include;
    - Weed management and removal, sedimentation control and fencing completed at several sites including Te Punatarakao mahinga kai site, Johnston wetlands and Wainono margins, a Hook catchment cropping property and Bradshaw Bridge site.
    - Pathways for Rūnanga capacity development identified and underway
    - Fencing and willow removal completed for Canterbury mudfish site in the Hook Catchment
    - Upgrades to improve amenity and carparking areas at Wainono Lagoon and the Waihao Box is planned to take place over the next few months to make the areas more user-friendly and informative for visitors.
56. The Wainono Restoration Project which sets out to restore mahinga kai values within the Wainono catchment progresses under the Waihao Rūnanga Te Mana O Te Wai Project, funded by the Ministry for the Environment with contributions from Environment Canterbury and DOC.

Environmental Infrastructure Projects

Targeted Stream Augmentation (TSA) – Selwyn Waihora

57. This project and the Selwyn Near River Recharge project are the responsibility of the Selwyn-Waihora Zone Committee.
58. The aim of the TSA project is to re-establish native aquatic species strongholds in the catchment, particularly for the Canterbury Mudfish (Kōwaro) which is classified as "At Risk: Nationally Critical – Conservation Dependent" and listed as a taonga species in the Ngāi Tahu Claims Settlement Act 1998.
59. Weir emplacement is underway on the Broadacres pilot site on the Waikirikiri/Selwyn River tributary to enable downstream mudfish release prior to springs drying naturally in early summer.
60. Further installations in the Selwyn and Ashburton districts are being explored.

Near River Recharge – Waikirikiri/Selwyn River

61. The Waikirikiri/Selwyn River is an iconic Canterbury River for its recreational values (e.g. Coes Ford / Chamberlains Ford reserves and brown trout fishing), but is also important culturally and environmentally through its connection to Te Waihora/Lake Ellesmere. A drying climate, increasing drought severity, irrigation abstraction and agricultural nutrient leaching have all contributed to a declining health for this ecosystem.
62. The Waikirikiri/Selwyn Near River Recharge project will support the Waikirikiri/Selwyn River system by adding water during dry years, thus avoiding the significant loss of ecosystem health that currently occurs when river flows are low.

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63. Stage 1 infrastructure is complete. Land purchase has been confirmed with land clearance beginning in mid- May. Stage 2 construction will be completed in late winter 2019.

64. Construction complete early June 2019 on linked project to install Southern Hemisphere's first electric fish barrier in a Hororata River tributary with significant mudfish habitat.

Managed Aquifer Recharge – Ashburton-Hinds Pilot

65. The Ashburton-Hinds / Hekeao Managed Aquifer Recharge (MAR) project aims to demonstrate the potential for MAR to reduce nutrient (nitrate) concentrations in groundwater and improve groundwater storage levels, leading to improved flows in the lowland waterways to protect environmental and cultural values. This project is currently the responsibility of the Hinds MAR Governance Group, set up by the Ashburton Water Management Zone Committee. This responsibility transitions to a new community trust (the Hekeao Hinds Water Enhancement Trust) on 31 May to implement future project stages.

66. As at May 2019 the project includes a pilot site, near river recharge site and 11 small-scale infiltration sites.

67. The South Hinds Near River Recharge site (now named the Hekeao/Hinds River Project) has been constructed and commissioned. A successful planting and blessing were held in September with a follow up planting (Kahikatea forest species) in May 2019.

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Reporting requirement 3: Implementation of the CWMS

3e: Progress on the water storage and distribution infrastructure for meeting the CWMS targets.

CWMS Context

Environment Canterbury's CWMS Infrastructure team continues to facilitate the development of a regional infrastructure solution that aligns with all the targets of the CWMS and the recommendations in the zone and regional implementation programmes.

Most infrastructure investment across the region has been focused on improving in-scheme reliability through piping and storage upgrades. In addition to improving reliability, the in-scheme developments have, in most cases, increased irrigated area and also reduced power consumption related to irrigation.

Infrastructure Work Programme.

Central Government Engagement

68. In addition to work on Environmental Infrastructure (above), Environment Canterbury's CWMS infrastructure personnel continue to engage with a number of Ministries including the Ministry for Primary Industries (MPI), Ministry of Business, Innovation and Employment (MBIE), and Ministry for the Environment (MfE) to ensure alignment of Canterbury infrastructure concepts to the NPS FM and the ten targets of the CWMS.
69. Environment Canterbury continues to work with a range of organisations on climate change resilience looking at the role of stored alpine water, managed aquifer recharge and targeted stream augmentation to help to manage the effects of climate change in future.

Hurunui Waiau

70. Hurunui Water Project (HWP) – The Amuri Irrigation Company (AIC) takeover proposal has been accepted by HWP and AIC. AIC is proposing a smaller piped irrigation scheme between the Hurunui River and Hawarden/Waikari and with the takeover hold the resource consents formally held by HWP.
71. AIC is considering additional groundwater nutrient management options such as MAR.
72. Emu Plains Irrigation resource consent applications to divert, take and discharge water have been lodged and are in process. Proponents are still working on mitigations for water quality effects.

Waimakariri

73. A hearing following up on the interim decision from the Environment Court on the Waimakariri Irrigation Ltd (WIL) 8.2Mm^3 storage resource consent appeal, issued on 7 September 2016 took place in June 2018. Two interim decisions indicate consent will be granted if additional mitigation requirements agreed during the appeal process are included in consent conditions.

Selwyn Waihora

74. Central Plains Water Ltd (CPWL) consents to take water from the Waimakariri and Rakaia Rivers were granted in 2010 to irrigate 60,000 ha of farmland in the Canterbury Plains. Its Sheffield scheme Stage 2+ is now operating.

Ashburton

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75. Rangitata Diversion Race Management Ltd (RDRML) lodged consents for a 53 Mm^3 maximum volume storage facility at Klondyke, plus an additional take of 10m^3/s from the Rangitata River at high flows. The appeal on the high flow take is yet to be resolved.

South Canterbury/Waitaki

76. Hunter Downs Water scheme will not proceed in its current form due to lack of investor funding.
77. Orari-Temuka-Opihi-Pareora (OTOP) Conceptual Infrastructure Design and Costing study concluded in February 2018 and identified technically feasible supply options and pipelines, but none are currently considered financially feasible. Follow up meetings have taken place with local/regional/national governors, government officials, OTOP Zone Committee and local shareholders.
78. Kurow-Duntroon Irrigation modernisation project is under construction. The project will improve irrigation efficiencies and achieve improvements to environmental, cultural and economic outcomes.

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Appendix 1 - Zone Based Work Programmes

Summary table showing what's happening in each zone.

CWMS Committee	Focus of the Zone Committee Work Programme	Highlights of practical work underway
Kaikōura	**Earthquake Recovery**: Kaikōura earthquake **Immediate Steps:** implementation **Collaborative Inter-agency Programmes**	• Managing, monitoring and reporting of earthquake-related consents and emergency actions under the Order of Council (Hurunui/Kaikōura Earthquakes Recovery Act 2016). • Post-earthquake experimental closing of Lyell creek to replicate a tidal and weather event to raise the Lyell/Waikōau level - allowing hatching of īnanga eggs in the creek has been a success. This will enable an īnanga run in November 2019. • Works on the three significant wetland protection and enhancement projects under the Kaikōura Flats (Lyell/ Waikōau Creek) Catchment Programme continue. • The Kaikōura Plains Recovery Project – a joint project with ECan, MPI, Fonterra, and DairyNZ covering 'in paddock' treatment of drainage water, land assessment and riparian restoration, and integration of mahinga kai values continues in its second year with the identification of two additional drainage sites.
Hurunui Waiau	**Minimum Flows**: Hurunui and Waiau Rivers. **Immediate Steps**: Hurunui and Waiau Uwha predator control **Good Management Practice**: Targeted plan change to permit dryland farming.	• A cultural impact assessment has been completed. Progress on implementing the Hurunui Waiau Rivers Regional Plan (HWRRP) minimum flows (on existing water take consents) continues. • Seven islands enhanced across both rivers to improve native river bird habitat and black-back gull control undertaken at two of the largest colonies on the Hurunui River. • "Hurunui Splash" project Balmoral site – river channels were modified to ensure more flows in the side people swim in. Monitoring of *E. coli* levels will continue. • SCAR (soil conservation and restoration) project is focussing on identifying priority areas and options to create a local nursery to provide trees for SCAR and Billion Trees project. • Plan Change 1 to the HWRRP, giving effect to the Hurunui Waiau ZIP Addendum will be notified in May. It proposes to change the HWRRP rules that address the cumulative effects of land use on water quality to enable dryland farmers to continue to operate without the need for resource consent.
Waimakariri	**RMA Planning**: PC 7 giving effect to the ZIPA is planned to be notified in mid-2019. **Implementation:** A range of priority projects	• Work continues on the "Clean and Green" Silverstream project with works on the Banyons Rd and Giles Rd reserve sites starting in April. Both sites are important to creating the 27km fresh water biodiversity loop. • Identification of funding options for woody weed control in the Ashley /Rakahuri catchment and the protection of wetlands in Lees Valley continues. • The three-year infiltration trial to reduce Silverstream's' nitrates levels has proved successful in the first few months. It is a joint project between Environment Canterbury and Waimakariri Irrigation Limited.
Christchurch -West Melton	**Canterbury groundwater system**:	• The Zone Committee are focused on educating Christchurch residents about the Canterbury groundwater system, drinking water supply and the

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CWMS Committee	Focus of the Zone Committee Work Programme	Highlights of practical work underway
	Improving awareness among Christchurch residents. **Immediate Steps:** Dryland Biodiversity Hub	challenges facing urban streams. The committee have hosted two popular public fieldtrips in collaboration with the Centre of Freshwater Management, Christchurch City Council and Environment Canterbury. • Provided feedback on Christchurch City Council Draft Integrated Water Strategy. • Environment Canterbury is beginning a project to investigate the cause/s of the decline of the Ōtukaikino stream and possible solutions. • Allocated Immediate Steps funding for the next three years to undertake weed control, fencing and native planting to enable a dryland biodiversity and recreational hub on the south side of the Waimakariri River.
Banks Peninsula	**Forestry Impacts**: Considering options and actions related to increasing concerns about the significant risk that forestry poses to waterways. **Wairewa Bank Stabilisation**	• Work continues on the implementation of the new National Environmental Standards (NES) for Plantation Forestry. • Implementation of the Whaka-Ora Healthy Harbour Plan continues. • Wairewa Bank Stabilisation Project –work continues to progress and earthworks at the first pilot site are likely to begin in April 2019. • The latest water quality monitoring results show an improvement in Te Roto O Wairewa. • Environment Canterbury is working with Christchurch City Council staff to improve fish passage at recently installed culverts.
Selwyn-Waihora	**Swimmable Selwyn at Coes Ford:** Managing tributary impacts continues. **Biodiversity Projects: Haldon Springs non-native fish barrier**	• Environment Canterbury continues to work closely with Selwyn District Council on key projects such as "The Swimmable Selwyn @ Coes Ford". • The mudfish protection project has started with the majority of the civil works, willow and weed removal completed. The site-specific installation and electrical work for the mudfish protection barrier has begun along with an up-stream habitat enhancement planting. • Continue to progress the Lake Edge (wetland/wet pasture engagement and consent) project. • Catchment removal of willows and broom as well as wetland protection from Lake Grassmere and along the stream to the confluence with Waimakariri river completed in collaboration with land owners and University of Canterbury
Ashburton	**Fish Passage:** Hinds Drains area **Drainage and Food Protection:** Focus on Hinds Drains and Carters Creek. **Consent review process** for consents linked to the	• Several sites have been identified for fish passage improvements in the Hinds Drains area and a protocol agreed to between Fish & Game, DOC and Environment Canterbury around how best to implement these. • An assessment of the management of Mahinga Kai trial sites in Hinds is underway to look at management of different weeds. • Consultation on the Hakatere / Ashburton Rivermouth management strategy attracted more than 160 submissions and a draft strategy should be available by June 2019.

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CWMS Committee	Focus of the Zone Committee Work Programme	Highlights of practical work underway
	Ashburton/Hakatere River.	• The Hakatere / Ashburton River Consent review project is still being considered by the Ashburton Zone Committee with an update expected at their late April meeting. • The Department of Conservation has raised concerns with the Zone Committee about declining water quality trends in several lakes and streams in the Ashburton Lakes area. The Zone Committee has asked for additional information from Environment Canterbury.
Orari-Temuka-Opihi-Pareora	**RMA Planning**: PC 7 giving effect to the ZIPA is planned to be notified in mid-2019. **Saltwater Creek:** enhancement project.	• Continue to work closely Territorial Authorities and FENZ in relation to ongoing issues with crop burning. Improving monitoring and information provision • Saltwater Creek catchment work is progressing well with several work streams in place with good community engagement. • Joint information event organised with Beef+Lamb on monitoring water quality, using Stream Health Monitoring Assessment Kit. • Implementation of several Immediate Steps projects including protection and enhancement of roosting habitat of long tail bats and joint pest control project with Department of Conservation and forestry company Port Blakely and projects at Milford and Orari Lagoons and Ellis Road coastal wetland.
Upper Waitaki	**Biodiversity projects**: Lake Poaka. **Farming at GMP:** continue to support farmers on GMP. **Willowburn Restoration**	• Joint project underway with Department of Conservation, Central South Island Fish and Game and Environment Canterbury to reduce alder trees around the lake to improve amenity and habitat for plants and bird species including kāki. • Alignment activity with Waitaki Irrigators Collective and Morven Glenavy Irrigation Ltd, looking towards simplification of process and reducing unnecessary overlap • Rural Professionals meeting held focussing on PC5 (session held as part of Upper Waitaki Zone Committee) and PC3 • Willow Burn/ Quaiburn Extension programme - identifying High Priority farms and Critical Source Areas (CSAs) • Omarama Stream Extension programme continuation – supporting land owner with FEP and working closely with Irricon
Lower Waitaki	**Wainono Lagoon:** improving water quality and reducing sediment inflows to help restore the culturally significant resource. **Farming at GMP:** visiting farms to advise on GMP.	• Restoration of Wainono Lagoon continues to be Zone Committee's main focus along with improving the water quality in the Waihao River. As the likelihood of augmentation of Wainono Lagoon via the Hunter Downs Irrigation Scheme is remote, the Committee is working with Environment Canterbury and other parties to work out next steps. Continuing to work with Waimate District Council with a focus on sharing information and managing rubbish dumping and compliance of burn offs. • Alignment activity with Waitaki Irrigators Collective and Morven Glenavy Irrigation Ltd, looking towards simplification of process and reducing unnecessary overlap

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CWMS Committee	Focus of the Zone Committee Work Programme	Highlights of practical work underway
	Projects: Native Scrub at Limestone Hills	• Rural Professionals meeting held focussing on PC5 and PC3 (Farming Land Use Campaign: continuing to work with affected landowners) • Continue to work towards improving protection of native forest and grey scrub at Limestone Hills.
Regional	**Monitoring progress:** Tracking the implementation of the CWMS across the Canterbury region. **CWMS 2025& 2030 Targets:** Fit for Future Project	• Regional Committee is focussed on finalising its advice to ECan and the Mayoral Forum on the CWMS Fit for Future project. and has signed off on this advice during its April meeting. •

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From:	Caroline Hart
To:	Hayden Johnston (Parliament); Martin Workman
Cc:	Stefanie Rixecker; Bill Bayfield; Caroline Hart
Subject:	Water Forum (15 Feb) briefing material for your information
Date:	Wednesday, 13 February 2019 6:41:48 PM
Attachments:	Council briefing 15 February 2019 - Water Forum.pdf 9 Joint ECan CCC Water Forum FAQs.docx

Good evening Hayden and Martin

In preparation for the Water Forum on Friday, Environment Canterbury Councillors have been provided with the attached briefing (Council briefing 15 February 2019 – Water Forum). This material has been previously discussed with Environment Canterbury Councillors and has been brought together as a reference pack ahead of the Water Forum on Friday.

This information is provided for your reference.

The attached FAQs (which is also included in the substantive briefing) contains some succinct messages draw from the more comprehensive memos in the briefing. This summary/FAQ has been provided to Christchurch City Council who have been advised they may wish to distribute this to their councillors.

Please let me know if you have any points of clarification on this information otherwise I will see you on Friday.

Kind regards
Caroline

Caroline Hart
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Environment Canterbury

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Councillor briefing paper

Date of meeting	14 February 2019
Programme	Canterbury Water Management Strategy
Programme Manager	Caroline Hart
Author	Anita Fulton

Briefing for Governor to Governor Forum: Water

Purpose

1. This paper provides Environment Canterbury Councillors with background information ahead of their Governor to Governor Forum on Water with Christchurch City Council Councillors on 15 February 2019. Minister David Parker will be attending this Forum to speak on the Government's freshwater initiatives.

2. This background information has all been previously available and is collated here as a package for ease of reference. On Thursday, 14 February staff will brief Councillors on related hot topics ahead of Friday's Forum.

Background

3. The following information is attached to provide Councillors with background context:

    a. Governor to Governor Forum: Water agenda

    b. Key points from two recent Government announcements – Essential Freshwater and Three Waters Reform

    c. Copy of briefing note on Nitrates in the Waimakariri River catchment to Ministers Woods and Parker for Environment Canterbury meeting on 5 December 2018

    d. Consents and Water Bottling

    e. Christchurch aquifers FAQ

    f. Waimakariri sub-regional plan change, and Christchurch West Melton process

    g. Christchurch's drinking water supply – roles and responsibilities

4. A separate briefing paper has been prepared on key issues that will be shared with Councillors and Christchurch City Council Councillors prior to the Forum (attached).

File reference	
Peer reviewed by	Mel Renganathan

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Governor to Governor Forum: Water

Friday 15 February 2019
1:00pm – 1:45pm

Environment Canterbury – Council Chamber

Invitees: Minister David Parker, Minister for the Environment
Christchurch City Councillors and Environment Canterbury Councillors

Facilitators: Emma Davis (Head of Strategic Policy, Christchurch City Council)
Caroline Hart (Programme Manager, Environment Canterbury)

Purpose: Receive an update from Minister Parker on national freshwater management initiatives.

Time	Topic	Lead/Presenter
1:00pm	Welcome	Councillor Iaean Cranwell
1:05pm	Update on Central Government's role in freshwater management initiatives, including: • Essential Freshwater Programme • Three Waters Review	Minister David Parker *(Minister will join meeting from 1.00-1.45pm)*
1:40pm	Concluding comments	Mayor Lianne Dalziel (CCC) Chair Steve Lowndes (ECan)
1:45pm	Meeting Close	

Next Governor to Governor Forum: 7 June 2019.

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Councillor briefing paper

Date of meeting	14 February 2019
Programme	CWMS
Programme Manager	Caroline Hart
Author	Anita Futlon

Key points from two recent Government announcements

Purpose

1. To provide an update on the Government's announcement on its Essential Freshwater work programme (released on 8 October 2018) and release of its Cabinet paper on Three Waters reform (released on 20 November 2018).

Essential Freshwater

Key points

2. The Government is taking new steps to improve national water quality noticeably within five years. These steps mirror much of the work Environment Canterbury has been doing through the Canterbury Water Management Strategy.

Essential Freshwater Objectives

The work programme has three main objectives:

1. **Stopping further degradation and loss** – taking a series of actions now to stop the state of our freshwater resources, waterways and ecosystems getting worse and to start making immediate improvements so that water quality is materially improving within five years.
2. **Reversing past damage** – promoting restoration activity to bring our freshwater resources, waterways and ecosystems to a healthy state within a generation, including through a new National Policy Statement for Freshwater Management and other legal instruments.
3. **Addressing water allocation issues** – working to achieve efficient and fair allocation of freshwater and nutrient discharges, having regard to all interests including Māori, and existing and potential new users.

Essential Freshwater Principles

3. The Government has agreed to the following principles, to apply across the work programme.

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- Ensure central government plays an effective leadership role on freshwater issues, while retaining appropriate decision-making at local government level.
- Establish policies and solutions that are enduring; which means they need to be science-based, reflect mātauranga Māori, be predictable, understood by the public, and underpinned by effective regulation and enforcement.
- Work with landowners, water users, Māori, communities, and local government to this end.
- Provide for flexibility and adaptability so that as knowledge and technology evolve and the climate changes, policy settings and rules can adapt.
- Promote an integrated approach to freshwater management, within catchments, across issues, and with the marine and coastal environment.
- Promote sound environmental outcomes, and in doing so seek to optimise social, cultural, economic development, and national identity outcomes.
- Address the rights and interests of Māori in freshwater and the development aspirations of owners of Māori freehold land, consistent with the Crown's Treaty obligations.
- Provide for intergenerational equity.
- Ensure the benefits of commercial water use are not captured solely by existing users, but that potential new users can access water so that water is applied to higher value uses with lower environmental impacts.

Working together

4. A network of advisory groups has been set up to test proposals and provide input on options:

   Essential Freshwater Taskforce from across government- this group will include representatives from the Ministry for the Environment, the Ministry for Primary Industries, the Treasury, Te Puni Kōkiri, Māori Crown Relations Unit, the Department of Internal Affairs, the Department of Conservation, the Ministry of Business, Innovation and Employment Three Waters Review and local governmental officials.

   Kahui Wai Māori – The Maori Freshwater Forum will enable wider conversation with Māori on freshwater. The forum will develop and analyse policy options for consideration by Ministers.

   Government will adopt a phased approach to engagement with Māori across all freshwater issues, starting with a focus on water quality rather than water allocation and addressing key information gaps. The government will then engage on broad policy parameters regarding Māori desires for access to freshwater resources for economic development. Where decisions are made at the local level (for regions or specific catchments) the Government's expectation is that local government will involve iwi, hapū and whānau in those decision-making processes.

   Freshwater Leaders Group – includes leaders from the primary sector and agribusiness, environmental non-government organisation and community. This group will have a member in common with **Kahui Wai Māori** and the Science and Technical

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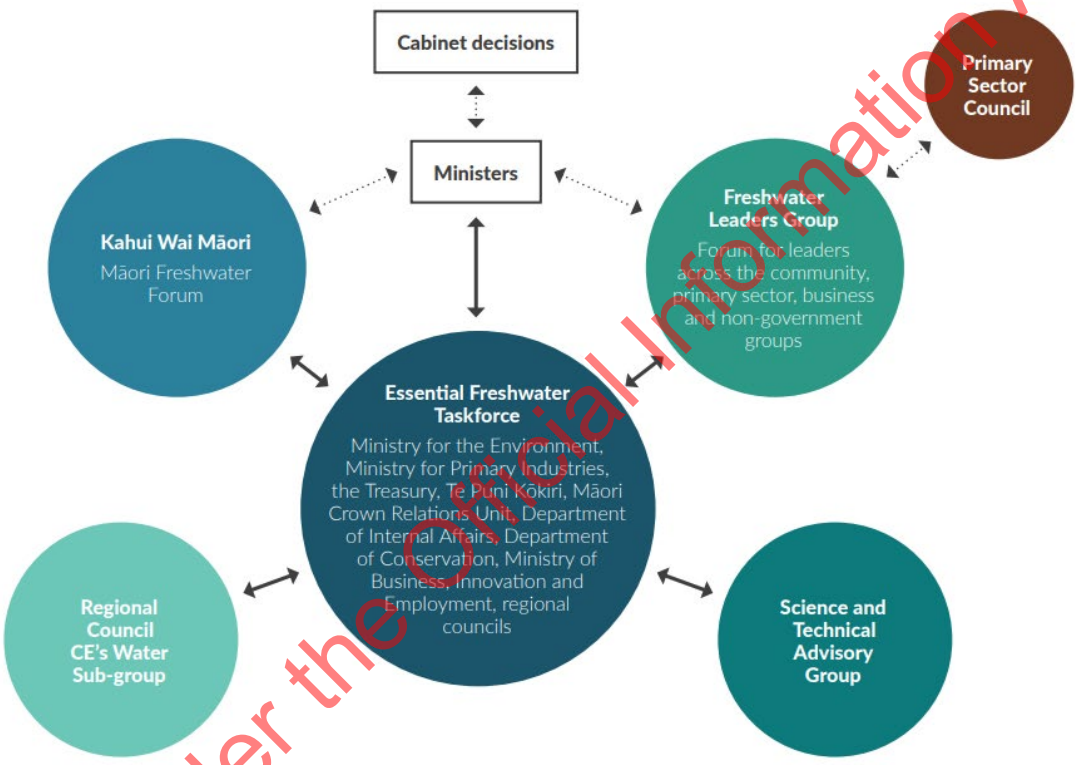
Advisory Group. It will also have a close connection to the Primary Sector Council established in 2018.

Science and Technical Advisory Group – includes technical experts from a range of organisations and will oversee the scientific evidence for freshwater policy development.

Regional Councils – will test policy options through the Chief Executives Water Sub-group.

5. Public feedback will be sought on specific proposals as the programme is developed



Ministry for the Environment Essential Freshwater link http://www.mfe.govt.nz/node/24402/

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Three Waters Reform

Key points

1. Central government announced the outcomes of its review of Three Waters. Decisions in key areas are yet to be made, however Ministers are clear that there is a strong case for change.

2. Three Waters reform will be progressed over the next 18 months, including:
   - drinking water and environmental regulation policy proposals will be progressed by June 2019
   - service delivery proposals will be progressed later in 2019.

3. Ministers have committed to working with key stakeholders, including local government, as policy proposals continue to be developed

Background

4. The Three Waters Review began in mid-2017, to look at how to improve the regulation and supply arrangements of drinking water, wastewater and stormwater to better support New Zealand's prosperity, health, safety and environment. Most three waters assets and services are owned and delivered by local councils.

5. To understand the current state of Canterbury's council owned and operated Three Waters infrastructure a stocktake of drinking water supplies, and wastewater and stormwater systems was undertaken and the results presented to the Chief Executives Forum and Mayoral Forum.

Three Waters review and Cabinet paper

6. In mid-November 2018, Local Government Minister Nanaia Mahuta and Health Minister David Clark announced work to overhaul three waters regulation as part of the Three Waters review.

7. The programme focused on collaborating with the local government sector, the water sector and other stakeholders to meet the Three Waters challenges facing it. These include funding pressures, rising environmental standards, climate change, seasonal pressure from tourism, and the recommendations of the Havelock North Inquiry.

8. The Cabinet paper[1] released in November outlines the outcomes of the Three Waters review so far, including issues and challenges identified with Three Waters management, key themes and workstreams for the review going forward, and next steps for decision making over the next 18 months.

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[1] https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-documents/$file/Cab-Paper-November-2018.pdf

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Issues and challenges with Three Waters management

9. The Three Waters review identified issues and challenges with the management and delivery of water services. Some of these challenges are universal across each of the Three Waters, these being:

    - ***funding and financing to maintain and upgrade infrastructure:*** many councils are struggling to keep pace with maintaining infrastructure to the level required, particularly in light of community aspirations, population growth, debt levels, and resilience against natural events.
    - ***capability:*** specialist knowledge required to effectively deliver and manage water services is in high demand. Many smaller rural and provincial councils in particular face a greater struggle to access and retain specialist skills.
    - ***regulation is weak across the system:*** consumers cannot be certain that drinking water is safe to drink or that good environmental outcomes are being achieved. There is much variation across the system, with varying degrees of inadequate stewardship, compliance, monitoring, and enforcement practices nationwide.

Key themes and workstreams

10. Ministers identified key outcomes that will be the focus of the Three Waters review over the coming 18 months, being delivered across three workstreams. The workstreams will include:

    - ***Regulatory arrangements for drinking water and wastewater:*** the immediate priority for the review is the detailed policy work on the overarching shape and form of regulatory arrangements for drinking water and wastewater.
    - ***Service delivery and economic regulation:*** this is part of a longer ongoing conversation with local government and the water and infrastructure sectors. Options for further investigation are identified, with indications of a preference, for further discussion.
    - ***Engagement:*** central government, through the cross-agency project team, is working with councils, iwi/Māori and stakeholders with an interest in three waters services to engage on options for the shape and form of the regulatory arrangements, and to inform the ongoing conversation relating to service delivery and economic regulation.

11. The above work streams will be underpinned by key outcomes for reforms. The outcomes that were agreed are:

    - existing three waters assets and services must remain in public ownership, with safeguards to protect public ownership of this essential infrastructure
    - a sustainable three waters system that operates in the long-term interests of consumers, communities, tangata whenua, and New Zealand
    - drinking water that is safe, acceptable and reliable

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- environmental performance of wastewater and stormwater realises the aspirations of communities in which they are situated, including tangata whenua
- three waters services are delivered in a way that is efficient, effective, resilient and accountable, with transparent information about performance, and prices consumers can afford
- regulatory stewardship of the three waters system is fit for purpose and provides assurance that these outcomes are being achieved and safeguarded.

Central Government's next steps

12. The Government's proposed work programme for three waters reform over the next 18 months was agreed by Cabinet. Detailed policy decisions will be sought in tranches throughout 2019, on the following timetable:

- In ***June 2019***, the Ministers of Local Government, Health, and Environment will report back to Cabinet with detailed policy proposals for regulation of the three waters in:
    - *drinking water:* system-wide reform of regulation of drinking water, along with a new risk management regime for sources of drinking water. This will include any decisions on whether mandatory residual treatment of drinking water (such as chlorination) will be required
    - *wastewater:* targeted change to environmental regulation of wastewater, aimed at lifting its environmental performance within the existing framework of the Resource Management Act 1991
    - *wastewater and stormwater:* measures to give greater transparency to the operation of wastewater and stormwater systems, and to promote better practice
    - *regulatory institutional arrangements:* the institutions (regulatory bodies) that would give effect to the above reforms, and oversight and stewardship arrangements for drinking water and environmental regulation.
- In ***late 2019***, the Minister of Local Government will report back to Cabinet with detailed policy proposals for service delivery arrangements. These decisions will be informed by ongoing engagement with local government and other stakeholders about reform options, based on (but not limited to) the following high-level options:
    - regulatory reforms only, with voluntary, sector-led reforms to service delivery arrangements
    - a three waters fund to support voluntary service delivery improvements
    - an aggregated system of dedicated, publicly-owned, drinking water and wastewater providers.
- In ***late 2019***, the Minister of Commerce and Consumer Affairs and the Minister of Local Government will report back to Cabinet with any desired policy proposals for the economic regulation of three waters services. These proposals will be dependent on decisions about service delivery arrangements.

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- Finally, in ***late 2019***, the Ministers of Local Government, Health, Environment, and Commerce and Consumer Affairs will report to Cabinet on proposals to improve oversight and stewardship across the three waters system. These proposals will take account of decisions on service delivery arrangements and economic regulation, as well as previous decisions on oversight and stewardship to support drinking water and environmental regulation.

13. Cabinet has agreed that, in terms of sequencing, it is important that decisions on service delivery are made after decisions on regulation. This will give local government and other stakeholders the opportunity to engage on the options in light of the proposed new regulatory environment.

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Briefing

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Date: 29 November 2018 **Security Level:** IN CONFIDENCE

To: Hon Megan Woods, Minister for the Greater Christchurch Regeneration

Hon David Parker, Minister for the Environment

From: Steve Lowndes, Environment Canterbury Chairman

Bill Bayfield, Environment Canterbury Chief Executive

Nitrates in the Waimakariri River catchment

Purpose

This briefing note responds to your request for information to support a meeting on 5 December 2018 on nitrate modelling for groundwater in the Waimakariri River catchment area, and what actions are being taken in response.

Key Point

Modelling of groundwater in the Waimakariri River catchment shows that, over a period of many decades, there is likely to be an increase in nitrates flowing under the Waimakariri River towards the Christchurch aquifer. However, the predicted average nitrate concentration is expected to remain within the Ministry of Health Standards for human health.

Summary - 'Interzone' nitrate modelling

Over 2017/18 there has been concern at the potential for groundwater and nitrate from land use activities in the Waimakariri zone to travel into the Christchurch aquifer system. In response to these concerns Environment Canterbury undertook extensive 'interzone' modelling to get a common understanding of the characteristics, and the potential likelihood and direction of groundwater travel.

While the findings are not an absolute predicator of the future, the interzone modelling did show that we can no longer assume that the Waimakariri River forms a hydraulic barrier between land use in the Waimakariri zone and the Christchurch water supply aquifer.

The interzone modelling predicted a likelihood of a gradual increase in nitrates over many decades (50-100 years) in the Waimakariri River catchment area, and that nitrate concentrations in deep northern Christchurch wells are likely to increase due to inflows from the Waimakariri zone. Nitrate concentrations in deep central and southern Christchurch wells may

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increase due to inflows from the Waimakariri zone. Importantly, the modelling predicts the average nitrate concentrations in the future will remain safe and within the Ministry of Health Standards for human health.

Managing nitrate losses from farming activities is a key priority for Environment Canterbury, and the Waimakariri Zone Committee sub-regional process applies further targeted actions to the Waimakariri zone. While future nitrate concentrations are expected to remain safe, Environment Canterbury will continue to implement actions that manage against future risks.

Background

What is the current state of Christchurch groundwater?

There is no evidence to date to indicate nitrate contamination in Christchurch groundwater. The Christchurch City Council regularly monitors and tests its water supply and results do not show nitrate contamination.

What did the modelling involve?

The modelling involved three clusters of three wells being drilled alongside the Waimakariri River. At each site, there was a shallow (50m), a medium (100m) and a deep well (150m). Measurements were taken of groundwater levels, as well as water quality and geochemistry.

A piezometric study was done in 2015 and 2016 which involved regularly going out over 1-2 days measuring as many wells as possible to get an understanding of how groundwater was flowing.

The data from the wells and piezometric surveys were analysed by a technical group overseeing the investigations which included scientists from Environment Canterbury, Lincoln AgriTech, GNS, as well as consultant experts.

Regional Council rules already in place

Environment Canterbury has invested considerable resources in developing a rule framework for managing nitrate losses from farming activities. Operative nutrient management rules are already in force which classify the source area as a “red nutrient allocation zone”. These rules:

- Generally, prohibit applications for land use consent that would exceed “baseline” nitrate loss limits.
- Require the preparation and implementation of Farm Environment Plans, with performance assessed regularly by an auditor.

Environment Canterbury’s Plan Change 5 (currently under appeal) of the Canterbury Land and Water Regional Plan sets a requirement to adhere to specified Good Management Practice (GMP), and farming within “baseline GMP” nitrate loss limits.

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The current nutrient management framework will support holding the line against further increases in nitrate losses from the source area and provide the platform for any additional regulatory response e.g. a requirement to achieve “beyond GMP” nitrate loss reductions over time can be integrated into the framework established by Plan Change 5.

Waimakariri Zone Committee sub-regional planning

The Canterbury Water Management Strategy’s (CWMS) Waimakariri Zone Committee has been leading a community process to develop a solutions package for freshwater culminating in a programme of recommendations (called a Zone Implementation Programme Addendum (ZIPA)), as part of the collaborative CWMS. The process began in 2016 to understand the state of freshwater, future scenarios, and land use and urban development issues in the Waimakariri district. Discussions also focused on what more could be done to protect and improve freshwater now and for the future.

The Zone Committee consulted extensively with communities throughout the development of the ZIPA over the last 2 years. The draft ZIPA will be presented to Waimakariri District Council and Environment Canterbury in December 2018 for adoption.

The recommendations in the ZIPA will be used by Environment Canterbury to set water quality and allocation limits for the Waimakariri zone, through a sub-region plan change to the Canterbury Land and Water Regional Plan. This plan change will be notified in 2019 prior to the expiry of the ECan Act streamlined appeals process.

Waimakariri Zone Committee’s key ZIPA recommendations

The Zone Committee considered that management of land and water use was the main mechanism by which nitrate targets in groundwater should be achieved. Based on the best scientific and economic information, the Zone Committee developed a set of recommendations that will deliver an integrated approach to water management. Some of the key recommendations include:

- Plan Change 5 nutrient allocation zone rules for “red zones” are used as a foundation for managing nutrients across the whole Waimakariri Water Zone. This will be combined with amendments to the permitted activity winter grazing consent thresholds, and additional nitrate loss reductions in the Nitrate Priority Management Area.

- Reduce Permitted Activity winter grazing allowances across the whole Waimakariri Water Zone to minimise the potential for nitrate increases.

- Incentivise industry and local authorities to achieve nutrient reductions greater than the recommended reductions beyond Baseline GMP of 15% for dairy, and 5% for other farming types.

- Environment Canterbury makes sufficient resources available to enable significant improvements to be made in the understanding of the Waimakariri Water Zone

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groundwater system and its connection with the Christchurch aquifer and spring-fed streams.

- Environment Canterbury continues to work with sector and research groups to encourage the further development and implementation of tools and techniques to reduce nitrate leaching.

- The investigation and assessment of on-the-ground actions to address nitrate issues (for example, Managed Aquifer Recharge, targeted stream augmentation, woodchip bioreactors, wetland creation, and water storage).

- Environment Canterbury and Waimakariri District Council will explore a funding stream and management structure to deliver the significant improvements in stream health and biodiversity and mahinga kai diversity and abundance for the Waimakariri Water Zone over the next 5-10 years.

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Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Memo

Date	14 February 2019
To	Environment Canterbury Councillors
CC	
From	Consents Processing

Consents and Water Bottling

The RMA, notification and charging for water

- ECan has to work within the law. The Resource Management Act 1991 (RMA) is the legislation that governs what can, and cannot, be done by ECan in regard to consents to take and use water.
- The RMA enables applications to be made for consent unless an activity is specifically prohibited. Water bottling is not prohibited by the RMA, any national regulation, or any of Environment Canterbury's regional plans.
- Whether an application is notified to the public is based on tests outlined in the RMA. In general, applications can only be notified if applicants request it, effects are "more than minor" or if there are "special circumstances". The Courts have clarified that public interest by itself does not constitute "special circumstances".
- Finally, the RMA only enables councils to recover "fair and reasonable" costs for the processing of applications. There is no mechanism under the RMA for ECan to levy a charge on someone for bottling and exporting water.

Applications for water in Christchurch and the availability of water

- The CCC are the largest user of water in Christchurch (see table 1), with an allocation more than 10x that of the next largest take.
- The CCC currently only use 70% of their consented water allocation. This means there is plenty of drinking water available for community use.
- The current restrictions requested by the CCC for water users is due to the need to take pump stations off line for maintenance, not due to a shortage of water in the aquifer.
- The Canterbury Land and Water Plan (LWRP) recognises the importance of ensuring a supply of water for residents of Christchurch over the long term and therefore restricts new consents to take water in Christchurch for either non-consumptive purposes or for community supply.
- In practice, this means the Christchurch City Council is the only person that can apply for new water in Christchurch.

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- The consents used to take water for water bottling in Christchurch are all existing consents. These consents can be transferred to the new owner of a property by writing to ECan. This is an administrative process and ECan cannot "say no" to these transfers.

- Consents can also be transferred to non-land owners, however it they transferring the consent to a different site, an application must be made to ECan and an assessment of the effects of moving the location of the water permit provided. If the effects of the transfer are unacceptable, consent may be notified and refused.
- As any person (including companies) can hold a resource consent under the RMA, the nationality of a company's shareholders is not a relevant consideration in considering who can hold consent under the RMA.
- This means that any person (including a company or the CCC) can purchase a site and, with the agreement of the previous owner, take over any consent on site.

Applications to change the "use" of an existing consent

- Depending on the terms of a transferred consent, an application may be required to use the water taken for a different purpose. Where this, or any other, change is sought to an existing consent, applicants must provide assessments of the effects of the proposal.
- There is a current Judicial Review before the Courts of this process, regarding whether a use can be considered independently of a take.
- In considering these applications the RMA does not provide ECan the ability to consider whether a proposed "use" of water is better than another "use".
- The Courts have also determined that existing (exercised) consents are part of the environment and any assessment of effects must be assume that the consent is being used.
- In regard to the deepening of Cloud Ocean's bore, evidence shows, and an independent commissioner, the Christchurch City Council, ECan and Cloud Ocean's consultants agree, that Cloud Ocean's water bottling will not affect city water supply.

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Table 1. Top 20 Water Takes in Christchurch-West Melton Allocation Zone as of September 2018

Record No	Holder	Record Status	Annual Volume (m^3 year)	Notes
CRC180837	Christchurch City Council	Issued - Active	73,654,978	Community drinking water supply and institutional, industrial, processing, stock water, amenity, irrigation use and fire-fighting activities
CRC183761	Rapaki Natural Resources Limited	Issued - Inactive	5,117,780	Commercial water bottling
CRC970466	Heinz-Wattie Limited	Issued - Active	5,035,056	Industrial purposes
CRC183080	Isaac Conservation Trustees Limited	Issued - Active	4,492,800	Industrial purposes (used for salmon farm ponds discharged under CRC971019)
CRC970754.1	Christchurch International Airport Limited	Issued - Active	3,607,240	Commercial air conditioning purposes; returned to ground
CRC163776	Silver Fern Farms Management Limited	Issued - Active	2,466,464	Industrial purposes including (but not limited to) meat works processing, cooling, effluent management etc.
CRC163795	Silver Fern Farms Management Limited	Issued - Active	2,304,120	Meat and food processing Cumulative condition with CRC012101 states: Water shall not be taken from bore M35/10322 when water is taken from bores M35/3670, M35/1223 or M35/1222 as authorised by consent CRC012101.
CRC990457.2	Goodman Fielder New Zealand Limited.	Issued - Active	2,184,000	Industrial purposes including (but not limited to) processing of milk products, packing of water and juice, supply to warehouse and office facilities etc.

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CRC180312	Rapaki Natural Resources Limited	Issued - Inactive	2,096,640	Commercial water bottling
CRC173912	Ministry of Justice	Issued - Active	2,000,000	Heating and cooling. Non-consumptive (discharged under CRC173911)
CRC080267.2	Christchurch International Airport Limited	Issued - Active	1,971,000	Water supply for Christchurch International Airport
CRC181688	Computer Concepts Limited	Issued - Active	1,897,344	Groundwater is used for cooling purposes (discharged to ground under CRC134461)
CRC186036	Ngatapa Limited	Issued - Active	1,719,861	Irrigation of crops and pasture. Combined AV of 1,719,861 with CRC972160.2
CRC140910	Gen-I Limited (a division of Telecom (NZ) Ltd)	Issued - Active	1,581,120	Datacentre cooling. Non-consumptive (discharged under CRC133876)
CRC182813	Cloud Ocean Water Limited	Issued - Active	1,576,800	Commercial water bottling
CRC990756	Christchurch City Council, Leisure Unit	Issued - Active	1,572,480	Swimming pool filling and heat exchange purposes
CRC971802	Ravensdown Fertiliser Co-operative Ltd	Issued - Active	1,572,480	Industrial purposes
CRC154729	The Arts Centre of Christchurch Trust Board	Issued - Active	1,509,581	Heating and cooling purposes. Non-consumptive (discharged under CRC154730)
CRC971020	Isaac Construction Limited	Issued - Active	1,506,960	Truck wash and gravel wash. Non-consumptive (discharged to ground under CRC971021)

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Attachments:

File reference: (SharePoint or TRIM)

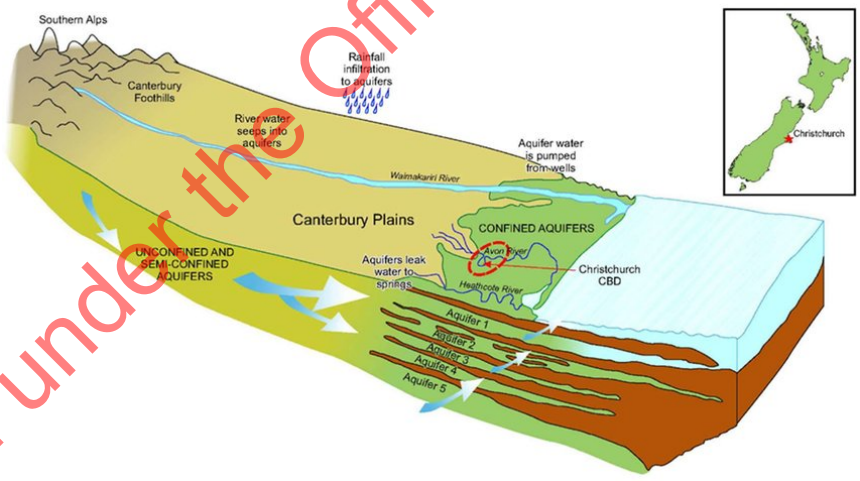
How did the aquifers below Christchurch form?

The water bearing layers under Christchurch are gravels and sand deposited by rivers running across the ancient alluvial fans that make up the Canterbury Plains. For Christchurch it is the Waimakariri River which has formed a giant alluvial fan spilling gravels out from the eroding Southern Alps over hundreds of thousands of years. Water can, and does, move through the spaces between the bits of gravel and sand underground; these are the aquifers.

Where the alluvial fans reach sea level there are wetland and lagoons formed which together with the ocean itself deposit mud and silt at their bottom rather than the sand and gravels of the alluvial fans. The fine-grained mud and silt in these layers doesn't allow nearly as much water to pass through them; the small clay and silt particles are much closer together and we refer to these layers as aquitards.

The layers of aquifers and aquitards underneath Christchurch have formed over hundreds of thousands of years as the sea level has risen and fallen with a series of ice ages. In glacial times the alluvial fans extended over Christchurch; and during interglacial periods the sea level was similar to now and muds and silts were deposited.

As we go vertically below Christchurch we are moving back in time and seeing a series of permeable (gravels and sand) and less permeable layers (muds and silts) being deposited. These form the aquifers (permeable layers) and aquitards (less permeable layers) which can be seen in the diagram below. As we move further west (i.e. up the Canterbury Plains away from Christchurch) we reach a point where the sea level never reached as it was too high. At these locations we don't see the aquitards; only a single aquifer.



A conceptual diagram of the Christchurch aquifers.

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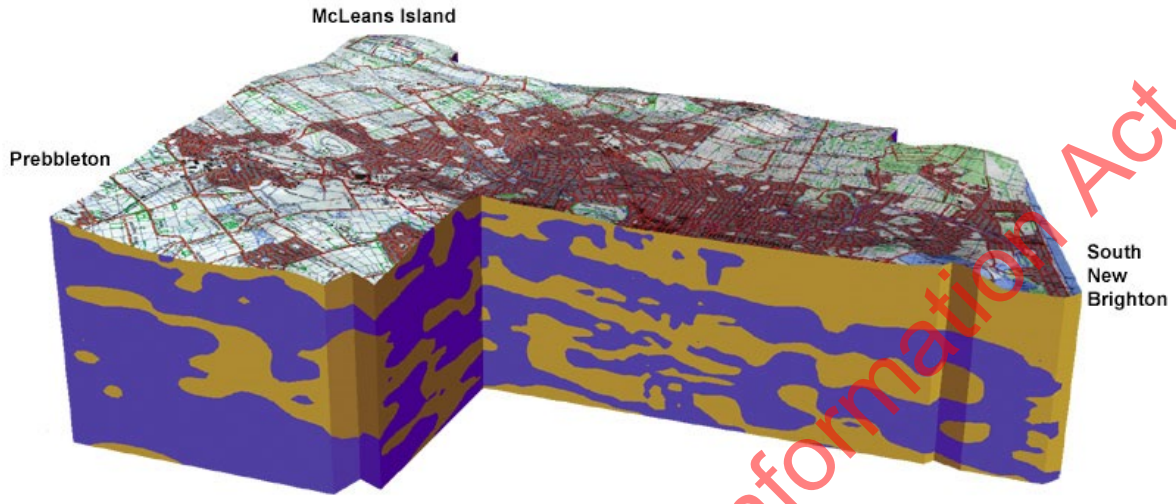
Are the Christchurch aquifers separate water bodies?

The conceptual diagram above suggests five separate and distinct aquifers beneath Christchurch. In the early days of understanding Christchurch groundwater this was thought to be the case but newer science shows us that the layers are not as clear and distinct as the diagram suggests. When GNS Science used three-dimensional investigation techniques to map the layers below Christchurch they derived the image below.



Three dimensional map of aquifers and aquicludes under Christchurch. Blue/purple areas are aquifers and the yellow/brown areas are aquitards (source: GNS Science).

While it is possible to see the different layers of aquifers at a single point below Christchurch, the GNS Science investigation also shows that they are interconnected in places and therefore water can move between the layers. For this reason, although we refer to separate aquifer layers we do not treat them as separate water bodies as water can, and does, move between the layers.

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How much water is there beneath Christchurch?
In an average year the Christchurch aquifers have 375 M m^3 moving through them. This is the equivalent of around 150,000 Olympic swimming pools of water.

It is very important to compare measurements using the same units; in most of the examples here I will use million cubic metres per year (M m^3/yr). If you prefer to think in litres then one million m^3/yr is the same as one billion litres per year.

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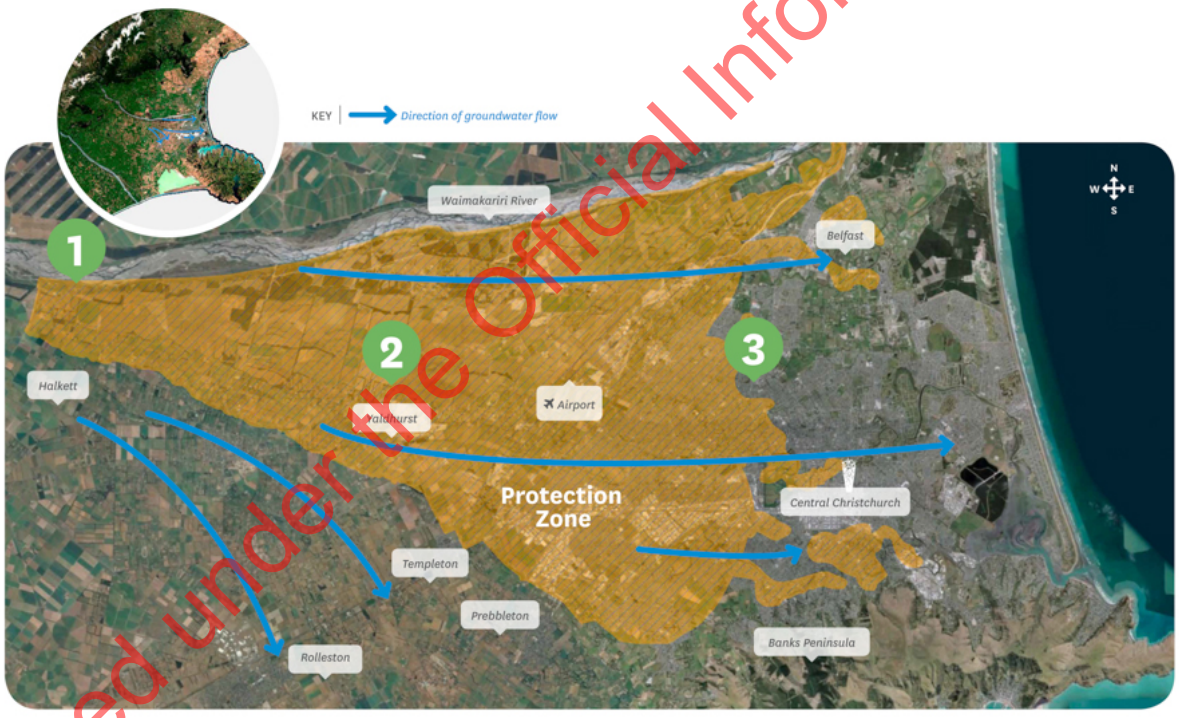
Where does water in Christchurch aquifers come from?
Two thirds of the 150,000 Olympic swimming pools (i.e. 252 M m^3/yr) comes from the Waimakariri River as it runs across the Canterbury Plains.

We know from many measurements that the Waimakariri consistently loses approximately 8 cumecs of river flow to groundwater; this is particularly evident in the area from Courtenay down to State Highway One. This water percolates under the river and moves into the Christchurch aquifers. Close to the river (e.g. near the Christchurch airport) this water is less than 10 years old but further east it can be many hundreds of years old.

The remaining one third of water in the Christchurch aquifers (i.e. 123 M m^3/yr) comes from rain falling onto the ground and infiltrating through the soil and into the gravel aquifers. The amount of land-surface-recharge varies year on year depending on the climate. The main area of land-surface-recharge is from West Melton to Christchurch airport and then State Highway One. This water from land-surface-recharge is vulnerable to contamination at the soil surface; this is why there are tight restrictions on land use in the Christchurch Groundwater Protection Zone (see below)



The Christchurch Groundwater Protection Zone (where the main Land Surface Recharge occurs) is shown in brown/yellow

Recent science investigation has shown that some land-surface recharge may come from north of the Waimakariri River and travel in deep flow paths into the Christchurch aquifer. The exact amount of this is unknown and restrictions are currently proposed for this land area to protect the Christchurch aquifers into the future. Current monitoring of water quality in deep groundwater near the Waimakariri River has shown no influence of land use.

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How much water is allocated for use?
Of the 375 M m^3/yr in the Christchurch aquifers:

- 208 million m^3/yr (55%) flows down spring-fed rivers like the Avon, Heathcote and Styx.
- 152 million m^3/yr (41%) is allocated for use by people living and industries based in Christchurch. N.B. This is the maximum that can be used in a year; not all allocated water is actually used.
- The reminder of water (included allocated water that hasn't been used) is difficult to measure and account for. It either flows out to sea and emerges in undersea springs; flows out in unmeasured springs (e.g. in the bed of the Ihutai/Avon/Heathcote estuary) or moves into other catchments like the Halswell River.

What is the allocated water used for?
By far the largest use of water in Christchurch is allocated to Christchurch City Council for supplying domestic and small commercial users. The amount allocated to the Christchurch City Council is 85 M m^3/yr.

The remaining 67 M m^3/yr is allocated to commercial businesses in Christchurch that have their own water supply. Typical users are industries, hospitals, golf courses and some limited agricultural irrigation.

Ten million m^3/yr is allocated to potential water bottling plants abstracting from the Christchurch aquifers. It is important to note that this is allocated water and it is not all used. Water bottling is allocated 2.7% of the water in the Christchurch aquifers.

If we consider the Christchurch aquifer as equivalent to a 10 litre bucket of water then fractionally over one cup of that water is allocated to water bottling.

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Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Memo

Date	14 February 2019
To	Environment Canterbury Councillors
CC	
From	Jason Holland, Team Leader Planning – Land and Water

Waimakariri sub-region plan change

1. After more than 2 years of receiving technical information, a significant programme of consultation, and an incredibly full schedule of workshops, the Waimakariri Zone Committee confirmed its final Waimakariri Zone Implementation Programme Addendum (Waimakariri ZIPA) on 19 November. The Waimakariri ZIPA included more than 100 recommendations aimed at the Canterbury Regional Council (Council), and other parties, seeking statutory and non-statutory actions to improve land and water management.
2. On 13 December 2018 Canterbury Regional Council (Council) received the Waimakariri ZIPA. Resolutions passed included that Council:
    - *Receives the Zone Implementation Programme Addendum for the Waimakariri Zone, as adopted at their meeting of the 19 November 2018.*
    - *Endorses the Zone Implementation Programme Addendum as the basis for drafting planning provisions for the Waimakariri section of the Land and Water Regional Plan and any consequential changes to any other regional plans.*
    - *Notes that:*
        - *Some of the recommendations in the Zone Implementation Programme Addendum are being addressed through current work programmes.*
        - *Some recommendations will require additional funding. Securing additional funding will form part of ongoing discussions with the Zone Committee to prioritise actions and identify funding sources.*
        - *Any additional funding from Environment Canterbury will need to be secured through a future Annual Plan or Long-Term Planning process.*
3. In response, Council planning staff have commenced the drafting of two separate but related plan changes. The change to the Waimakariri River Regional Plan is relatively minor and will achieve the outcome of a single land and water plan for the Waimakariri sub-region. The more substantive plan change will be to the Waimakariri section of the Land and Water Regional Plan ("the Waimakariri sub-region plan change").

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4. Some important elements of the Waimakariri sub-region plan change include:
    - stricter controls on nitrate losses from farming activities (in response to the potential risks identified through recent modelling work)
    - stronger stock exclusion rules (extending on the region-wide stock exclusion rules already in the LWRP)
    - increases to many minimum flows on rivers
    - reductions to the quantum of water generally available for allocation to irrigation and other uses
    - new allocations of water from the Cam River/Ruataniwha and Ashley River/Rakahuri ring-fenced for "mahinga kai purposes".
5. This plan change is scheduled for notification in late June 2019. This date is consistent with the Levels of Service in Council's Long-Term Plan 2018-2028. Importantly, notification before resumption day also enables Council to make use of the limited appeal rights of the ECan Act, which will mean faster implementation of the plan change and faster achievement of the environmental benefits expected from it.
6. The process for developing a proposed plan change must follow the procedure set out in Schedule 1 to the Resource Management Act. The RMA requires consultation with a range of parties prior to notification, including with potentially affected local authorities and Ministers, amongst others. The Christchurch City Council, and Minister for the Environment, will be included in this pre-notification consultation.
7. Pre-notification consultation with those Schedule 1 parties will begin in early-mid April 2019 with distribution of the draft plan changes for comment. There is no specified timeframe by when comments must be received. While in previous instances periods of 10 or 15 working days have been allowed for, in this instance we have scheduled 20 working days in recognition that some parties will also be interested in the Omnibus and OTOP plan changes (which are likely to follow an identical timetable).

Christchurch West Melton process

1. Council's Long-Term Plan sets out a forward programme of freshwater plan changes extending out to 2026/27. This is mirrored in Council's Progressive Implementation Programme (PIP) to implement the National Policy Statement for Freshwater Management (noting that a revised version of the PIP to achieve alignment between the two documents was adopted by Council on 13 December).
2. Council's forward planning programme includes notification of a "National Planning Standards" plan change in 2022. This plan change is also signalled as the vehicle through which to progress any amendments (as necessary) to the environmental limits for water quality and quantity in the Christchurch West Melton sub-region.

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3. Discussions with Council have yet to begin on the likely scope of this process, and given the priority which needs to be afforded by Council to other processes in coming months (such as the Waimakariri sub-region), it is possible this discussion may not commence until after this year's local body elections.
4. Council is also considering a range of competing spending priorities in developing its current Annual Plan, which will be released for public consultation later this month. To avoid a double-figure rates increase, Council is considering the option of a 2023 date for notification of the National Planning Standards plan change.

Attachments:

File reference: (SharePoint or TRIM)

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Canterbury's drinking water supply

Canterbury has some of the best drinking water in the world, but no water supply is completely without risk.

So, who makes sure we have a safe and secure supply of drinking water now and into the future?

Environment Canterbury, local councils and District Health Boards all play an important role in ensuring we have clean drinking water.

Local councils are responsible for ensuring the water coming out of your taps is clean and safe.

If there are any issues the water can be treated with UV or chlorine until the supply is safe again.

Environment Canterbury's role is to protect our drinking water at its source and monitor it to ensure the supply is safe. Environment Canterbury regulates land uses and activities that could compromise drinking water supplies.

The Ministry of Health appoints drinking water assessors who are employed by the District Health Board to oversee the impact of water quality on your health.

These assessors are responsible for monitoring and compliance of the New Zealand Drinking Water standards.

Things are a little different for people on a private supply. If you have your own drinking well, you are responsible for ensuring your water is safe to drink. There are some simple things you can do to achieve this like regular testing and ensuring wells are free from debris and animals.

Continue overleaf

Waimakariri District Council · Hurunui District Council · Selwyn District Council · South Canterbury District Health Board · Christchurch City Council

Ashburton District Council · Kaikoura District Council · Mackenzie District Council · Timaru District Council · Canterbury District Health Board Te Poari Hauora o Waitaha · Environment Canterbury Regional Council Kaunihera Taiao ki Waitaha

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The information below provides a useful summary of who does what, and what you need to do if you have a private drinking water supply.

ROLES AND RESPONSIBILITIES

Local council

- Supply water to homes and businesses
- Install and manage water distribution infrastructure
- Provide treatment if required to ensure the supply is safe
- Test and monitor compliance
- Develop water safety plans for each supply
- Alert health authorities and the community if there is a water supply or quality issue

Environment Canterbury

- Undertake monitoring and testing to understand the region's water
- Issue consents for activities that could impact drinking water quality
- Work with land-owners to ensure their operations don't have a detrimental impact on drinking water
- Work with the community to develop rules that protect drinking water supply
- Identify drinking water protection zones

The Ministry of Health

The MoH appoints drinking water assessors who are employed by the District Health Board to:

- Oversee the impact of water quality on the public's health
- Ensure suppliers are compliant with drinking water standards
- Assess suppliers' water safety plans
- Investigate any contaminations and health related consequences
- Work with suppliers to inform the community of any health risks

Private supply owner

- It is up to the land-owner to check their private water supply is safe to use
- You should regularly test your water by taking a sample and sending it to a lab for analysis (at your own cost)
- You should also ensure your well head is secure and clear of any debris and fenced off from animals
- It is a good idea to check the historical use of the land to understand what the risk of historical contamination is

For more information visit: https://www.cph.co.nz/your-health/drinking-water/

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Joint ECan/CCC Governance – Water Forum

FAQs to support Councillors' discussion with Minister Parker

1. Christchurch aquifers and their management

Are the Christchurch aquifers separate water bodies?

- Investigations suggest there are different layers of aquifers below Christchurch
- Although we refer to separate aquifer layers we do not treat them as separate water bodies – they are interconnected, and water can and does move between the layers.

How much water is there beneath Christchurch?

- Groundwater is notoriously difficult to measure so it is difficult to be completely precise
- In an average year the Christchurch aquifers have 375 M m^3 moving through them. This is the equivalent of around 150,000 Olympic swimming pools of water.
- Because groundwater moves slowly we frequently refer to cubic metres per year; in rivers where water moves quickly we use units of cubic metres per second (cumecs).

Where does water in Christchurch aquifers come from?

- Two-thirds of the 150,000 Olympic swimming pools (i.e. 252 M m^3/yr) comes from the Waimakariri River as it runs across the Canterbury Plains.
- The remaining one-third of water in the Christchurch aquifers (i.e. 123 M m^3/yr) comes from rain falling onto the ground and infiltrating through the soil and into the gravel aquifers
- The main area of land-surface-recharge is from West Melton to Christchurch airport and then State Highway One. This is vulnerable to contamination at the soil surface, and is why there are tight restrictions on land use in the Christchurch Groundwater Protection Zone
- Some of the land surface recharge may come from north of the Waimakariri River and travel in deep flow paths into the Christchurch aquifer. The exact amount of this is unknown and restrictions are currently proposed for this land area to protect the Christchurch aquifers into the future
- Current monitoring of water quality in deep groundwater near the Waimakariri River has shown no influence of land use.

How much water is allocated for use?

- Of the 375 M m^3/yr in the Christchurch aquifers:
  - 208 M m^3/yr (55%) flows down spring-fed rivers like the Avon, Heathcote and Styx.
  - 152 M m^3/yr (41%) is allocated for use by people living and industries based in Christchurch. This is the maximum that can be used in a year; not all allocated water is actually used.
  - The remainder of water (included allocated water that hasn't been used) is difficult to measure and account for. It either flows out to sea and emerges in undersea springs;

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flows out in unmeasured springs (e.g. in the bed of the Ihutai/Avon/Heathcote estuary) or moves into other catchments like the Halswell River.

What is the allocated water used for?

- 85 M m^3/yr is allocated to Christchurch City Council. This is easily the largest use of water in Christchurch and is for supplying domestic and small commercial users. Only 70% of this consented water allocation is used, meaning there is plenty of drinking water available for community use.
- The remaining 67 M m^3/yr is allocated to commercial businesses in Christchurch that have their own water supply e.g. industries, hospitals and golf courses.

2. Consents and water bottling

How much water is allocated to water bottling?

- Of the 67 M m^3/yr allocated to commercial businesses, 10 M m^3/yr is allocated to potential water bottling plants abstracting from the Christchurch aquifers. This is allocated water and is not all used.
- This equates to 2.7% of the water in the Christchurch aquifers. If we consider the Christchurch aquifer as equivalent to a standard 10 litre bucket of water, then fractionally over one cup of that water is allocated to water bottling.

How are consents for water bottling managed?

- The consents used to take water for water bottling in Christchurch are all existing consents. These consents can be transferred to the new owner of a property by writing to Environment Canterbury. This is an administrative process and Environment Canterbury cannot “say no” to these transfers.
- The Resource Management Act (RMA) allows consent unless an activity is specifically prohibited – water bottling is not. The key issue then is whether consent will create environmental efforts that are more than minor, which must be assessed on a case by case basis. Policy may also provide reason to decline a consent, however, there is no national or regional policy specifically on water bottling.
- The Canterbury Land and Water Plan recognises the importance of ensuring a supply of water for residents of Christchurch over the long term and therefore restricts new consents to take water for either non-consumptive purposes or for community supply.
- In practice, this means the Christchurch City Council is the only person that can apply for new water in Christchurch.

3. Sub-region planning programme

When will changes to the Christchurch-West Melton sub-region plan be considered?

- Environment Canterbury’s forward planning programme includes notification of a “National Planning Standards” plan change in 2022 (note an alternative 2023 date is being considered to manage costs to our ratepayers). This plan change may be used to progress any necessary amendments for the Christchurch West Melton sub-region.

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- Discussions have yet to begin on the likely scope of this process, and it's possible this discussion may not commence until after this year's local body elections.
- Environment Canterbury's immediate planning focus is on notifying the Waimakariri and Orari Temuka Opihi Pareora (OTOP) sub region plan changes and an omnibus plan change in mid-2019. This is consistent with the Council's Progressive Implementation Programme to implement the National Policy Statement for Freshwater Management.

How is the Waimakariri sub-region plan change progressing?

- The Waimakariri Zone Committee confirmed its final Waimakariri Zone Implementation Programme Addendum late last year. This included more than 100 recommendations seeking statutory and non-statutory actions to improve land and water management
- The drafting of two separate but related plan changes has commenced. The change to the Waimakariri River Regional Plan is relatively minor and will achieve the outcome of a single land and water plan for the Waimakariri sub-region. The more substantive plan change will be to the Waimakariri section of the Land and Water Regional Plan.
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- This process will follow the procedure set out in Schedule 1 to the RMA. The RMA requires consultation with a range of parties prior to notification, including with potentially affected local authorities and Ministers, amongst others.
- We anticipate pre-notification consultation with CCC, the Minister and other Schedule 1 parties in April this year.

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- Notification is scheduled for June 2019 to enable a timely progression to an operative plan.
- This process will follow the procedure set out in Schedule 1 to the RMA. The RMA requires consultation with a range of parties prior to notification, including with potentially affected local authorities and Ministers, amongst others.
- We anticipate pre-notification consultation with CCC, the Minister and other Schedule 1 parties in April this year.

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From: Andre Silveira
To: s 9(2)(a) @forestandbird.org.nz
Cc: Curtis Hammond; Ministerials
Subject: OIA 19-D-01902 s 9(2)(a) - final tranche of information
Date: Friday, 25 October 2019 11:01:00 PM
Attachments: 19-D-01902 s 9(2)(a) material_third tranche_Final.pdf
List of documents - third tranche.pdf

Kia ora s 9(2)(a)

Attached is the information for the third and last tranche of information as stated in the response letter of 4 October. This tranche comprises 17 documents which are being released in full, including emails, attachments, texts messages and meeting notes, as detailed in the attached
document schedule.

Yours sincerely,

Andre Silveira (PhD) – Policy Analyst
Water Taskforce – Ministry for the Environment

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DOCUMENT SCHEDULE

Sender	Recipient	Subject	Date	Decisions	OIA sections applied
martin.workman@mfe....	David.Burger@dairyn...	In confidence - not government policy - not ...	22/05/2019 18:11	Released in full	
Observation - the message contains policy proposals that differ from what was included in the Discussion Document.					
They refer to interim thinking that was superceded by further work.					
martin.workman@mfe....	Dave.Harrison@beefl...	In confidence: Freshwater Workshop - Papers	28/05/2019 18:23	Released in full	
Attachment 1 - Essential Freshwater NES Proposals				Released in full	
Attachment 2 - Essential Freshwater NPS-FM Proposals - Primary Sector Workshop				Released in full	
Observations - Attachments 1 and 2 contain policy proposals that differ from what was included in the Discussion Document.					
They refer to interim thinking that was superceded by further work.					
GForrest@fedfarm.or...	john.blincoe@parlia...	Unauthorised sharing of confidential informa...	11/06/2019 17:24	Released in full	
martin.workman@mfe....	Charlotte.Rutherfor...	Re: Questions for Fonterra - please could yo...	3/05/2019 14:40	Released in full	
Attachment - Questions for Fonterra_message from Martin W to Charlotte Rutherford@Fonterra on 01_05_2019				Released in full	
martin.workman@mfe....	Charlotte.Rutherfor...	RE: good to catch up last week	20/05/2019 12:40	Released in full	
David.Burger@dairyn...	Antony.Heywood@hort...	RE: Essential Freshwater working group	17/05/2019 12:59	Released in full	
martin.workman@mfe....	Charlotte.Rutherfor...	Re: Data questions	9/04/2019 20:04	Released in full	
martin.workman@mfe....	Tim.Davie@ecan.govt...	Re: Contact recreation study	20/03/2019 13:47	Released in full	
martin.workman@mfe....	Dave.Harrison@beefl...	RE: In confidence: Freshwater Workshop - Pap.	29/05/2019 18:58	Released in full	
EKelsall@fedfarm.org.nz	martin.workman@mfe....	Re: Federated Farmers Board Meeting	6/06/2019 17:00	Released in full	
Texts to and from Charlotte Rutherford @ Fonterra in the period from 9 April to 21 October				Released in full	
Texts to and from David Burger @ Dairy NZ in the period from 30 May to 21 October				Released in full	
Observation - the period for both sets of texts was limited to the phones memory and was therefore restricted to the last six months.					
Meeting notes 12/04/19				Released in full	
Meeting notes 16/05/19				Released in full	
Meeting notes 29/05/19				Released in full	

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Wednesday, 22 May 2019 6:12 PM
To: David.Burger@dairynz.co.nz
Subject: In confidence - not government policy - not to be shared: N Surplus proposal and stock exclusion

Hi

Thanks for the chat today. Here is some of the information that I said I'd send. Still waiting for definitions on feedlots and stock holding areas. These are still proposals being worked on.

Good to get your comments on this material. I'm meeting with other industry groups tomorrow to have a similar discussion as what we had this morning.

N Cap – New proposal and needs a new name e.g. N-surplus thresholds - Extend the FEP proposals using N-surplus to target high nitrogen leachers in specified catchments

- This is a short-term proposal – superseded by regional council rules and/or Fair Allocation by 2025. The critical design parameter is that it must be quick to put in place, as well as effective in reducing N-losses.
- It targets farms where high leaching is a result of practice/management, rather than soil/climate etc. The latter aspects are part of the Fair Allocation work stream.
- Identification of N-impacted catchments:
    - Work will build on the NIWA modelling (map here: https://statisticsnz.shinyapps.io/river_water_quality_nitrogen/), amended using Ton Snelder's revised N-load model (only just completed) and the Our Land and Water Science Challenge on "pressure" which takes account of the receiving waters (greater pressure if estuary or lake or low-flushing river.
    - The catchment list will be filtered based on a council rules review - to filter out those where councils already have rules in place to reduce high leaching
    - The catchments highlighted will need to be ground-truthed with the relevant councils

- Specification of method(s) for the N-surplus calculations via a ready reckoner, App and/or from an existing Overseer file (N-surplus is the difference between N brought onto the property e.g. as fertiliser, supplementary feed, livestock; and N leaving the property in product. N fixed from clover can be incorporated – and is in the Overseer calculation of N-surplus **– yet to be determined whether we should include this).**
    - Threshold for N-surplus set by sector, nationally (but applies only in the specified catchments). We will commission work to set the thresholds, some background on N-surplus is here n-surplus-shows-performance/).
    - We would be keen to have sector organisation help with drafting the scope of work for this analysis. **Note: the sectors may be aware that the "efficient" N surplus varies with system type e.g. the efficient N surplus from a well managed system 5 dairy farm is higher than from a system 1 – so that's why it would be good to have the sectors involved in drafting the scope of work to determine the N-thresholds.**
- Identification of affected farmers/growers in N-impacted catchments, and proposed NES rules. The amended proposal would include specified N-impacted catchments in the first tranche of the Farm Environment Plan proposed roll-out (2020-2022), and use N-surplus rather than an Overseer N-loss figure
    - All farmers in the catchment will be affected: N-Surplus calculation included in the FEP, certified person to check N-surplus is correct and sight supporting documents
    - If N surplus on a farm is over the nationally set threshold, FEP must include measures to reduce the levels to the threshold within a specified timeframe, FEP provided to council (?). Annual audits for this group. Audit grades and N-surplus outcomes provided to council. Sector views on the timeframe would be useful – e.g. by 2025.

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- All FEPs in these catchments must include consideration of measures to reduce N-surplus (to avoid the potential issue of no net gain from bringing the top dischargers down), even if they are under the threshold

- Councils could be more stringent (eg, require an Overseer budget).

Questions for the sectors:

- Who should we be in contact with in their organisations to help get the N-surplus threshold work commissioned?
- Views on the FEP process as a vehicle? It's a delicate balance – the FEP proposal is the more foundational and enduring – we don't want to reduce compliance with the FEP proposal by adding in the N-cap aspects
- Could we fast track this proposal – could we work with them to kick off early as a voluntary initiative? – getting farmers to assess their N-surplus, bench mark against neighbours, publicising ways to bring the N-surplus down?

Stock Exclusion Proposals

We are exploring:

I. For the purpose of stock exclusion, dividing the country into 'Lowland Area" and 'other' area. The Lowland Area will be mapped (MPI are currently producing an initial map) and encompass all flat to gently rolling, low altitude, land where intensive farming Is the predominant land use and fencing could not be considered unreasonably onerous due to the nature of topography and surface hydrology (ie, a limited number of first and second order streams).

ii. Within Lowland Areas:

a. All lakes and all permanent and intermittent (but not ephemeral) rivers and drains (but not stock water races) >1m wide should have stock excluded:

• within 12 months for all dairy and dairy support
• within 3 years for other pastoral systems.

b. All permanent and intermittent (but not ephemeral) rivers and drains (but not stock water races) <1 m wide should have stock excluded:

• within 3 years for all dairy and dairy support
• within 5 years for other pastoral systems.

c, All wetlands should have stock excluded:

• within 12 months where the wetland is identified in a regional or district plan, and
• within three years for other wetlands

d. At least a 5m setback (from the edge of the bed) Is to be provided from all rivers (including modified watercourses) and lakes. A 5m setback is to be provided from the edge of any wetland. No setback is required from drains (being artificially created ditches designed to lower the water table rather than modified natural wa er courses). Where a stock exclusion fence exists as at the date of gazettal, the owner will have 5 years to move the fence to provide for the riparian setback.

e. An opportunity will exist to apply (on a case by case basis) to have the stock exclusion and/or setback requirements not apply. Decisions to grants such exemptions will be reviewed every five years.

f. For the purpose of the regulation "stock" will mean cattle, deer and pigs. Stock exclusion will generally mean either permanent or temporary (electric) fencing but the direction will be broad enough such that other technology (eg. virtual fencing and 'smart' stock collars) could be adequate.

iii. Outside of Lowland Areas a risk-based approach should be taken whereby stock exclusion will be required on any property engaged in any of the following:

a. Dairy or pig farming (unless they are fully housed)
b. Cattle (including dairy support) or deer break-fed on fodder crops
c. Cattle (including dairy support) or deer on irrigated pasture
d. Cattle (including dairy support) or deer where the stocking rate over the effective area of the property exceeds 18 stock units per ha; or where the stocking rate on any riparian paddock exceeds a prescribed stocking rate (further work is required to confirm the appropriate paddock-scale

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stocking rate). For the purpose of this regulation, stocking rate will be calculated taking into account only cattle, deer and pigs (ie. on mixed sheep and beef farms sheep will be excluded from the stocking rate calculation).
iv. When triggered, the nature of exclusion and setback requirements should be largely the same as those that apply in the Lowland Area except that:
a. The stock exclusion is only required in relation to paddocks on which the risk activities described in iii (a) —(c) occur.
b. Where the activity is subject to a resource consent, the resource consent (and associated FEP) may specify stock exclusion and setback requirements that are more stringent than those included in the regulation and those consent/FEP requirements will prevail over those of the regulation. That is designed to allow the nature of risk to be assessed on a case-by-case basis.
c. If the activity is established after gazettal of the regulation the stock exclusion requirement should apply immediately.
d. An application may be made for an exception to the regulation on part of a property. That recognises that, notwithstanding the activity being undertaken on the property, the risks may be low (this may apply **to parts** of larger properties where intensive farming is not undertaken).
v. Infrequent stock crossings (being continuous movement crossings not more frequent than twice per month) will be permitted, Otherwise, stock crossing points will need to be bridged or culverted according to the timeframes for stock exclusion. The one exception to this will be in respect of deer where a managed crossing point (an unbridged crossing where deer are crossed in a single movement) will be permissible. That is considered reasonable due to the practical difficulties of driving deer over confining structures.
vi. Although the above regime will manage the most extreme risks associated with stock access, any animals having access to water bodies can have significant adverse effects if that access occurs frequently enough or involves sufficient numbers of stock (regardless of stocking rate). For that reason regional plans should not be allowed to permit stock access to wa er bodies unless there are enforceable performance-based conditions in place to ensure adverse effects do not result (including in particular the pugging and/or de-vegetation of the banks of any river, lake or wetland).
vii. The proposal does not require mandatory planting of riparian setbacks. That is considered appropriate given:
a. the very significant scale and cost
b. the role that FEPs will play over time in requiring planting of riparian margins as appropriate to manage farm specific risks. (FEPs will include a specific requirement to address riparian management. The person preparing the FEP will need to assess the riparian management needs specific to each property's risk, including if setbacks greater than 5m are required in specific areas)
c. the likely incentive that would accrue for voluntary planting by landowners for weed control and aesthetic reasons.

The below replaces the highlighted text above.
We propose that the 5m setback be expressed as an average width for each water body contained, or partially
contained, within a property (with a minimum 1 m setback).

We propose that the transitional timeframe be revised so that those existing fences that have provided for a setback of at least 1 m and an average of at least
2m, be permitted to remain in place until 2035. The 5 year relocation requirement will remain for those fences that have been erected with no, or the barest minimum, setback.

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This provides some reward for those who have acted proactively without allowing inadequate fencing to remain beyond 5 years.

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Tuesday, 28 May 2019 6:23 PM
To: Dave.Harrison@beeflambnz.com; 'Matt Ward'; david.burger@dairynz.co.nz; antony.heywood@hortnz.co.nz; Michelle Sands; Paul Le Miere; GForrest@fedfarm.org.nz; Ewan Kelsall; Annabelle Ellis; Nicola Scott; Roger Lincoln; Charlotte Denny (MPI); Irene Parminter; Corina Jordan; Gerard Willis; Jennie McMurran; Mary McCulloch; Mary-Anne Baker; Nick Martelli
Subject: In confidence: Freshwater Workshop - Papers
Attachments: Essential Freshwater NES Proposals.docx; Essential Freshwater NPS-FM Proposals - Primary Sector Workshop.docx

Hi

Attached are papers setting out key parts of the draft Essential Freshwater package. I'm looking forward to getting your feedback at the workshop tomorrow. The proposals are still being worked on.

The material is to be treated in confidence and is not to be shared.

See you tomorrow.

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Current proposals for national direction on rural land use

As at 28 May 2019

Black text = proposals in EF 45, Blue text = updated policy, proposals in EF 50, with some minor subsequent updates

Nitrogen surplus

Proposal

- The proposal is targeted at reducing leaching caused by management practices, as an interim regulation where catchments do not have operative rules giving effect to NPS-FM
- The intervention would be further targeted at catchments that are highly nitrogen-impacted i.e. where nitrogen losses matter most
- The policy is not intended to achieve structural or land use change that may be required as part of an allocation regime or regional plan implementation of the NPS-FM
- Maximum thresholds set by catchment, based on a percentile of existing distribution of N-leaching per hectare modelled by Overseer e.g. 75th (with a different approach for horticulture)
- Requirement for farmers over the threshold to reduce discharges to the threshold in a specified time period, consent required with an FEP showing how the threshold will be achieved
- First three bullets above remain in the revised proposal, with a change in the approach to setting the threshold and the primary tool for achieving the threshold:
    - Include high N-impact catchments in the first tranche of FEPs
    - All FEPs in high N-impacted catchments required to include an N-surplus[1] calculation using prescribed method(s), and targeted actions
    - FEPs for those over a national set of N-surplus thresholds (by sector) required to show how they will achieve the threshold within a timeframe specified in the NES, with greater reporting and auditing requirements than those under the threshold
    - Plans can be more stringent (eg require an Overseer budget)

Reasons for the changes:

- Targeting the policy to the objective: An approach using N-surplus directly targets management practice, unlike Overseer modelled N-losses which reflect factors beyond an individual farmer's control such as climate and soil. In addition national thresholds can be set (by sector) based on good practice, rather than catchment thresholds.
- Effectiveness: all farms in the catchment will need to consider actions to reduce N-surplus, not just those above the threshold – this avoids the gains in water quality made by reducing N-surplus at the top end being whittled away by increases from farms below the threshold.

[1] Nitrogen surplus is the difference between N inputs and N outputs on a farm. It focuses on the drivers of N losses that a farmer can change (farm management practices) and not on soil and climate drivers. A higher N surplus is associated with higher nitrate leaching, ammonia volatilisation and emission of nitrous oxide.

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- Speed: As an interim policy, it needs to be quick to implement and take effect. The collection of Overseer data catchment by catchment to determine the threshold, and consent processes, would delay implementation; whereas an FEP/N-surplus-based approach can be implemented more quickly. N-surplus calculations are fast, simple and low cost compared with obtaining Overseer baseline modelling.

Questions:

- How should the appropriate thresholds be set?
- How long should be allowed for reducing the N surplus if over the threshold?
- What additional messaging is required so that this is clearly seen as an interim measure; and councils may require more reductions once limits are set and regional rules are set?

Intensification

Proposal

- Interim intensification regulations targeted at regions/catchments that do not have fully operative rules and limits giving effect to part CA of the NPS-FM (regs no longer apply to a region/catchment when objectives and limits set):
    1. Increase in irrigated pastoral/arable/horticulture production (above a minimum threshold)
    2. Increase in the maximum consented area for intensive winter grazing of forage crops (ie, with reference to the 2013 – 2018 footprint)
    3. High-risk land-use changes:
        i. arable, sheep or beef to diary support
        ii. arable, sheep, beef, or dairy support to dairy
        iii. forestry or woody vegetation to any pastoral use.
    4. Any land-use change to commercial vegetable growing where it would increase the applicant's net area in commercial vegetable growing the sub catchment
- Consent conditions are:
    - must have Farm Environment Plans
    - no increase in N, P, sediment or microbial pathogen discharges above a 2013-2018 baseline
- Second option for consent conditions on commercial vegetable growing rule:
    - Must have a Farm Environment Plan
    - Must be operating above good management practice

Changes explained:

"Part CA of the NPS-FM"

This further clarifies our original intent for where the regulations would apply. Our original wording was that the regulations would apply to areas that have not fully implemented the NPS-FM. However, our intention was always for it to only apply to areas that have not been through a full community-based objective and limit setting process, which is set out in part CA of the NPS-FM. It therefore makes sense to refer explicitly to this particular part of the NPS-FM.

"arable, sheep or beef to dairy support", "arable to dairy" and "woody vegetation to any pastoral use".

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These are all further high-risk land-use changes that we have added to the regulations to ensure they adequately capture all high-risk land-use changes. The intent is to try and remove potential loop holes from the initial list.

Second option for commercial vegetable growers.

We have decided to consult on two options for consent conditions for land-use change to commercial vegetable growing. We're concerned that the regulations may adversely impact domestic vegetable supply. Stringent consent requirements may make it difficult to replace commercial vegetable growing lost to urban sprawl. Similarly, the regulations may also restrict the ability for commercial vegetable growers to move their operations from over-allocated catchments to catchments with sufficient headroom for new vegetable growing.

Including "operating above good management practice" in the consent conditions is a way to require some sort of practice change for commercial vegetable growers without subjecting them to the full restriction on increases in contaminant discharges.

At the same time – we are conscious that we need to treat high-discharging activities as fairly as possible regardless of the industry, and that as a generally high-discharging activity, conversions into commercial vegetable operations should be subject to the same consent requirements as other types of conversions.

We have not been able to resolve this issue so far and so have opted to explore it further through the public consultation process.

Questions to help refine the proposal:

1. Do you agree that whether an area has fully operative rules and limits giving effect to part CA of the NPS-FM is the correct way to determine where these regulations should apply? Is there a better (objective) way o determining this?
2. Is the irrigation rule going to capture too much low-discharging activity? Is there a way to refine the rule to only apply to large-scale irrigation (perhaps through a threshold, see next question)?
3. Our intention is to include minimum thresholds for increases. The threshold would be since gazettal of the NES (ie no more than X hectares of change since April 2020). Can you help us set thresholds for these changes? Our current thinking is:
    1. Threshold should be based on average area irrigated by a centre pivot – what area should this be?
    2. No threshold – should be based on applicant's previous area in intensive winter grazing
    3. Should be about the size of a small farm – would 50ha be suitable so as not to capture minor changes in mixed-farms?
    4. No threshold (regulations would allow you to maintain your existing area no matter where in the sub-catchment it occurs).
4. Do the land-use changes in 3 capture the main types of high-risk land-use change? Are there any we are missing, any possible loop holes in the list?
5. Option 2 for the commercial vegetable growing conversion rule requires the new operation to be "above good management practice". If we were to go with this option, how could we define this term so we could hold commercial vegetable growers to this higher standard?
6. For the commercial vegetable growing rule, our intention is to allow crop rotations to continue without triggering consent within a defined area where the effects of moving a crop to a different location will be relatively minor (eg, when an area of land has to be taken

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out of production to allow it to recover), so long as the crop area doesn't exceed the area used between 2013-2018. Is "sub catchment" the right term to use here? How could we better define it?

Farm Environment Plans (FEPs)

Proposal

- FEPs should be risk based and mandatory
- Phased roll out proposed, with two tranches, 2022 and 2025
- 2022 phase – including vegetable growing; all farms in 3 exemplar catchments; high risk land use activities where consent required; and farms in identified high N catchments (still to be confirmed)
- Minimum content will be defined
- Certified practitioner to approve FEP
- Independent auditing and reporting
- Existing and new FEP regimes enabled
- RCs to monitor the sign-off of FEPs
- Implementation support and continued industry leadership recognised as critical for success
- Roll out over 10 years in three tranches:
    - tranche 1 by 2022
    - tranche 2 by 2025
    - all (Tranche 3) by 2030
- Scope of tranche 1 is being re-worked, initial scope too ambitious. It will need to include high N-pressure catchments
- Scope of tranche 2 is likely to target catchments based on vulnerability and water quality risks, with consideration of regional council and sector capacity.

Reasons for change

The traches for FEPs have been reviewed and delivery date for all FEPs moved from 2025 to 2030. This was as a result of issues raised by Regional Councils regarding capacity and capability across the sector to have all farms with an FEP by 2025. We are now proposing three tranches 2022, 2025 and 2023, and that roll out of the trances should be risk based, but achievable.

Questions:

- What size property/enterprise do you think should be captured by the FEP requirement in the proposed National Environmental Standard (NES)? We are proposing a threshold of 20 hectares and a smaller threshold for horticulture e.g. 2 5 or 10 hectares.
- How should the first two FEP tranches be prioritised in the NES? What do you think could be included in the 2022 FEP tranche? What sector commitments or catchment initiatives might align with the 2022 and 2025 timeframes?
- What are the key elements for effective implementation support that Government can best assist with?

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High Risk Land Use Activities (HRLUAs)

Proposal

- Feedlots, stock holding areas and intensive winter forage crop grazing
- Regulations will prescribe minimum standards and/or require conditions of consent
- Consent for all feedlots and stock holding areas defined in the regulations
- Consent requirement for intensive winter grazing on a slope over 15 degrees, or over an area greater than 50ha/10% of a property
- If a consent is not required, the following conditions apply to intensive winter grazing wherever it occurs (through a technical standard):
  - for grazing management, a 5 m setback, and critical source area protection
  - pugging depth of 10cm over no more than 50% of a paddock (the pugging extent is subject to further analysis. We would also like feedback on this proposal)

- Future development of sediment control measures (eg a requirement for sediment ponds, bunds and cut-offs) **are still being considered**.
- The consent status of the activity **is still subject to further change in response to Minister's concerns.**

Feedlots and stock holding areas

- A **consented activity regime** for the identified activities. Where activities meet the minimum standards, activities should be classed as a **restricted discretionary activity.**
  - For feedlots, if the minimum standards cannot be met then the activity status will be **prohibited.**
  - For intensive stock holding areas, if the minimum standards cannot be met then the activity status will be **discretionary.**

For the purpose of the consultation document, we propose to test the following definitions:

a. Feedlot: An area of land in which the construction of the holding area or stocking density precludes maintenance of pasture or vegetative groundcover, and livestock are confined for more than 80 days in a six month period, and are completely hand- or mechanically-fed. This includes both covered and uncovered areas.

b. Stock Holding Area: An area of land in which the construction of the holding area or stocking density precludes maintenance of pasture or vegetative groundcover, and livestock are confined for more than 30 days in any 12 month period (cumulatively) or for more than 10 consecutive 24-hour days at any time. These can be covered or uncovered areas.

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Commentary on proposed definitions

Currently definitions for the identified HRLUAs (particularly feedlots and stockholding areas) are either lacking or variable across regional councils and industries. Prescribing definitions is essential to achieve the clarity needed for effective policy intervention

Questions

Are the proposed definitions for feedlots and stockholding areas workable?

Feedback on the proposal for pugging depth of 10 over no more than 50% of a paddock would be appreciated. Is this practical and feasible? If not what is a viable alternative?

Stock exclusion

Proposal

- NZ will be divided into 'lowland area' and 'other' area;
- Regulations apply to cattle, pig and deer farms (but not sheep)
- Within lowland areas:
  - all lakes and intermittent (but not ephemeral) rivers >1m wide (including drains) stock excluded within 12 months for all dairy + dairy support; within 3 years for other pastoral systems
  - all permanent and intermittent rivers < 1m should have stock excluded within 3 years for all dairy and dairy support; within 5 years for other pastoral systems
  - all wetlands should have stock excluded within 3 years
  - at least a 5m setback to be provided from rivers and lakes; no setback from drains
  - opportunity to apply to reduce setback/extend timeframe
- For 'other' areas a risk-based approach should be taken, stock exclusion required where:
  a) dairy/pig farming (unless fully housed)
  b) cattle or deer are break-fed on fodder crops
  c) cattle or deer are grazed on irrigated pasture
  d) cattle or deer where stocking rate exceeds 18 stocking units/ha (was previously 14)
- For a) – c) above exclusion is at the paddock level, for d) it is at the farm level.
- All stock crossing points require bridge/culvert
  - 2 crossings per month permitted without bridge/culvert (exceptions for deer)
- 5 metre setback an average per waterway across the property, setback must not be less than 1m
- Existing fences with a setback of less than 1m (or less than an average of 2m) will need to be moved within 5 years
- Existing fences with a setback greater than 1m (and average of at least 2m) but less than 5m will have until 2035 to move.

Reasons for Change

Concern was expressed by multiple parties about the appropriateness of a uniform 5m setback and about the obligation that many existing dairy farmers would have to move recently erected fences.

While the appropriateness of a 5m setback will be a matter we expect to receive significant feedback on from public consultation, at present there is little evidence on the efficacy of setbacks of lesser

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dimension. For that reason the 5m setback is retained for consultation purposes but recognising the practical difficulties of ensuring a uniform 5 meter buffer the proposal was amended to allow that to be assessed as an average. That will allow for some straightening of fence lines – avoiding the need to follow every bend in a river. It may also allow some existing fences to remain in place.

We received advice that most recently installed fencing on dairy land had a setback of 1m (+/- 1m). Some 36,000km has been installed. While a wider setback is desirable, it was considered that the immediate risk of stock entering waterbodies was been managed by these fences and that requiring that they be moved in the short term would be unreasonable and divert resources from the new task of fencing smaller (<1m wide) streams. The extended 15 year transition phase will recognise the "early adopters".

Questions

- In addition to the 18SU/ha trigger threshold that applies outside of the Lowland, should the regulation include a per paddock stocking rate threshold to ensure that inten ive operations on large farms cannot avoid stock exclusion by averaging out stocking rates across the whole property? The policy intent is that any cattle farming that is intensive should be required to stock exclude where that intensive grazing occurs.
- Is there a means of clearly differentiating between drains that need to be captured and those that do not (or will not be practicable to capture). The intent is that larger drains that contribute flow most of the time into nature water bodies should be captured but swales and other shallow features that merely channel water during heavy rainfall should not be captured.

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Essential Freshwater NPS-FM Proposed Changes

Primary Sector Workshop 29 May 2019

No further loss of wetlands

We are proposing to restrict activities that contribute to the loss and degradation of wetlands. This will largely be achieved through national environmental standard provisions that apply prohibited or non-complying activity status to drainage, alterations of water levels through damming/diversions/takes, reclamation or disturbance of the bed, and clearance of indigenous vegetation.

Recognising that this is a very restrictive 'no loss' approach that may conflict with other Government priorities, a 'net gain' offsetting approach will be available for nationally significant infrastructure (e.g. roading) and operation requirements of existing hydroelectric generation schemes.

The national environmental standard will be further supported by NPSFM direction to regional councils to set objectives for (and work towards) the protection of wetlands from loss and degradation; avoidance of loss and degradation to their extent, function, values, or quality; identification and delineation; continuation of the intended purpose of constructed wetlands; monitoring; and promotion of enhancement and restoration.

All proposals are based on a common definition of wetlands, which is: permanently or intermittently wet areas, shallow water, and land/water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions but not including wet pasture, or where water temporarily ponds after rain or pasture containing patches of rushes.

Avoiding loss of streams

We are proposing to restrict activities that contribute to the loss of streams – i.e. piping, in-filling, and permanent diversions. This will largely be achieved through national environmental standard provisions that on-complying activity or discretionary activity status.

Piping or reclaiming the bed of a lake or river, where the piping or reclamation is greater than 20m in length, or permanently diverting a river resulting in a net-loss of river length, will be a non-complying activity. Any other piping, reclamation or diversion of a river will be a discretionary activity.

The national environmental standard will be further supported by NPSFM direction to regional councils on the circumstances in which councils should:

- require off-setting of a particular adverse effect that cannot be avoided, remedied or mitigated, and require compensation where this is not possible; and
- give special consideration to resource consent applications for the non-complying activities described above.

This would be accompanied by requirements to collect and report on resource consents, the gains and losses of river habitat, and the causes of these gains and losses.

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New attributes and national bottom lines for sediment

We are proposing to define a new attribute and national bottom line for suspended sediment[, dissolved inorganic nitrogen and dissolved reactive phosphorus in rivers] in the NPSFM.

Attributes do have a direct impact on resource users, rather they direct regional planning to set objectives for a specific measure and then limit resource use to achieve that. However, these objectives will have to at least maintain water quality, *or improve it if it is below the national bottom line*.

We estimate that the majority of catchments in New Zealand have at least one river reach that is below the national bottom line for suspended sediment. This means a large number of catchments will require some degree of improvement, and we can expect new limits on resource use. Modelling suggests all major catchments (excluding some smaller low-lying catchments) can meet national bottom lines for suspended sediment through changes in on-farm practices, and land-use change (eg, whole farms converting to forestry) will not be required.

To further support management of sediment, we propose to amend the NPSFM to include a requirement to monitor deposited sediment, and respond if results show a declining trend or degraded state. This is a critical measure of habitat quality, and while we do not yet understand the management interventions needed to improve it, we will review its suitability as an attribute in five years once this knowledge has developed further. This requirement will not have an immediate impact on resource users, but monitoring may necessitate intervention at the local scale

Similarly, we propose to amend the NPSFM and require monitoring of other key measures where this isn't currently the case (ie, [dissolved oxygen], macroinvertebrates, fish presence and diversity, and plant life), and to respond if monitoring indicates declining trends or a degraded state. This will require council scientists to develop responses tailored to the specifics of their catchment.

A higher standard for swimming sites

E.coli in water is an indicator of faecal contamination and risk of infection or illness. High E.coli levels in rivers and lakes indicate that people may get sick after swimming.

Regional Councils have already set targets for swimmable rivers and lakes, but there is confusion about what 'swimmable' means and whether the current threshold is high enough.

The proposal is to set higher standards for places where people regularly swim, known as 'primary contact sites', when people are most likely to swim (1 November to 31 March). The bottom line for these places during the swimming season would be 550 E.coli per 100 ml. This corresponds to the current "A" band.

There are about 240 'primary contact sites' or swim spots currently identified by Regional Councils.

In practice, this is likely to see Regional Councils increasing their efforts to improve water quality for recreation in those places. This may be achieved by imposing stricter requirements on upstream discharges of wastewater, or on stock access close to popular and monitored swim spots.

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Providing for fish passage

We are proposing to restrict the construction of new in-stream structures to ensure they meet minimum standards based on the New Zealand Fish Passage Guidlines (the guidelines) for structures up to four metres high. This will largely be achieved through national environmental standard provisions that mean construction will require a resource consent and compliance with specific requirements.

The national environmental standard will be further supported by NPSFM direction to regional councils to set objectives for (and work towards) improved diversity and abundance of fish, and collect and maintain records of fish passage (i.e. barriers), and prioritise mitigation of existing barriers. These supporting measures will not have immediate impacts on resource users but may inform future planning actions – they are not discussed in further detail here.

Proposals restricting new structures will include:

When considering whether to grant a resource consent for new structures, regional councils will have to have regard to-

The extent to which it achieves no greater natural impediment to to fish movement in adjacent streams.

The extent to which it provides for the efficient and safe passage of all organisms and life stages with minimal delay, except where there is a need to limit the movement of undesirable species to meet objectives.

The extent to which it provides a diversity of physical and hydraulic conditions leading to a high diversity of passage opportunities for aquatic organisms.

Biological performance necessary to achieve objectives for the foreseeable life of the structure (durability), and any proposed monitoring and maintenance plan to the extent necessary to achieve this.

New culverts, weirs and fords less than four metres high will have to meet minimum design standards based on Appendix G of the guidelines, or otherwise demonstrate that their effects will be no more than minor.

New passive tide and flood gates are strongly discouraged, in favour of structures that allow for fish passage.

Water metering regulations to require telemetered data

We are proposing to make real-time electronic reporting of water use to councils mandatory under the Resource Management (Measurement and Reporting of Water Takes) Regulation 2010. The regulations currently require water permit holders for takes over 5 litres per second to have an appropriate measuring device; have this independently verified to meet accuracy requirements; and provide a continuous record of water use data to their regional councils (at least annually, in hard copy or electronic format).

Changes will mean water users subject to the regulation will have to install a telemetry unit on their water meters, which will electronically record water use and transmit this data directly to councils in real-time. Data transmission will generally occur over the cellular network. Where cellular coverage is insufficient, other transmission methods will be available (e.g. data repeaters to a broadband connection, or radio data transmission).

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At this stage we estimate ~14,000 water permits will be impacted by these changes, costing $600-$1800 per telemetry unit. We estimate ongoing data transmission costs are $20-$30 per month over the cellular network.

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From:	Gavin Forrest
To:	"john.blincoe@parliament.govt.nz"
Cc:	Martin Workman; Paul Le Miere; Terry Copeland
Subject:	Unauthorised sharing of confidential information
Date:	Tuesday, 11 June 2019 5:24:03 PM
Attachments:	image001.jpg

Hi John

Further to our conversation today about the unauthorised sharing of documents, containing key parts of the draft Essential Freshwater package, provided to Federated Farmers and other non-government agencies by Martin Workman (MfE) at 6.24pm on Tuesday 28 May 2019.

I understand that information reached Minister Parker's Office between this time and the evening of Wednesday 29 May 2019 that led to the conclusion that one of the parties that received the material had distributed it further without MfE's authorisation.

I am pleased to be informed by you that no information has been provided or obtained that leads to any definitive conclusion as to who forwarded the documents and that no claim has been made by anyone in Minister Parker's Office that Federated Farmers is the source – just that the conclusion is that it must have been done by at least one of those that received the documents.

All Federated Farmers staff who cited the documents have been spoken to and have given their absolute assurance that they did not share the information outside a core group of Federated Farmers policy team. The documents were, following MfE's approval, forwarded to a Deer Industry NZ policy person who attended the meeting held the next day. The documents were not provided to our elected water spokesman and definitely not to any farmers. Given the lack of detail provided with respect to the nature, location and timing of the breach of confidence Federated Farmers can do more than repeat our assurance that we were in no way responsible for the breach.

Federated Farmers appreciates that this breach of confidentially is, rightly, of significant concern to Minister Parker's Office and to MfE officials. As discussed it is important that we move beyond this situation continuing to seek practical solutions to the achieving the Government's Essential Freshwater goals.

On a different note, a number of our Federated Farmers National Board members and senior staff will be at the Mystery Creek National Fieldays over the next three days and would welcome the opportunity to meet with Minister Parker when he is there.

Regards

Gavin

GAVIN FORREST
GENERAL MANAGER POLICY AND ADVOCACY

Federated Farmers of New Zealand
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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Friday, 3 May 2019 2:41 PM
To: Charlotte Rutherford
Subject: Re: Questions for Fonterra - please could you check, amend and forward to Andrew Kempson at Fonterra as soon as possible. Thank you

Just getting on plane. Will call about 4pm.

Sent from my iPhone

On 3/05/2019, at 2:32 PM, Charlotte Rutherford <Charlotte.Rutherford@fonterra.com> wrote:

> Hi Martin
> We have had a look and think we can help in many places and definitely with NCap which seems most pressing.
> I need to get a better understanding of data security and process for providing it.
> Can you give me a ring when able to discuss.
> Cheers
> Charlotte
>
> ---
>
> **From:** Martin Workman [mailto:martin.workman@mfe.govt.nz]
> **Sent:** Wednesday, 1 May 2019 4:11 p.m.
> **To:** Charlotte Rutherford <Charlotte.Rutherford@fonterra.com>
> **Subject:** Fwd: Questions for Fonterra - please could you check, amend and forward to Andrew Kempson at Fonterra as soon as possible. Thank you
>
> I thought I'd send this straight to you. I will be out of contact next two days.
>
> Sent from my iPhone
>
> Begin forwarded message:
>
> > **From:** Irene Parminter <Irene.Parminter@mfe.govt.nz>
> > **Date:** 1 May 2019 at 4:02:44 PM NZST
> > **To:** Martin Workman <martin.workman@mfe.govt.nz>
> > **Cc:** Team – Freshwater and Agriculture <TeamFreshwaterandAgriculture@mfe.govt.nz>
> > **Subject: Questions for Fonterra - please could you check, amend and forward to Andrew Kempson at Fonterra as soon as possible. Thank you**
> >
> > Hi Martin. We have pulled together a set of questions for Fonterra following your conversation with Charlotte Rutherford. The attached is a long list but the intro makes it clear that the N cap aspects are the most impt and urgent.
> >
> > Timelines are tight. Unfortunately to get this stuff into the RIS we need it by the 8th May, (that's when 1st draft is due with treasury) and then a revised version by 15 May. You may like to acknowledge this in your cover email i.e. we are asking for help at very short notice.
> >
> > As you made the first contact we thought it best for you to send to Fonterra – Andrew Kempson.

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Let me know if you would like me to do anything further.

Thank you

Irene

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Questions for Fonterra to assist with Essential Freshwater policy development

Fonterra has offered to provide data and/or analysis to assist with the development of Essential Freshwater policies that would affect the agriculture sector.

The Table below sets out some of the potential policy areas, and the kinds of data/analysis that would be helpful, if Fonterra is able to provide it. In terms of priority and timing:

- The N-cap questions are the most urgent and important.
- If any data is available before 8 May, it would be very helpful for the draft regulatory impact analysis (RIA) due on that date, particularly for the N-cap aspects.
- A second deadline is the 15th May for a revised RIA, so any further information provided before then would also be very useful.

Policy area	Potential uses of Fonterra data and/or analysis
N-cap	• We understand from Charlotte Rutherford that Fonterra has an AgResearch study on the impact of the 75th percentile proposal in the Waikato. This would be very helpful if Fonterra is willing to share it. Further data and analysis would be very helpful as follows: • Data on the distribution of leaching rates per hectare from Fonterra farms in a small number of sub-catchments that have high instream N levels (with relatively consistent soil/climate within each sub-catchment, but variety between the sub-catchments) • If an N cap were set at the 75th percentile in these catchments, how many farms/hectares would be affected? • What would be the distribution of the impacts? e.g. 20% of those affected would have to reduce by 20 or more kg/ha to meet the cap, 50% by 10-20 kg/ha and 30% by 5 or less kg/ha • What would be the cost implications of these kind of reductions? • What impacts if the 85th percentile was chosen?
Farm Environment Plans	• Is Fonterra collecting and analysing data separately for farms which have Tiaki Plans? • If so, is there any data/analysis we could use on the *expected* reductions in contaminant discharges as a result of implementing Tiaki Plans, and the time over which they will occur? • Is there any data from the earliest Tiaki Plans to show *actual* changes in discharges over time compared with non-Tiaki farms? • Is there other data on Tiaki farms e.g. the actions included in the Plans, and progress with their implementation?
Stock holding areas	• Is there any data on the number of dairy farms which have a stock holding area (wintering pad, feedpad, standoff pad etc.) as part of their farm system? Is there data on trends over time for these? • Can any information be extracted from the database to indicate changes in farm-scale nitrate leaching from the use of stock holding areas e.g. where farmers use standoff pads to reduce N leaching?
Intensive winter grazing of forage crops	Is data available on: • The number of dairy farms which have winter forage crops as part of their farm system? Does the data differentiate between farms that have the crops on their own milking platform and those that send cows off property and graze forage crops (run-off, lease block that is not part of the milking platform)?

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	• Trends in the areas of winter forage crop? • The percentage of land under winter forage crop for each dairy farm (including any they have on a separate property to support the milking platform)? • The relationship between increasing areas of winter forage crops and Overseer losses at a farm scale?
Intensification	• Trend information on irrigation areas • The impact of increased irrigation areas on dairy farms on nitrogen leaching per ha (higher, lower, unchanged)
Stock exclusion	• Latest data on km of stock exclusion on streams below 1 metre (we understand that this data is collected but not reported). Also the data expressed as a % of all streams under 1 metre on Fonterra dairy farms if this is available.

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Monday, 20 May 2019 12:40 PM
To: Charlotte Rutherford
Cc: Irene Parminter
Subject: RE: good to catch up last week

I've asked Irene to give you a call on the latest detail as she is most up to date on it.

From: Charlotte Rutherford <Charlotte.Rutherford@fonterra.com>
Sent: Monday, 20 May 2019 10:27 AM
To: Martin Workman <martin.workman@mfe.govt.nz>
Subject: good to catch up last week

Hi Martin
As per our conversation last week, are you able to flick me a copy of the latest thinking?
Thanks
Charlotte

Kind regards
Charlotte Rutherford
Director On-Farm Excellence

Fonterra Farm Source
Mob: +64 21 471 045
19 Home Straight, Te Rapa, Hamilton, 3200
nzfarmsource.co.nz | fonterra.com

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Andre Silveira

From: David Burger <David.Burger@dairynz.co.nz>
Sent: Friday, 17 May 2019 12:55 PM
To: Antony Heywood; Ewan Kelsall; 'Dave Harrison'; 'Matt Ward'; Michelle Sands
Cc: Gavin Forrest; Paul Le Miere; Martin Workman
Subject: RE: Essential Freshwater working group

Thanks Ewan – agree this would be good, I will join from our end.
Regards,
David

From: Antony Heywood <Antony.Heywood@hortnz.co.nz>
Sent: Friday, 17 May 2019 12:43 PM
To: Ewan Kelsall <EKelsall@fedfarm.org.nz>; 'Dave Harrison' <Dave.Harrison@beeflambnz.com>; 'Matt Ward' <matt.ward@beeflambnz.com>; David Burger <David.Burger@dairynz.co.nz>; Michelle Sands <Michelle.Sands@hortnz.co.nz>
Cc: Gavin Forrest <GForrest@fedfarm.org.nz>; Paul Le Miere <PLeMiere@fedfarm.org.nz>; 'Martin Workman' <martin.workman@mfe.govt.nz>
Subject: RE: Essential Freshwater working group

Hi Ewan,

Thanks for the invite. Michelle will take the lead for us.

Ngā mihi

Antony Heywood
Senior Manager | Vegetables New Zealand
P: +64 4 494 9987 | **C:** +64 21 998 038
A: Level 4, Co-Operative Bank House, 20 Ballance St, Wellington 6011
Website: www.vegetablesnz.co.nz

From: Ewan Kelsall <EKelsall@fedfarm.org.nz>
Sent: Friday, 17 May 2019 12:37 PM
To: 'Dave Harrison' <Dave.Harrison@beeflambnz.com>; 'Matt Ward' <matt.ward@beeflambnz.com>; 'david.burger@dairynz.co.nz' <david.burger@dairynz.co.nz>; Antony Heywood <Antony.Heywood@hortnz.co.nz>; Michelle Sands <Michelle.Sands@hortnz.co.nz>

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Cc: Gavin Forrest <GForrest@fedfarm.org.nz>; Paul Le Miere <PLeMiere@fedfarm.org.nz>; 'Martin Workman' <martin.workman@mfe.govt.nz>
Subject: Essential Freshwater working group

Afternoon all,

Martin Workman, MFE and I just had a quick catch up and we think there would be benefit in getting the Ag groups together to discuss/workshop some of the upcoming aspects of the Essential Freshwater Programme.

The public consultation will be released in July but we think it would be helpful to work through and test some of the thinking prior to this.

Can you please let me know if you are interested and who would be best to attend from your organisation.

Given the timeframes of the Essential Freshwater programme I think we need to get together before the end of the month if possible.

Cheers

EWAN KELSALL
Senior Policy Advisor, National Water and Environment

Federated Farmers of New Zealand
Level 6, Wellington Chambers
154 Featherston Street,
PO Box 715, Wellington 6140

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www.fedfarm.org.nz

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Tuesday, 9 April 2019 8:04 PM
To: Charlotte Rutherford
Subject: Re: Data questions

Things still changing but heading towards percentile. Need to work out how to make it work.

Sent from my iPhone

On 9/04/2019, at 7:06 PM, Charlotte Rutherford <Charlotte.Rutherford@fonterra.com> wrote:

> All of those are possible, however I misinterpreted what you said on the phone - I thought you would do a percentile like Waikato! A cap is ludicrous. You would capture almost no one in some over allocated catchments with a 70 and almost all dairy farms in leaky irrigated soils. All regardless of the state of the receiving environment???
> Why would you not do a percentile that will be reflective of catchment. How on earth would you chose a reduction to impose in a consent with a blunt cap?
>
> I suggest a 75 percentile on a FMU basis. Or another percentile dependant on the reduction required. And we can calculate that for all dairy dominant catchments.
>
> Get Outlook for iOS

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Tuesday, April 9, 2019 5:17 PM
To: Charlotte Rutherford
Subject: Data questions

Hi

To give you an idea of the questions I'm getting from my team. It would be good to get an idea of what would be possible and what would not at our breakfast on Friday.

- Can Fonterra give us information on distribution of N kg/ha discharges from Overseer information so we can see how many farms would be captured by this proposed rule for different n cap scenarios e.g. 50, 70, 90 kg/ha.
- Also would Fonterra consider entering into a data sharing arrangement with regional councils (or central government) to provide Overseer results (possibly just those over the 70kg/ha cap) so that councils could work out who the NES n cap applied to and approach them for a consent or FEP setting out management required to reduce to cap. Otherwise is time consuming and difficult for Councils to work out who the n cap threshold (or top percentile) should apply to.

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries
Mobile: 022 517 3268 Email: martin.workman@mfe.govt.nz Website: www.mfe.govt.nz
23 Kate Sheppard Place, PO Box 10362, Wellington 6143

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Wednesday, 20 March 2019 1:47 PM
To: Tim Davie
Subject: Re: Contact recreation study

We have put a budget bid in for it and are waiting for a decision to be made.

Sent from my iPhone

On 19/03/2019, at 3:32 PM, Tim Davie <Tim.Davie@ecan.govt.nz> wrote:

> Kia ora Martin,
> I hope you're well. Are you able to say whether the contact recreation science study that was proposed last year is still in the proposed budget? I was asked yesterday about birds v bovine and it made me wonder whether the study is still a possibility or not. I should note I'm not trying to stir things up, just gently inquiring.
> Ngā mihi nui,
> Tim

Tim Davie
Chief Scientist
Environment Canterbury

PO Box 345, Christchurch 8140
+64 3 367 7121
Customer Services: 0800 324 636
+64 27 215 0789
24 Hours: 0800 76 55 88
Tim.Davie@ecan.govt.nz

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Andre Silveira

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Wednesday, 29 May 2019 6:59 PM
To: Dave.Harrison@beeflambnz.com; 'Matt Ward'; david.burger@dairynz.co.nz; antony.heywood@hortnz.co.nz; Michelle Sands; Paul Le Miere; GForrest@fedfarm.org.nz; Ewan Kelsall; Corina Jordan
Cc: Cheryl Barnes; Vicky Robertson
Subject: RE: In confidence: Freshwater Workshop - Papers

Hi

I have been informed that the confidential documents provided to you have been shared. I am extremely disappointed in this. I made clear in the below email that the documents were not to be shared. As a consequence I will be cancelling our meeting next week. We have informed the Ministers about this.

I want to reiterate that the documents provided and our discussions are to be treated in confidence and are part of testing our thinking. In order to do that relies on people respecting that confidentiality.

We will continue to look to the Essential Freshwater advisory groups for advice to Ministers on this package.

Regards

Martin

From: Martin Workman
Sent: Tuesday, 28 May 2019 6:24 PM
To: Dave.Harrison@beeflambnz.com; 'Matt Ward' <matt.ward@beeflambnz.com>; david.burger@dairynz.co.nz; antony.heywood@hortnz.co.nz; Michelle Sands <Michelle.Sands@hortnz.co.nz>; Paul Le Miere <PLeMiere@fedfarm.org.nz>; GForrest@fedfarm.org.nz; Ewan Kelsall <EKelsall@fedfarm.org.nz>; Annabelle Ellis <Annabelle.Ellis@mfe.govt.nz>; Nicola Scott <Nicola.Scott@mfe.govt.nz>; Roger Lincoln <roger.lincoln@mfe.govt.nz>; Charlotte Denny (MPI) <charlotte.denny@mpi.govt.nz>; Irene Parminter <Irene.Parminter@mfe.govt.nz>; Corina Jordan <Corina.Jordan@beeflambnz.com>; Gerard Willis <Gerard.Willis@mfe.govt.nz>; Jennie McMurran <Jennie.McMurran2@mfe.govt.nz>; Mary McCulloch <Mary.McCulloch@mfe.govt.nz>; Mary-Anne Baker <Mary-Anne.Baker@mfe.govt.nz>; Nick Martelli <Nick.Martelli@mfe.govt.nz>
Subject: In confidence: Freshwater Workshop - Papers

Hi

Attached are papers setting out key parts of the draft Essential Freshwater package. I'm looking forward to getting your feedback at the workshop tomorrow. The proposals are still being worked on.

The material is to be treated in confidence and is not to be shared.

See you tomorrow.

Martin Workman – Director Water
Ministry for the Environment – Manatū Mō Te Taiao and Ministry for Primary Industries

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Mobile: 022 517 3268 Email: martin.workman@mfe.govt.nz Website: www.mfe.govt.nz
23 Kate Sheppard Place, PO Box 10362, Wellington 6143

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From: Ewan Kelsall
To: Martin Workman
Subject: RE: Federated Farmers Board Meeting
Date: Thursday, 6 June 2019 5:00:27 PM

Hi Martin,

Thanks for letting us know, that is understandable given the circumstances.

I apologise for the inconvenience this has caused you.

Kind regards

Ewan

From: Martin Workman <martin.workman@mfe.govt.nz>
Sent: Thursday, 6 June 2019 4:29 p.m.
To: Ewan Kelsall <EKelsall@fedfarm.org.nz>
Cc: Jacqui Webber <JWebber@fedfarm.org.nz>; Terry Copeland <TCopeland@fedfarm.org.nz>; Cheryl Barnes <Cheryl.Barnes@mfe.govt.nz>
Subject: Re: Federated Farmers Board Meeting

Hi

MfE will no longer be able to attend the Board meeting. The recent sharing of confidential information provided to primary sector groups means we are not able to share further information on Essential Freshwater.

Regards
Martin

Sent from my iPhone

On 22/05/2019, at 3:00 PM, Ewan Kelsall <EKelsall@fedfarm.org.nz> wrote:

> Hi Martin
>
> Good idea. I think it would be really helpful to have some insight into that side of things.
>
> Cheers
>
> Ewan
>
> **From:** Martin Workman <martin.workman@mfe.govt.nz>
> **Sent:** Wednesday, 22 May 2019 1:56 p.m.
> **To:** Ewan Kelsall <EKelsall@fedfarm.org.nz>
> **Cc:** Jacqui Webber <JWebber@fedfarm.org.nz>; Terry Copeland <TCopeland@fedfarm.org.nz>
> **Subject:** RE: Federated Farmers Board Meeting

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Hi Ewan

Would the Board be OK with me bringing along John Penno the chair of the Freshwater Leaders advisory group that the Government set up to help prepare the Essential Freshwater package?

Cheers

Martin

From: Ewan Kelsall <EKelsall@fedfarm.org.nz>
Sent: Friday, 17 May 2019 3:39 PM
To: Martin Workman <martin.workman@mfe.govt.nz>
Cc: Jacqui Webber <JWebber@fedfarm.org.nz>; Terry Copeland <TCopeland@fedfarm.org.nz>
Subject: Federated Farmers Board Meeting

Hi Martin,

As discussed we would like to invite you to our next National Board meeting to discuss progress on the Essential Freshwater work programme.

We have an hour available in the afternoon of Tuesday 18 June.

Can you please let Jacqui (CC'd in) know if this works for you or your team.

Thanks

EWAN KELSALL
Senior Policy Advisor, National Water and Environment

Federated Farmers of New Zealand
Level 6, Wellington Chambers
154 Featherston Street,
PO Box 715, Wellington 6140

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www.fedfarm.org.nz

<image001.jpg>

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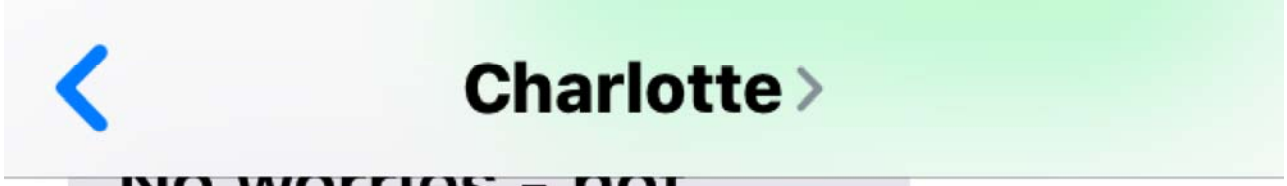

No worries - not urgent but wanting to discuss specifically what would be useful from us for next steps. We have a lot of ideas.

Wed, 1 May, 8:46 AM

Hi Martin -
Any joy on that date for a meeting? I think we had proposed the 16th. Cheers
Charlotte

Tue, 7 May, 8:23 AM

Morning - did you see the info I sent

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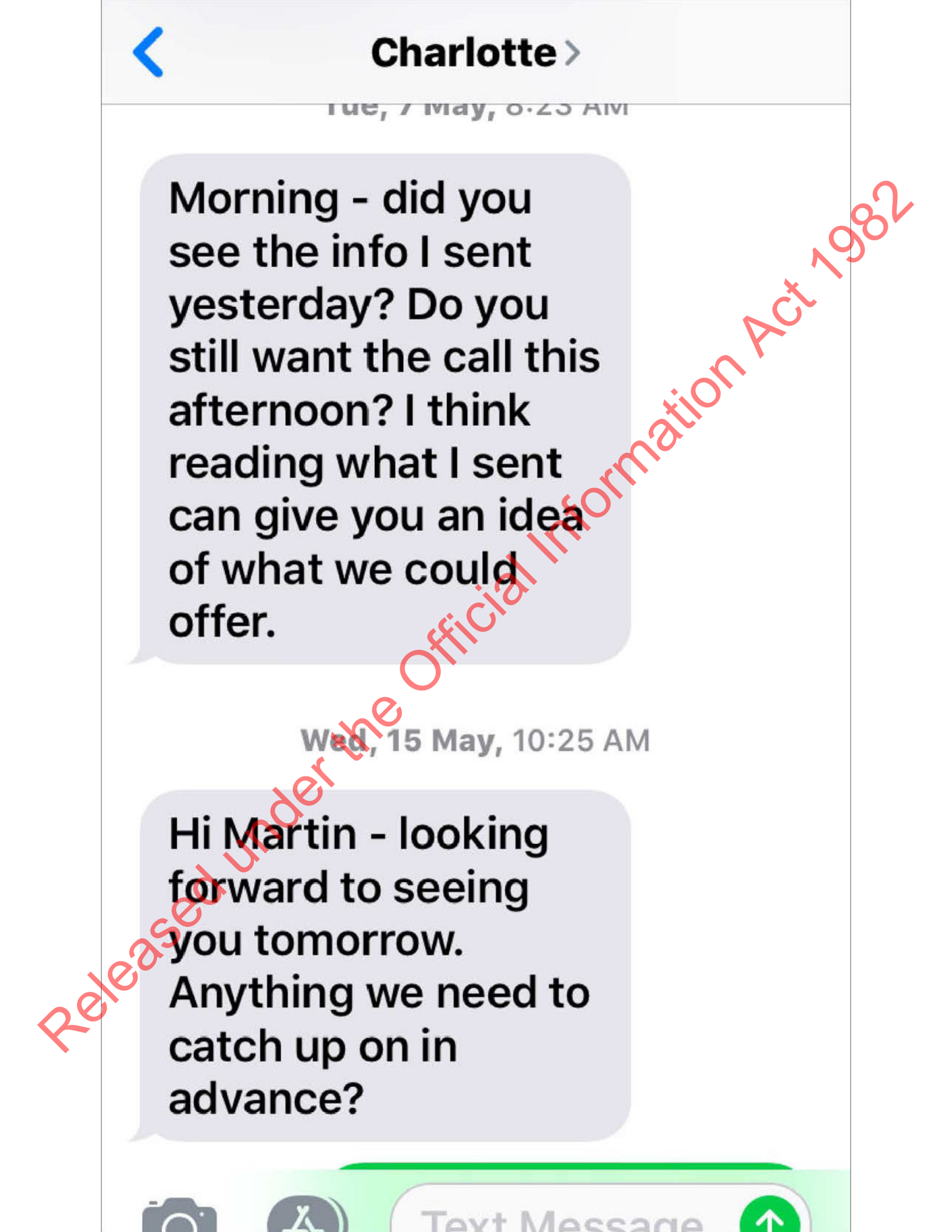

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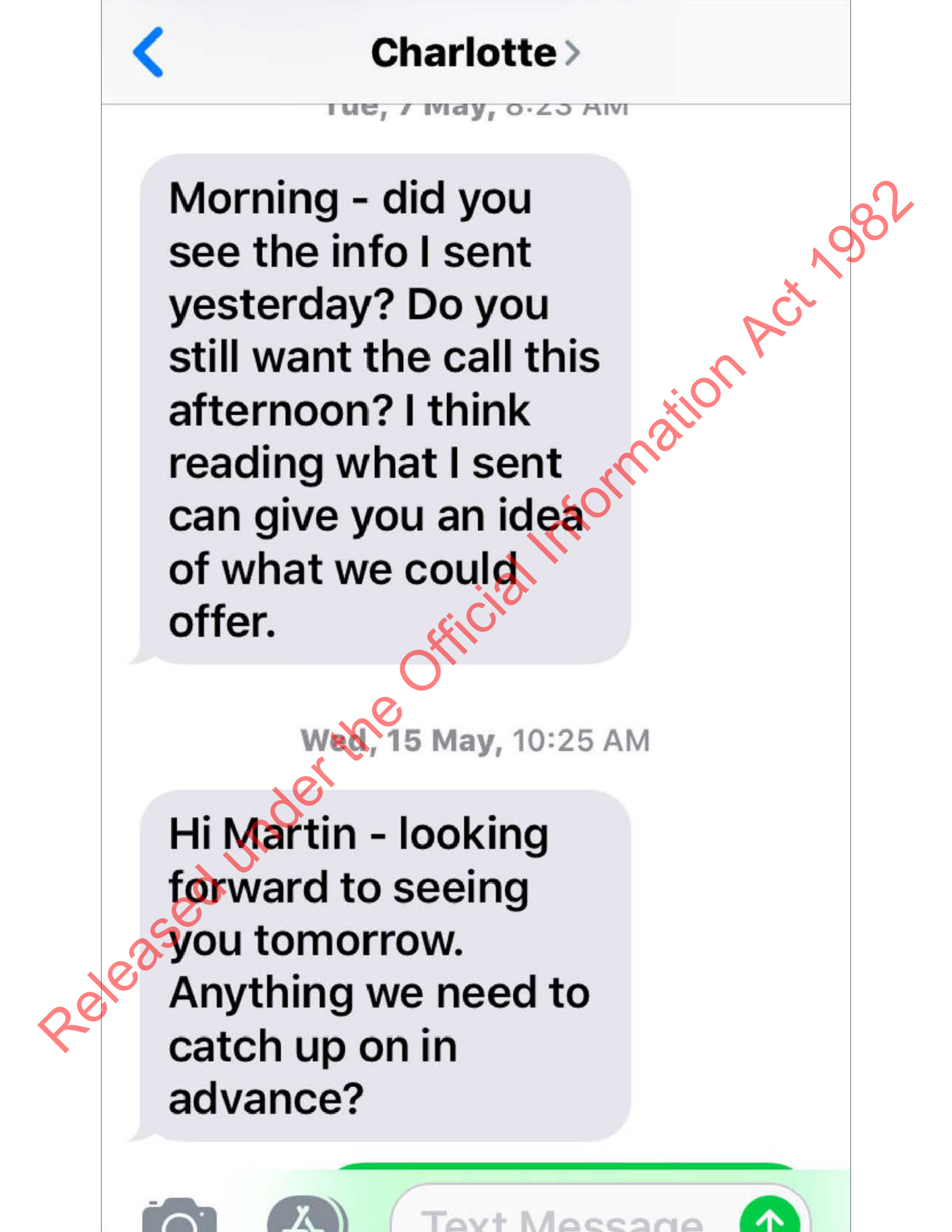

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Charlotte

Thu, 16 May, 8:48 AM

Just landed so prob won't get there before 9:30 - are you going to DELG afterwards ?

Yep

Can we talk on the way down re proposals

Mon, 10 Jun, 4:01 PM

Hi Martin. Hope all is well with you. Talked to David Burger last week and he said

Text Message

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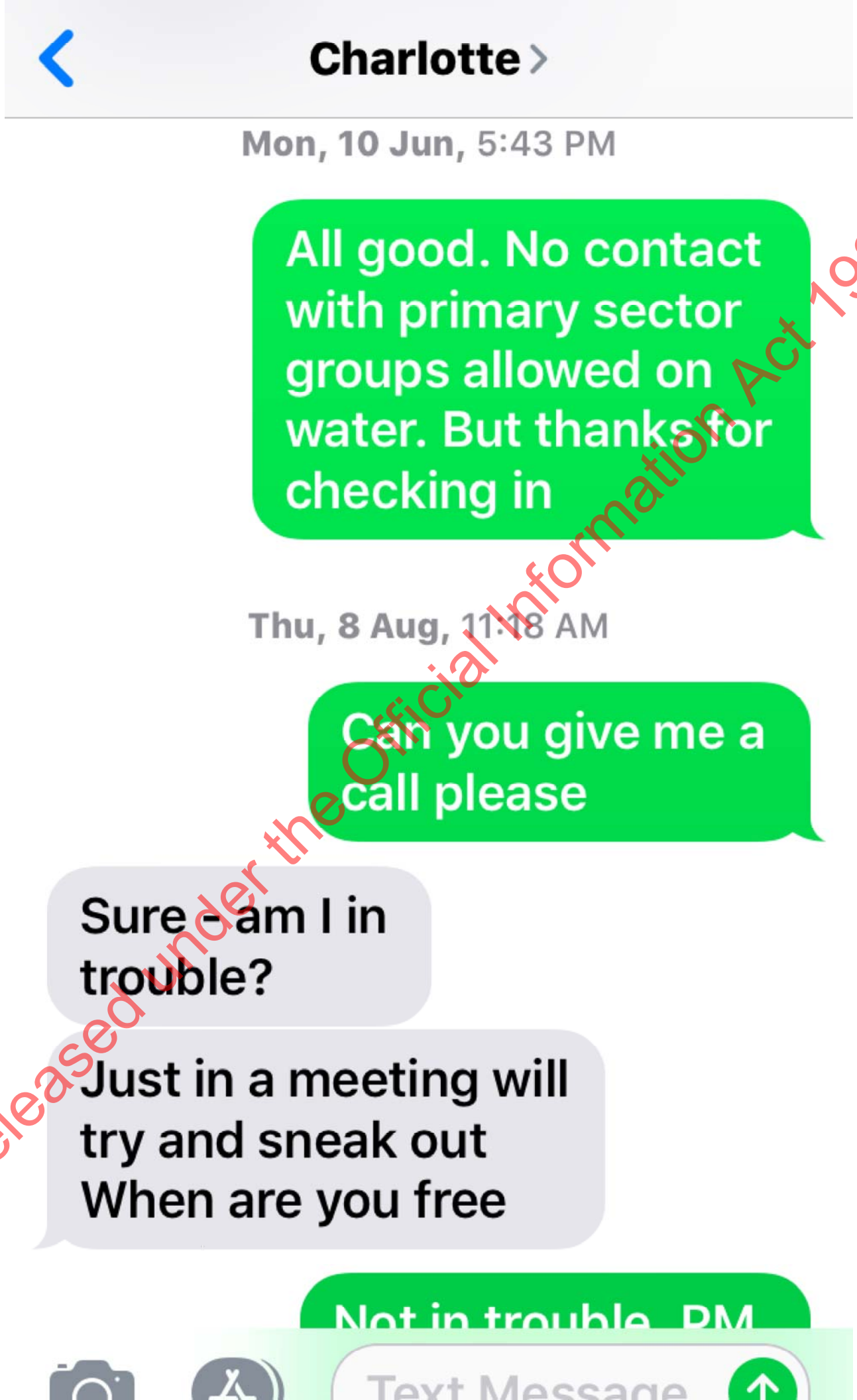

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New iMessage Cancel

To: David Burger

off but will catch up soon. David

Thu, 30 May, 8:28 AM

Very disappointed to hear the documents were shared. Where have they ended up? I will raise this with Jim and Tim for follow up in the Farmer Leaders Group as well. I thought we were making good progress through the team Ag group. I

iMessage

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New iMessage Cancel

To: David Burger

the team Ag group. I hope we can still provide advice as DairyNZ. Had good meeting with Irene yesterday.

Fri, 31 May, 4:04 PM

Sorry missed your call, I'm around now

Thu, 6 Jun, 4:41 PM

Hi Martin, are you coming up to Fieldays next week?

iMessage

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New iMessage Cancel

To: David Burger

Hi Martin, are you coming up to Fieldays next week? Do you have time to catch up? David

There on 12-13th but not engaging with primary sector groups on Essential Freshwater

Can give you an update on what we will tell minister regarding overseer if useful. Noted re Essential

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New iMessage Cancel

To: David Burger

useful. Noted re Essential Freshwater.

Ok

Sat, 8 Jun, 12:04 PM

Not going to field days now. No meetings to be had with primary sector

Mon, 29 Jul, 5:26 PM

Can you give me a call please

iMessage

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New iMessage Cancel

To: David Burger

Mon, 29 Jul, 6:29 PM

Raewyn van Gool from Waituna would also be great

Tue, 30 Jul, 9:40 AM

Tracey Brown TB >

Wed, 31 Jul, 1:40 PM

Hi Martin, is the event on 11 August in Kaipara to launch the mfe priority catchments

iMessage

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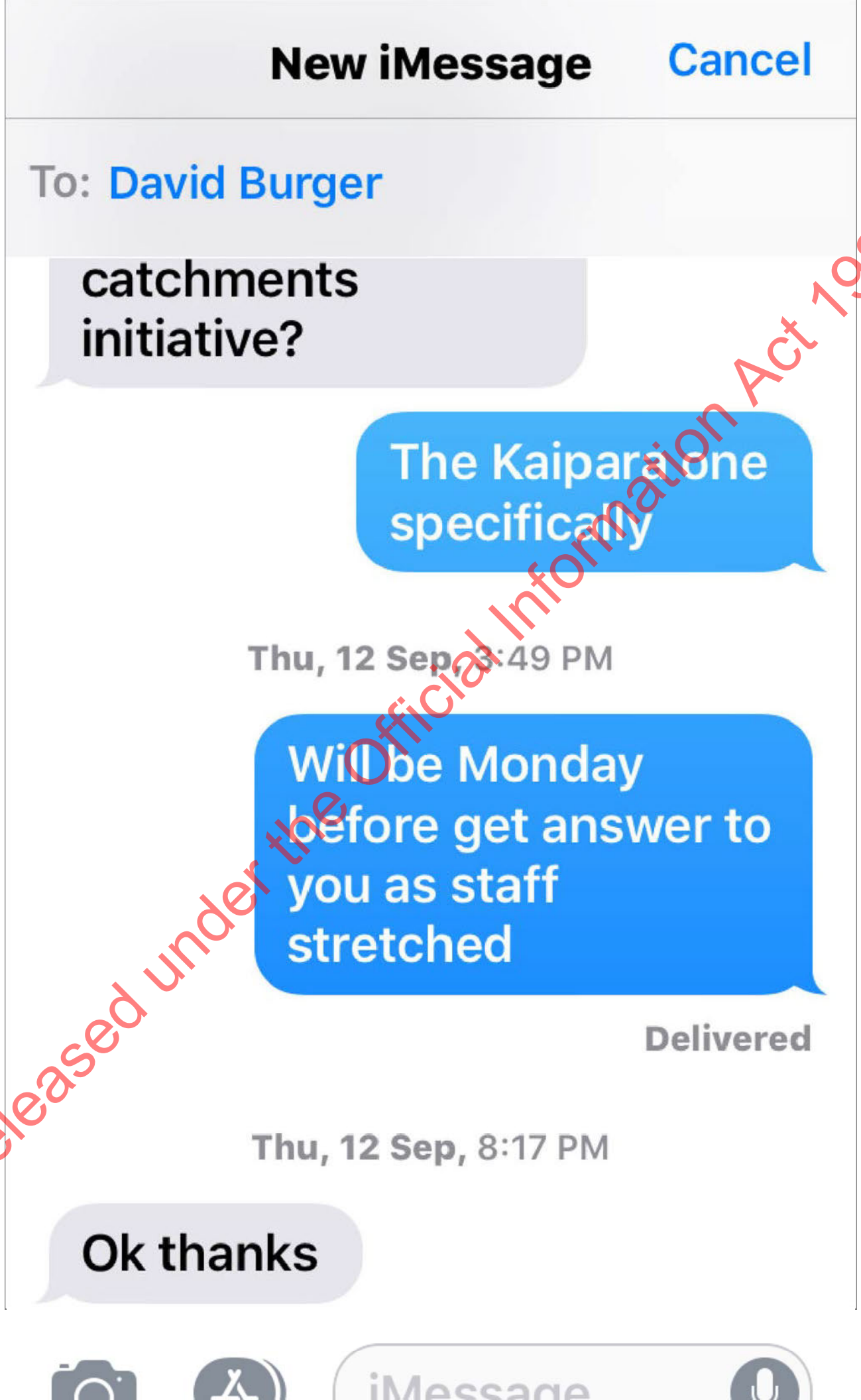

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Mon, 10 Jun, 4:01 PM

Hi Martin. Hope all is well with you. Talked to David Burger last week and he said there had been an unfortunate situation with primary sector. He was worried about you and asked if I had talked to you. Hope all is ok. Sing out if I can help.
Cheers
Charlotte

Mon, 10 Jun, 5:43 PM

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Kate K. / Doug / Hana / Cheryl 17/9/19

FEP

- Lobby MPI use Fonterra system to be able to be used nationally.

- Consistent application of 21 GMP principles

[Stock exclusion - Sm not supported by science. - Farmers kicked thinking do right things.]

Quality of FEPs impt. 2000 farmers already in FEP.

Fonterra delivering 1,000 per year

Have one version of truth [Bill B. wish had one template] (Farm model)
have tailored for sheep & beef
requires 1:1 delivery
- Have one for dairy one for B&L?

Std data fields required. minimum & how collected.
(Allow for add ons that Co. want to set the parameters. i.e. Spatial: What needs to be done where.

2. Assess against GFP principles (continued)
- can add on climate & other ones as go.

Fonterra provide database system to central govt / regions

Farmers get recognition, badge/$1000 but not much financial benefit

MPI/MfE & Fonterra team on data stds.

Consultant to develop for all farms.

Dairy want gains from ↓ 75 percent to river not to further dept.
(ok for same to Māori land)
- Map all farms in NZ - $2000
Got to manage intensity on farm by use of N scorecard for all landowners as part of their FEP. require fast.

require scorecard to be kept from 2019/2020 31 March Rolling 5 year average.

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16/5/19 Charlotte R. Matt (GPS it) Greg St
Kay B, Irene. FEP Matt.
bit less now 36 SMAs 2-5 per week
- All 10,000 farms mapped. - 2000 plans
- Data capture tod 5-6 hr visits big
2025 target
- changed conversation tell us "about your business" go for walk about farm
- 'co-operative difference' plan launched this week leading to Fonterra integrated farm planning.
- Learnt ~~from Fonterra~~ did it incrementally alot want to share competitive advantage against other processors
- Good data collection tod.
- Can focus on audit not content of FEP as FEP all over the place. Data std part of answer but need further controls ~~for~~ to get good data.
- Don't shut door at WRC.

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Need data for land use suitability, rural zoning of what land use where in a catchment any way

- Happy with certification schemes
- Fonterra audits all FEP.
- Will check farmers with non-Fonterra plans to make sure up to scratch
- Looking at climate change & biod.
- Do FEP once & properly so effective.
- NCap must have teeth. Dairy threshold applied to drystock not sector specific thresholds not fair for drystock.
- Industry feared worse. No more dairy. Dairy have FEP by 2025

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Primary Sector Workshop 29/5/19

Intensification - receiving ~~enviro~~ env't where is env't effect caused by activity of to ↑ housing.

Gain

Not targeted enough. ~~Multi cont~~

Vegies appose per kg per ha. Over 5 yrs impact on amount of vegies

Multi contaminant approach

Hort NZ can define BMP - load

prefer that option. - take account

- Need defn & thresholds to be set. receiving env't

Dave B - alternative proposal → Reg # of hectares

Reg. Councils over 12 months identify ARC where this rule supplied. for ↓ contaminants

Nationally consistent guidelines ID what ones are impt.

2025 tight timeframe.

- Can't assess/prove if increase ~~dairy~~ will reduce or maintain contaminants.

- Concern how long contrd would be in place ~~act~~ just 2025.

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Carina: forage crop rule address some of intensification risk.

Objector Michelle: increase in irrigated orchards not pose threat. Put in threshold not unnecessary constraint.

- Small increase but big env. benefit

Carina, pine
- forestry to pasture can be benefit to sediment.

N Surplus

How calculate it - Fonterra scorecard one potential way easier to link to practice

Dave B - support N surplus

Idea:
Apply to all farms - focus on practice.

efficiency
- Reduce N surplus but increase N leach as breakdown high leachers

- give them same room.

- provide flexibility can't for low emitters concerned about doing it sector by sector

Carina - manage risky activities eg winter grazing and dairy support

Paul - concern that relevant councils already have notified = operative rules in place for intensify & N surplus.
Charlotte do them FEP.

Carina
Not get quality FEP by 2025 Capability & capacity constraints. Prob # consents being required.

FEPs
Climate plans different to what water requires.

Gain - start ARC & input contaminants & address water & climate as together.
Too ambitious save wand in 3 yrs
Can do it all over time.

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Seatas

Support FEP

- Is industry doing enough to meet certify & audit
- Councils want industry to do it Know risks, farms tidy, at GMP

Corina - losing soil conservation & farm system expertise.
Get to LEP III
Do quality plans rather than lots that do little gain.
Farm plans will cover biosecurity, animal welfare, env't... module approach works

Michelle - looking at risk assessment tool score card for Waikato Plan Change - not as a pass/fail but as a process.

Ewan - LEP long way to go.

David B - need a baseline year 2017 for

Corina - support feedlots
Happy 15%
Hawera ha at 9% threshold.

- Concern if increase area needs consent. eg want people on flat allow them to. ↑ forage is on annual crop

- pasture renewal use crop to counter parasites.

Ewan - where got silt traps and no loss of contaminants why need a consent? How provide.

Corina → put in technical std in PA.
→ grazed area not connected to a waterway - larger set back from waterways

How will slope be measured?

Paul - what is risk assessment of slope and discharge of contaminants

- Include vegie cultivation in controls

Charlotte - need to say what expect farmers to do

Use FEA

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Name regulation to enact → Land and emit plans

Sector
Don't want input control FEP instead of contents

Carina/Charlotte — keep non-reg.
Not enforce FEP thru RMA.
How then catch the rat bags?
Dave H. Look at food safety.
Don't want to lock in contents of FEP as Δ for weather etc.

Dave B
Stock holding areas concerns.
Feedlots.

Mary-Anne: lack data on impact of pugging.
Dave B - animal welfare reg. should Charlotte address it. Animal Welfare Code. RMA criminal conviction pugging more soil health proposals.

- Does it impact on water quality if big enough buffer in place. Dave B appose.

Carina - minimum perf stds in PA supported.

Paul
Feedlots - not prohibited if not meet stds, too binary. Need provide consent process. eg non-complying

Stockholding area - good practice now saying it has to be a consent. permitted activity pathway to set min. std. those doing right thing.
10 calves in a pen for 10 days should not be caught.

What trying to capture.
- feedpads / sacrific paddocks

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