NORTHLAND REGIONAL COUNCIL

Agenda

Meeting of the
ENVIRONMENTAL MANAGEMENT COMMITTEE
to be held in the Council Chambers, 36 Water Street, Whangarei
on Monday, 2 December 2013 commencing at 9:30am

MEMBERSHIP OF THE COMMITTEE
Cr J Carr, Chairman

Cr C Brown (Deputy Chairman)	Cr B Shepherd (ex officio)	Cr T Cutforth (WDC - TBC)
Cr P Dimery	Mr A Clarkson	Mr R Booth (KDC)
Cr D Bowman	Ms Sue Reed-Thomas	Cr A Court (FNDC)
Dr G Blunden	Mr G Gover	Mr K Volkerling

OPEN MEETING

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ISSUE: Further Appointments to the Environmental Management Committee

ID: A597391

To: Environmental Management Committee, 2 December 2013

From: Peternel McLean, Committee Secretary

Date: 20 November 2013

Summary The purpose of this report is to appoint further members to the committee, in accordance with its delegated authority.

Report Type:	☑	Normal operations	☐	Information	☑	Decision
Purpose:	☐	Infrastructure	☐	Public service	☑	Regulatory function
	☐	Legislative function	☐	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Report

At its meeting on 6 November 2013, Northland Regional Council considered the membership for its committees. In relation to the Environmental Management Committee, the following appointments were made:

Chairperson: Cr Joe Carr
Deputy Chairperson: Cr Craig Brown
Members: Crs Paul Dimery, Dennis Bowman
Chairman Bill Shepherd is ex-officio member on all council committees

In addition to the above, the council delegated authority to the committee to appoint additional members to the committee. The following are nominated for membership on the Environmental Management Committee

Far North District Council	Cr Ann Court
Whangarei District Council	Cr XXXX
Kaipara District Council	Commissioner Richard Booth
Department of Conservation	Ms Sue Reed-Thomas
Maori Interests	XXXX
Environmental Interest Groups	Dr Greg Blunden
Farming Community	Mr Alan Clarkson
Forest Industry	Mr Geoff Gover

In respect of representatives for Whangarei District Council and a Maori Interests representative, no confirmed nomination had been received at the time of compiling this report.

Compliance with decision making processes

This report and the recommended resolution comply with Clause 31(1) of the 7th Schedule of the Local Government Act 2002.

Recommendations

1. That the report Further Appointments to the Environmental Management Committee from Peternel McLean, Committee Secretary dated 20 November 2013 be received.

2. That the committee resolve to appoint the following additional members to the Environmental Management Committee:

Far North District Council	Cr Ann Court
Whangarei District Council	Cr XXXX
Kaipara District Council	Commissioner Richard Booth
Department of Conservation	Ms Sue Reed-Thomas
Maori Interests	XXXX
Environmental Interest Groups	Dr Greg Blunden
Farming Community	Mr Alan Clarkson
Forest Industry	Mr Geoff Gover

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ISSUE: Terms of Reference for Environmental Management Committee

ID: A597094

To: Environmental Management Committee, 2 December 2013

From: Peternel McLean, Committee Secretary

Date: 19 November 2013

Summary The purpose of this report is to consider the Terms of Reference for the committee, and make any changes as appropriate.

Report Type:	☑	Normal operations	☐	Information	☑	Decision
Purpose:	☐	Infrastructure	☐	Public service	☑	Regulatory function
	☐	Legislative function	☐	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Report

At its meeting on 6 November 2013, Northland Regional Council considered the Terms of Reference for its committees. In relation to the Environmental Management Committee, the council adopted the Terms of Reference, and further resolved that the committee review the Terms of Reference as a first order of business at its inaugural meeting and recommend any changes back to council.

The terms of reference are therefore attached for the committee's consideration.

Compliance with decision making processes

This report and the recommended resolution comply with Clause 31(1) of the 7th Schedule of the Local Government Act 2002.

Recommendation

1. That the report Terms of Reference for Environmental Management Committee from Peternel McLean, Committee Secretary dated 19 November 2013 be received.

2. That the committee recommends to council the following amendments to the Terms of Reference:

   [state here recommended amendments]

COMMITTEE TERMS OF REFERENCE

Environmental Management Committee

Membership
The Environmental Management Committee (the committee) shall be comprised of five (5) councillors plus eight (8) appointments as follows:

Chairperson
Cr Joe Carr

Deputy Chairperson
Cr Craig Brown

Members
Councillor Dimery
Councillor Bowman
NRC Chairman Bill Shepherd (in an ex-officio capacity)

Cr X nominated by and representing the Far North District Council
Cr X nominated by and representing the Whāngārei District Council
Commissioner X nominated by representing the Kaipara District Council
A representative of Māori interests nominated by iwi authorities and Te Roroa and Te Uri o Hau
X [Dr Greg Blunden] nominated by and representing environmental interest groups
X [Mr Alan Clarkson] nominated by and representing the farming community
X [Mr Chris Jenkins] nominated by and representing the Department of Conservation
X [Mr Geoff Gover] nominated by and representing the forest industry
(This list will be updated by the Committee Secretary)

Quorum
The quorum for meetings of the committee shall be seven members, being a majority of members (including vacancies).

Terms of Membership
Should any member appointed to represent an outside organisation or group be absent without prior leave from two consecutive meetings of the committee, that person's appointment is automatically terminated.

Should a vacancy occur in the membership of the committee, the Committee Secretary shall report this to the next meeting of the council for determination as to whether or not the nominating organisation or group is to be invited to nominate a replacement. The committee has the power to co-opt a person as a member of the committee to assist with special projects, or it may recommend to the council that additional members be appointed to the committee should it consider wider representation would be of assistance in performing its functions.

Members of the committee representing outside organisations or groups, are expected to regularly report back to their nominating organisation on matters discussed at committee meetings.

Functions

1) For council's monitoring, land management, water management, biodiversity, biosecurity and river management activities
   - advise council on any significant legislative changes, programmes, plans or reports affecting these activities
   - advise and make recommendations to council (and relevant committees) on matters of policy and implementation

2) monitor and review progress towards council's objectives, the achievement of the performance targets and the delivery of work programmes in the relevant Northland Long Term Plan. Annual Plan and operational strategies (such as the Regional Pest Management Strategy). To be the governance entity for Waiora Northland Water, and river liaison and catchment group subcommittees.

3) To oversee the administration of the Environment Fund.

4) To make recommendations to and work with the Regional Policy Committee on the review and development of the new Northland Regional Plan(s) (RMA). Key focus areas include:

   a. Ensuring alignment between the functions of the committee and the policy development process for the new Northland Regional Plan(s)

   b. Identifying key issues and making relevant comments for the Regional Policy Committee to investigate during the review of plans.

   c. Advancing the recommendations from catchment groups (subcommittees of the committee) set up for priority water bodies are included in the policy development process for the new Northland Regional Plan(s)

   d. Advising the Regional Policy Committee on good management practices to be included in the policy development process for the new Northland Regional Plan(s).

5) To appoint a suitably qualified representative to the TBfree Northland Committee

6)) To review and recommend to council on such other functions as may be delegated from time to time.

Delegated Authority – Power to Act

1) The council grant to the committee the power to act on all matters except those matters specified by Clause 32 (1) of Schedule 7 of the Local Government Act 2002:

   (a) make a rate;
   (b) make a bylaw;
   (c) borrow money, or purchase or dispose of assets, other than that in accordance with the current Long Term Plan or Annual Plan;
   (d) adopt a Long Term Plan, or Annual Plan, or Annual Report;
   (e) appoint a Chief Executive; or
   (f) adopt policies required to be adopted and consulted on under this Act in association with a Long Term Plan or developed for the purpose of the Local Governance Statement.

2) Does not have the powers of council to act re:
   - the final approval of plans prepared under the Resource Management Act 1991;
   - the Hazardous Substances and New Organisms Act 1996;

- the Land Drainage Act 1908;
- the Soil Conservation and Rivers Act 1941;
- the Maritime Transport Act 1994;
- the Civil Defence Emergency Management Act 2002;
- the Biosecurity Act 1993; and
- in respect of matters under those Acts that do not permit such delegations.

3) Does have the ability to appoint subcommittees to deal with any matters of responsibility within the committee's Terms of Reference and areas of responsibility, and to make recommendations to the committee on such matters. (Any subcommittee shall not have power to act other than by a resolution of the committee with specific limitations where there is urgency or special circumstance.)

4) Does have the ability to make decisions in accordance with the Terms of Reference.

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ISSUE: Receipt of Minutes: Environmental Management Committee meeting 24 September 2013

ID: A597092

To: Environmental Management Committee, 2 December 2013

From: Peternel McLean, Committee Secretary

Date: 19 November 2013

Summary The purpose of this report is to receive the confirmed minutes of the Environmental Management Committee meeting held on 24 September 2013.

Report Type:	☑	Normal operations	☐	Information	☑	Decision
Purpose:	☐	Infrastructure	☐	Public service	☑	Regulatory function
	☐	Legislative function	☐	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Report

The minutes of the Environmental Management Committee meeting, held on 24 September 2013, have been confirmed as a true record of proceedings. They are **attached** for the committee's information.

Compliance with decision making processes

Councils are required to keep minutes of proceedings in accordance with the Local Government Act 2002.

Recommendation

1. That the minutes of the Environmental Management Committee meeting held on 24 September 2013 be received.

NORTHLAND REGIONAL COUNCIL
ENVIRONMENTAL MANAGEMENT COMMITTEE

Minutes of the Environmental Management Committee Meeting
held in the Council Chambers,
Northland Regional Council, 36 Water Street, Whāngārei, on
Tuesday 24 September 2013, commencing at 9.30 am

Present:

Northland Regional Council
Cr Joe Carr (Chair)
Cr Graeme Ramsey (Deputy Chair)
Cr Craig Brown (ex officio)
Cr Bronwyn Hunt
Cr Bill Rossiter
Cr Tony Davies-Colley

Far North District Council
Cr Di Maxwell

Kaipara District Council
Commissioner Richard Booth

Department of Conservation
Mr Chris Jenkins

Environmental Interest Groups
Dr Greg Blunden

Farming Community
Mr Alan Clarkson

Forestry Industry
Mr Geoff Gover

In Attendance:

Full Meeting
Chief Executive Officer
Operations Director
Consents/Monitoring Senior Programme Manager
Land/Rivers Senior Programme Manager
Committee Secretary

Part Meeting
General Manager – Policy and Planning
Biosecurity Senior Programme Manager
Land Programme Manager
Rivers Programme Manager
Environmental Monitoring Programme Manager
Policy Specialist - Water
Economist
Groundwater Management Specialist
Marine Research Specialist
Policy Analysts

Members of the Public
Ms Helen Moodie, Dr Tom Stephens (DairyNZ)
Mr Warren Slater
Ms Tania Pene
Mr Kaio Hooper, Ms Denise Gillespie (Tangonge Wetland Restoration project)

The Chairman declared the meeting open at 9.32 am.

Apologies

No apologies were received.

Absent

Cr Crichton Christie (WDC) was absent from the meeting.

Declaration of Conflict of Interest

There were no declarations of conflict of interest at any point in the meeting.

Confirmation of Minutes of the Environmental Management Committee meeting held on 30 July 2013 (Item 1.0)

A581854

Moved (Rossiter/Hunt)

That the minutes of the meeting of the Environmental Management Committee held on 30 July 2013 be confirmed as a true and correct record.

Carried

Cr Di Maxwell (FNDC) arrived at this point of the meeting (9.34am).

Tabled Item for Environmental Management Committee meeting – 24 September 2013 (Item 1A)

A584207
Report from Peternel McLean Committee Secretary.

Moved (Blunden/Clarkson)

That as permitted under section 46A(7) of the Local Government Official Information and Meetings Act 1987, the tabled item:

(9.B) Mangere Catchment Group – additional nominations for membership

be received.

Carried

Mr Chris Jenkins (DOC) arrived at this point of the meeting (9.37am).

Waiora Northland Water Progress – September 2013 (Item 2.0)

Report from Natalie Glover, Policy Specialist - Water.
A581730

Moved (Rossiter/Clarkson)

1. That the report Waiora Northland Water progress by Natalie Glover, Policy Specialist – Water and dated 12 September 2013, be received.

2. That the unconfirmed minutes of the following meetings are received:

    a. Mangere Catchment Group, 6 August 2013
    b. Doubtless Bay Working Group, 28 August 2013
    c. Kaipara Harbour Joint Political Committee, 28 August 2013
    d. Integrated Kaipara Harbour Management Group, 27 August 2013

Carried

Matters arising from Item 2.0:
Dr Tom Stephens, Water Quality Specialist, DairyNZ was invited to address the committee. Dr Stephens has been involved in investigation work within the Mangere catchment as part of DairyNZ's commitment to the Waiora Northland Water project, and has contributed technical information for the Mangere catchment description. He was confident that the information contained within catchment descriptions provided a baseline from which measurable improvements in water quality as a result of altered practices could be assessed.

The Committee Chairman acknowledged and thanked Cr Davies-Colley for his efforts as the inaugural Chair of the Mangere Catchment Group.

River Values Assessments Update (Item 3.0)

Report from Darryl Jones, Economist, dated 17 September 2013.
A581889

Moved (Blunden/Jenkins)

1. That the report River Values Assessments Update by Darryl Jones, Economist, dated 17 September 2013 be received.

2. That the committee supports the use of the RiVAS methodology to assist with the process of assessing values of Northland rivers including by:

    i. Providing the results of the RiVAS and economic assessments to the respective catchment stakeholder groups to assist with their process of assessing uses and values.

    ii. Uploading the final reports of all four assessments onto the Waiora Northland Water homepage on the NRC website.

iii. Reporting to the committee the possible application of RiVAS at a catchment scale level.

iv. Reporting to the committee the possible development of a RiVAS application for assessing agricultural production values of rivers.

Carried

It was further moved (Jenkins/Clarkson)

1. That the report "Economic value of water allocation in Northland" as circulated to the committee by email on 17 September 2013 be received as a tabled item.

Carried

Matters arising from 3.0
Darryl Jones, Economist, provided a presentation which summarised the findings of the three RiVAS assessments that had been carried out, which were proposed to be made available on the NRC website. The presentation also included an economic value assessment, based on potential generation of economic return to the region. All assessment work is designed to assist stakeholder groups establish appropriate values for priority catchments and will also assist setting regional objectives for areas outside priority catchments.

Water Allocation Update (Item 4.0)

Report from Susie Osbaldiston, Groundwater Management Specialist, dated 28 August 2013.
A562258

Moved (Clarkson/Hunt)

1. That the report Water Allocation Update by Susie Osbaldiston dated 28 August 2013 be received.

2. That the committee consider the need to hold a Water Allocation Workshop to provide greater detail on the projects presented in this report.

Carried

Matters arising from 4.0
Susie Osbaldiston, Groundwater Management Specialist, provided a presentation which gave an overview of the various projects underway in relation to water quantity and the allocation of water within the region. As with other work such as the RiVAS and economic assessments being carried out, this data will assist stakeholder groups understand the value of water in particular catchments, the trade-offs necessary between water allocation and water restrictions, and on a broader front assist the setting of regional objectives and limits. A water allocation workshop for the committee was proposed, to be scheduled for 2014.

Wetlands update (Item 5.0)

Report from Tony Phipps, Operations Director; James Griffin, Policy Analyst and Lisa Forester, Biodiversity Specialist, dated 16 September 2013.
A580636

Moved (Ramsey/Jenkins)

1. That the report Wetland Update by Tony Phipps, Operations Director; James Griffin, Policy Analyst and Lisa Forester, Biodiversity Specialist and dated 16 September 2013, be received.

2. That staff establish a clear definition that describes northern heathlands and gumlands and use this to complete mapping their spatial extent.

3. That staff continue to develop the wetland management strategy and that it include northern heathlands.

Carried

Matters arising from 5.0
Some disappointment was expressed by committee members that the report did not extend to addressing all matters that had been discussed by the wetland working group, such as the potential for environmental / economic trade offs. The Chairman invited Mr Chris Jenkins to provide input to the wetland working group if his work schedule allowed.

Sedimentation in Northland's coastal environment (Item 6.0)

Report from Richard Griffiths, Marine Research Specialist, dated 24 August 2013.
A560043

Moved (Rossiter/Blunden)

1. That the report "Sedimentation in Northland's coastal environment" by Richard Griffiths, Marine Research Specialist, dated 24 September 2013 be received.

Carried

Department of Conservation – Fonterra sponsorship (Item 7.0)

Report from Chris Jenkins, Director Conservation Services, Northern North Island, Department of Conservation, dated 30 August 2013.
A565199

Moved (Carr/Rossiter)

1. That the report provided by Mr Chris Jenkins, Director Conservation Services, Northern North Island, Department of Conservation on the Department of Conservation – Fonterra sponsorship initiative, be received.

Carried

Community wastewater treatment plant discharges – current compliance status (updated) (Item 8.0)

Report by Tess Dacre, Monitoring Programme Manager – Water and Wastes, dated 11 September 2013.
A581222

Moved (Rossiter/Hunt)

> That the report Community wastewater treatment plant discharges – current compliance status (updated) from Tess Dacre, Monitoring Programme Manager – Water and Wastes, dated 11 September 2013 be received.

Carried

Whāngārei Harbour Catchment Group – membership (Item 9.0)

Report from Ben Tait, Policy Analyst, dated 12 September 2013.
A538237

Moved (Rossiter/Brown)

1. That the report Whāngārei Harbour Catchment Group - membership by Ben Tait, Policy Analyst and dated 13 September 2013, be received.

2. That the committee amends the Terms of Reference for the Whāngārei Harbour Catchment Group to provide for additional positions for farming interests, hapū/iwi and the community at large (as per the proposed changes in the attached Terms of Reference).

3. That the following people be appointed to the Whāngārei Harbour Catchment Group:
   - Nicki Wakefield – Nominated by hapū /iwi
   - Juliane Chetham – Nominated by hapū /iwi
   - Clive Stone – Nominated by hapū /iwi
   - Jon Clotworthy – Nominated by dry stock farming interests
   - Murray Owen – Nominated by dry stock farming interests
   - Murray Byles – Nominated by dairying interests
   - Freya Lynch – Nominated by dairying interests
   - Andrew Warren – Nominated by forestry interests
   - Jack Price – Nominated by fisheries interests
   - Paul Dunn (marine services industry) – Nominated by other business/industry interests
   - Jeremy Busck – Nominated by environmental interests
   - Margaret Kay – Expressed an interest and recommended by staff
   - Neville Erceg – Expressed an interest and recommended by staff
   - Glen Mortimer – Expressed an interest and recommended by staff
   - Adrian Tonks – Expressed an interest and recommended by staff

4. That a further report including confirmation of any final nominations to the Whāngārei Harbour Catchment Group be provided at the Environmental Management Committee's meeting in November.

Carried

It was further recommended (Rossiter/Brown)

5. That additional representation to the Whangarei Harbour Catchment Group be sought from the marine industry.

Carried

Matters arising from 9.0
A committee member raised questions over potential conflict of interest for Mr Glenn Mortimer who had been nominated to the group and staff agreed to canvass this with him. Also noted was the inclusion of the Chair of Environmental Management Committee as ex-officio member of the Whāngārei Harbour Catchment Group.

Mangere Catchment Group – additional nominations for membership - tabled item (Item 9.B)

Report by Natalie Glover, Policy Specialist - Water, dated 19 September 2013.
A584212

Moved (Clarkson/Davies-Colley)

1. That the Mangere Catchment Group – additional nominations for membership - tabled item, by Natalie Glover, Policy Specialist - Water, dated 19 September 2013, be received.

Carried

Environment Fund Update (Item 10.0)

Report from Dean Evans, Land Programme Manager dated 10 September 2013.
A580775

Moved (Hunt/Rossiter)

1. That the report Environment Fund Update by Dean Evans, Land Programme Manager and dated 10 September 2013, be received.

Carried

Matters arising from 10.0
Cr Graeme Ramsey noted the low numbers of Efund projects in the Kaipara district and staff agreed to report back to the committee in relation to this.

Environmental Monitoring for the Period 1-31 August 2013 (Item 11.0)

Report by Colin Dall, Consents/Monitoring Senior Programme Manager, dated 11 September 2013.
A581209

Moved (Hunt/Rossiter)

1. That the Environmental Monitoring report for the period 1-31 August 2013 from Colin Dall, Consents/Monitoring Senior Programme Manager, dated 11 September 2013, be received.

Carried

River Management Update (Item 12.0)

Report from Joseph Camuso, Rivers Programme Manager, dated 11 September 2013.
A581051

Moved (Ramsey/Clarkson)

1. That the report River Management Update by Joseph Camuso, Rivers Programme Manager dated 11 September 2013, be received.

2. That the draft minutes of the Awanui River Liaison Committee held 30 August 2013 and Kaihu River Liaison Committee meeting held 14 August 2013 be received.

Carried

Biosecurity - Operational Plan reporting (Item 13.0)

Report by Don Mckenzie, Biosecurity Senior Programme Manager, dated 1 September 2013.
A563784

Moved (Rossiter/Hunt)

1. That the report Biosecurity - Operational Plan reporting by Don Mckenzie, Biosecurity Senior Programme Manager dated 1 September 2013, be received.

Carried

Biosecurity Responses Update: Kiwifruit Psa-V, Mediterranean fanworm, Kauri dieback (Item 14.0)

Report by Don Mckenzie, Biosecurity Senior Programme Manager, dated 13 September 2013
A582268

Moved (Maxwell/Booth)

1. That the report, Biosecurity Responses Update: Kiwifruit Psa-V, Mediterranean fanworm, Kauri dieback, by Don Mckenzie, Biosecurity Senior Programme Manager dated 9 September 2013, be received.

Carried

Matters arising from 14.0
Kauri dieback: The Chairman of Northland Regional Council had been involved in a deputation to Wellington to secure ongoing financial support for work to protect kauri. As part of this a business case was being prepared and would be delivered to the Minister in December 2013.
Mediterranean fanworm: A short video graphically illustrated the level of infestation evident in the Waitemata Harbour which sparked considerable discussion.

It was further moved (Maxwell/Booth)

2. That the committee request the NRC Chairman Craig Brown to work with staff to develop a media strategy.

Carried

Te Runanga O Te Rarawa, Te Runanga O Ngaitakoto: Lake Tangonge Wetland Restoration Project - presentation (Item 15.0)

Report by Peternel McLean Committee Secretary, dated 12 September 2013 and presentation by the Lake Tangonge Wetland Restoration Project Team. A565199

Moved (Carr/Hunt)

1. That the presentation by the Lake Tangonge Wetland Restoration Project Team be received.

Carried

Matters arising from 15.0
Mr Kaio Hooper was welcomed to the committee meeting by Mr Abe Witana. Mr Hooper provided a presentation regarding the historic significance of Lake Tangonge to Te Runanga O Te Rarawa and Te Runanga O Ngaitakoto, the current situation and aspirations for the area which included working with stakeholders to restore sections of the lake and wetland.

The Chairman thanked Mr Hooper both for his presentation and for his contribution to the Awanui Liaison Committee and stated his belief that the difficulties that are present are not unsurmountable. He further commended Mr Hooper's balanced viewpoint and trusted that the committee would reciprocate in a similar fashion and work towards positive outcomes. The Chairman also thanked Mr Witana for providing the welcome.

Closing Remarks

In closing this final committee meeting of the triennium, the Chairman thanked the committee and subcommittees for their support and commitment. NRC Chairman Craig Brown thanked Cr Joe Carr for leading the committee.

Conclusion

The meeting closed at 12.56pm.

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ISSUE: Proposed changes to the National Policy Statement for Freshwater Management

ID: A595432

To: Environmental Management Committee, 2 December 2013

From: Justin Murfitt – Programme Manager Resource Policy

Date: 12 November 2013

Summary The purpose of this report is to advise the committee of proposed changes to the National Policy Statement for Freshwater Management and in particular the associated national objectives framework. It concludes with the recommendation that staff report back to council on the need for and potential content of a submission on the proposed changes.

Report Type:	☐	Normal operations	☑	Information	☐	Decision
Purpose:	☐	Infrastructure	☐	Public service	☑	Regulatory function
	☐	Legislative function	☐	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Background:

In May 2011 the government released the National Policy Statement for Freshwater Management (NPSFM). The NPSFM sets out how councils (primarily regional councils) are to manage freshwater resources. Key aims of the NPSFM are that overall water quality is maintained or improved within a region and that the life supporting capacity of freshwater and associated ecosystems are safeguarded. The NPSFM includes a requirement to set water management objectives that reflect and protect the uses and values of water. These objectives are to be achieved through water quantity and quality limits that define the maximum amount of the water resource available (whether for extraction or in terms of capacity to assimilate contaminants).

Council has developed the Waiora Northland Water programme to implement the NPSFM using both collaborative processes in specified high priority catchments and a more generic region wide approach elsewhere to set objectives and develop water management measures. Work has progressed to establish collaborative groups for specific catchments (Whangarei Harbour, Mangere and Doubtless Bay). Implementation of water management measures is likely to be through regulatory (i.e. rules in regional plans) and non-regulatory measures such as farm water quality improvement plans and/or funding for riparian restoration.

On 7 November 2013, the government announced proposed changes to the NPSFM. The proposals are set out in a discussion document: Proposed amendments to the National Policy Statement for Freshwater Management 2011.[1]

[1] Document is available in electronic format from the Ministry for the Environment's website: http://www.mfe.govt.nz/publications/water/proposed-amendments-nps-freshwater-management/proposed-amendments-nps-freshwater-management.pdf

WAIORA NORTHLAND WATER

These proposals are intended to provide more direction and guidance in implementation of the NPSFM and in particular to address:

- A lack of clarity on how to manage water to protect community / iwi values;
- Duplication of scientific effort;
- Debate over the science impeding discussion on values;
- A lack of consistency in defining minimum acceptable states for water quality.

The changes proposed to the NPSFM do not alter the overall intent but are more in the nature of clarification and to provide implementation tools. The key changes are outlined below.

Discussion:

The proposed changes include amendments to objectives and policies of the NPSFM and the addition of several mechanisms intended to provide greater clarity and consistency, particularly in relation to water quality. The changes are summarized as follows:

- A requirement for regional councils to account for water takes and contaminant sources;
- A list of national values of freshwater and national objectives framework to assist in setting objectives for water quality and associated policy;
- A compulsory requirement to set objectives for ecosystem health and human health (secondary contact), including mandatory environmental 'bottom-lines' for these values;
- Clearer articulation of tangata whenua values for freshwater in policy;
- Requirement to monitor progress toward achieving objectives;
- More emphasis on the connections between fresh and coastal waters.

The most significant amendment is the addition of the national objectives framework (NOF). This framework is intended to provide a nationally consistent structural basis for setting objectives, primarily in relation to water quality (this being the more challenging for most councils). The NOF uses a table format to define four water quality states or bands for a number of nationally held values of water in lakes and rivers. The values include ecosystem health, human health (secondary contact) and contact recreation. Interestingly, while the proposed amendments to the NPSFM (and NOF) emphasise connections between fresh and coastal waters, no national values appear to relate specifically to coastal waters and associated descriptions are limited to freshwater management units.

For each of these values the NOF applies a series of water quality indicators called attributes. For example the attributes for the ecosystem health value of lakes are chlorophyll-a, total nitrogen, total phosphorous, toxicity (nitrate and ammonia) which are contaminants that impact freshwater ecosystems. Each of these attributes is described in four states or bands from very good (A), good (B), fair (C) and very poor (D). These attributes states / bands are described numerically (E.g. total Nitrogen per cubic metre) and in narrative terms (I.e. a description). So attribute states are essentially a series of thresholds that describe four water quality conditions for a number of water quality indicators.

Significantly, the NOF applies national 'bottom lines' – a minimum acceptable state for the specified attributes. The bottom lines are set at the break-point between the C and D attribute states/bands. A rank of D is below the bottom line and unacceptable – councils usually need

to try and improve water quality where attribute states are below national bottom lines (although there are some exceptions provided where this is a 'legacy' issue and a remedy is over the long term or for significant infrastructure).

An extract from the NOF tables (Ecosystem health value: total nitrogen attribute for lakes) is provided below as an example:

Value	Ecosystem Health		
Freshwater Body Type	Lakes		
Attribute	Total Nitrogen		
Attribute Unit	mg/m^3 (milligrams per cubic metre)		
Attribute State	**Numeric Attribute State**		**Narrative Attribute State**
	Annual Median	**Annual Median**	
	Seasonally Stratified and Brackish*	**Polymictic**	
A	<160	<300	Lake ecological communities are healthy and resilient, similar to natural reference conditions.
B	160–350	300–500	Lake ecological communities are slightly impacted by additional algal and plant growth arising from nutrients levels that are elevated above natural reference conditions.
C	350–750	500–800	Lake ecological communities are moderately impacted by additional algal and plant growth arising from nutrients levels that are elevated well above natural reference conditions
National Bottom Line	**750**	**800**	
D	>750	>800	Lake ecological communities are at high risk of a regime shift to a persistent, degraded state, due to impacts of elevated nutrients leading to excessive algal and/or plant growth, as well as from losing oxygen in bottom waters of deep lakes.

The national bottom line is set between C and D attribute states, meaning where total nitrogen exceeds 750/800 mg/M^3, water quality should be improved. As the NPSFM requires overall water quality in a region to be maintained or improved, a shift downwards in quality (I.e from say B to C) must be accompanied by an equivalent improvement elsewhere. Nor should any water body be allowed to degrade to the extent it exceeds bottom lines (I.e. shift into the D state).

The changes to the NPSFM as proposed requires that both ecosystem and human health (secondary contact) values are compulsory, meaning objectives must be set for all the attributes associated with these values as set out in the NOF. This would mean objectives and water quality standards are required for the following attributes:

Compulsory values/attributes

Value	Waterbody type	Attribute
Ecosystem health	Lakes	Chlorophyll-a
		Total Nitrogen
		Total Phosphorous
	Lakes and Rivers	Nitrate toxicity
		Ammonia toxicity
	Rivers	Dissolved Oxygen
		Periphyton
Human health (secondary contact recreation)	Lakes and rivers	*E. coli*
		Cyanobacteria

Applying the NOF:

Application of the NOF would be a requirement of the amended NPSFM. A new Policy (Policy CA) sets out how the NOF is to be applied by regional councils. In summary, this policy states:

1. Councils must consider all National values for freshwater and identify those that apply to freshwater management units in their region (compulsory values must be included). Other values as appropriate may also be identified;
2. Attributes are to be applied to the values identified using the NOF tables. Where attributes are not provided in the NOF these should be developed where appropriate;
3. Developing objectives in terms of the attribute states (preferably numeric);
4. In doing the above:
    - Objectives for compulsory values must be set at or above national bottom lines (unless the freshwater management unit is already below the bottom lines);
    - The current state and anticipated future state of the freshwater management unit in terms of past and current resource use must be considered;
    - The scale of the freshwater management unit must be taken into account;
    - The limits required, timeframes and any trade-off between values must be considered in formulating objectives;
    - The impact of freshwater objectives and associated limits on resource users / communities must be assessed;

The NOF provides a framework for communities (at both regional and catchment scale) to consistently identify or 'benchmark' the current state of a given water body (or water body type) and then establish objectives for change (or maintain the status quo). For example, a given water body may currently lie in the C band for ecosystem health, the community in collaboration with council may decide an improvement to achieve the B state is desirable and achievable over a set period of time. The B band attribute states would then become the water quality objectives for ecosystem health. Water quality limits and improvement measures would then be applied to achieve that state over time. Improvement measures could include additional rules on discharges to land and water and / or non-regulatory approaches such as riparian planting, stock exclusion and good management practice.

Communities can also seek to address other values of water not currently listed in the NOF and develop objectives and attributes for these as needed (E.g. water supply for primary or commercial use). Further attributes may also be developed for values – for example the impact of sediment may be a concern for ecosystem health in a particular catchment (or estuary / harbour). A similar approach to the NOF framework could be used to set objectives for sediment, however current and desired attribute states for sediment would need to be developed for the catchment / freshwater management unit (E.g. current and desired sediment loads).

The full implications of applying the NOF (particularly the compulsory attributes) in Northland have yet to be fully assessed. It is useful that the NOF has been developed using some indicators that are commonly monitored by regional councils and for which we have Northland data (although incomplete in some areas). Initial indications are that in relation to NOF ecosystem health attributes for toxicity (ammonia and nitrate) and secondary contact (*E. coli*), our rivers are in good health with the majority in the A band. Lakes are also in a relatively good state for toxicity and dissolved oxygen with most of those monitored in A or B bands. Total Nitrogen and Chlorophyll-a appear to be of most concern in relation to lakes, with several in the D band and therefore below bottom lines (Refer Attachment 1: NOF attributes in Lakes and Rivers).

Council's monitoring programme is reasonably well aligned with the compulsory attributes in the NOF, however there are gaps, for example we have very limited data for Cyanobacteria and Periphyton. Also, the way we monitor dissolved oxygen differs from the measure in the NOF attribute. The way we monitor water quality in Northland (the type of water bodies and indicators monitored, the location, method and frequency of sampling) will depend on the attributes set out in the NOF and the any values and objectives identified by communities are to be assessed and measured. Modeling will also be needed to assist in both the testing and setting of objectives and in development of associated water quality limits in freshwater management units.

Conclusion

The NOF is not yet complete. There are likely to be other values added at a later date and other attributes states developed (for example further attributes for ecosystem health may include sediment and / or macro-invertebrate index). There are difficulties in setting such attribute states at a national level that have yet to be resolved. The NOF is expected to be populated further as the science progresses. There are also likely to be additions to the NOF for other types of water bodies such as aquifers and wetlands.

The NOF is likely to be useful in debating objectives with communities in Northland as it provides a structure to establish a number of meaningful numeric water quality objectives that are also explained in plain English. The attributes set out in the NOF are also generally well aligned with monitoring data collected by council although changes will be needed if the NOF progresses.

The attributes listed are reasonably well aligned with council's monitoring programme, although changes will be required. Initial impressions are that the Wai Ora Northland Water programme can incorporate the NOF without significant revision. The other changes to the NPSFM appear generally beneficial particularly the added emphasis on integrating coastal and freshwater which is especially relevant for Northland (most of our freshwater bodies discharge to highly valued estuaries and harbours).

WAIORA NORTHLAND WATER

The proposed amendments to the NPSFM and the NOF are open to submissions until 4 February 2014. Staff have yet to fully asses the implications for council and Northland generally. It is recommended that staff report back to the committee (should agenda's allow) and / or council on the merits and content of a submission once this assessment is complete.

Legal Compliance and Significance Assessment:

The activities detailed in this report are part of the council's day to day operations and as such are provided for in the council's 2012-2022 Long Term Plan, and are in accordance with the council's decision making process and sections 76-82 of the Local Government Act 2002.

Recommendations:

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1. That the report Proposed changes to the National Policy Statement for Freshwater Management by Justin Murfitt – Programme Manager Resource Policy and dated 12 November 2013 be received.

2. That staff assess the proposed changes to the National Policy Statement for Freshwater Management and associated national objectives framework and report back to the committee (or council) as the need for and content of a submission.

Northland Rivers compliance rate with NPS

VALUE	NITRATE TOXICITY			AMMONIA TOXICITY			SECONDARY CONTACT RECREATION			ECOSYSTEM HEALTH		PERIPHYTON		HUMAN HEALTH	
Site Name	NO3 (mg/L)			NH4 (mg/L)			E.coli (MPN/100ml)			DO (mg/L)		Chlorophyl a (mg/m3)		Cynobacteria (cells/mL) (planktonic)	
	Median	95th Percentile	State	Median	95th Percentile	State	Median	95th Percentile	State	1-day Minimum (Summer)	State	Annual Maximum	State	Two year average	State
Awanui @ FNDC watertake	0.026	0.1825	A	0.016	0.0304	A	288	1121.5	B	7.6	C	89.05	B		
Awanui @ Waihue Channel	0.035	0.2080	A	0.1035	0.2400	B	218	2323.9	A	4.9	D	ND	ND		
Hakaru @ Topuni Creek Farm	0.185	0.3450	A	0.014	0.0414	A	228.5	872.3	A	5.8	C	492.23	D		
Hatea u/s Mair Park Bridge	0.385	0.6105	A	0.013	0.0259	A	190	4836.0	A	8.9	A	57.05	B		
Kaeo @ Dip Road	0.048	0.1780	A	0.014	0.0247	A	455	7805.0	B	8.4	A	ND	ND		
Kaihu @ gorge	0.225	0.3970	A	0.0135	0.0254	A	259.5	2018.4	A	5.21	C	59.66	B		
Kerikeri @ Stone Store bridge	0.420	0.5890	A	0	0.0450	A	200.5	2987.9	A	9.1	A	22.30	A		
Mangahahuru @ Apotu Road	0.330	0.4215	A	0.0225	0.0475	A	294	3539.5	B	6.8	C	ND	ND		
Mangahahuru @ Main Road	0.150	0.2600	A	0.0155	0.0582	A	196	833.4	A	8.1	A	7.55	A		
Mangakahia @ Titoki Bridge	0.046	0.2060	A	0.009	0.0351	A	68.2	782.2	A	8.6	A	ND	ND		
Mangakahia @ Twin Bridges	0.014	0.2480	A	0.0105	0.0348	A	127	2614.0	A	9.2	A	172.13	C		
Mangamuka @ Iwiatua Road	0.010	0.1176	A	0.008	0.0202	A	279	1440.5	B	8.31	A	12.60	A		
Manganui @ Mitaitai Road	0.119	0.3400	A	0.026	0.1210	A	172	891.7	A	5.5	C	ND	ND		
Mangere @ Knight Road	0.495	0.7860	A	0.0275	0.0947	A	446.5	12310.4	B	4.3	D	ND	ND		
Ngunguru @ Coalhill Lane	0.140	0.2935	A	0.0135	0.0170	A	166.5	2863.9	A	8.6	A	ND	ND		
Opouteke @ suspension bridge	0.042	0.2445	A	0.009	0.0373	A	174	2064.1	A	8.9	A	148.53	C		
Oruru @ Oruru Road	0.010	0.1945	A	0.013	0.0351	A	173	4488.5	A	7.4	C	ND	ND		
Otaika @ Otaika Valley Road	1.250	1.7450	B	0.016	0.2436	A	555	2534.8	C	5.4	C	3.54	A		
Paparoa @ walking bridge	0.110	0.5380	A	0.027	0.0615	A	481	3261.5	B	3.9	D	ND	ND		
Punakitere @ Taheke Recorder	0.395	0.5850	A	0.016	0.0366	A	271.5	1929.1	B	8.8	A	40.85	A		
Ruakaka @ Flyger Road	0.330	0.5645	A	0.043	0.1400	B	578	6157.1	C	4.7	D	55.30	B		
Utakura @ Okaka Road Bridge	0.092	0.2425	A	0.0175	0.0486	A	285	1102.9	B	7.1	C	ND	ND		
Victoria @ Thompsons Bridge	0.018	0.1215	A	0.0065	0.0167	A	169	871.0	A	7.1	C	49.40	A		
Waiarohia @ Whau Valley	0.375	0.5635	A	0.0185	0.0665	A	504	4106.6	B	5.3	C	47.20	A		
Waiarohia @ Lovers Lane	0.335	0.5525	A	0.0135	0.0280	A	441	3435.1	B	5.3	C	42.60	A		
Waiharakeke @ Stringers Road	0.085	0.1690	A	0.0235	0.0338	A	496.5	1319.6	B	6.8	C	79.40	B		
Waimamaku @ SH12	0.004	0.0370	A	0.0115	0.0250	A	561.5	7098.0	C	7.6	C	ND	ND		
Waiotu @ SH1	0.28	0.6605	A	0.02	0.1072	A	310	2899.4	B	7.1	C	ND	ND		
Waipao @ Draffin Road	2.700	3.0000	C	0.012	0.0244	A	484	5149.5	B	5	C	3.16	A		
Waipapa @ Forest Ranger	0.010	0.0619	A	0.003	0.0040	A	68.2	782.2	A	8.6	A	16.95	A		
Waipapa @ Waipapa Landing	0.310	0.4490	A	0.0175	0.0334	A	181	660.9	A	8.25	A	47.74	A		
Waipoua @ SH12 Rest Area	0.010	0.0418	A	0.008	0.0350	A	69	1045.9	A	9.7	A	6.10	A		
Wairua @ Purua	0.350	0.4982	A	0.0215	0.0793	A	103.1	1555.7	A	6.4	C	ND	ND		
Waitangi @ Watea	0.202	0.4384	A	0.011	0.0299	A	192.2	1680.3	A	9.5	A	ND	ND		
Waitangi @ Waimate Road	0.350	0.4935	A	0.016	0.0285	A	642.5	1247.1	C	9	A	70.60	B		
Whakapara @ cableway	0.275	0.4825	A	0.011	0.0455	A	308	878.0	B	7.4	C	ND	ND		

Note:
2012 data used in anlysis
State based on median
Suspect data - requires investigation
Cynobacteria data in rivers collected as benthic not planktonic as recommended in protocols
ND for periphyton due to muddy substrate of river and dominance of macrophyte growth

A Similiar to reference conditions
B Slightly impacted
C Moderately impacted (lower/upper limit national bottom line)
D Degraded (must be managed to C or better)

Northland Lakes compliance rate with NPS

VALUE		ECOSYSTEM HEALTH		AMMONIA TOXICITY		NITRATE TOXICITY		ECOSYSTEM HEALTH		ECOSYSTEM HEALTH		ECOSYSTEM HEALTH		HUMAN HEALTH	
LAKE		Chlorophyl a (mg/m3)		NH4 (g/m3)		NO3 (g/m3)		TN (mg/m3)		TP (mg/m3)		DO (g/m3)		Cynobacteria (BIOVOLUME mm3/L)	
		Annual median		Annual median		Annual median		Annual median		Annual median		Annual minimum		2 year average	
Aupouri lakes	Carrot	8.4	C	0.005	A	0.006	A	510	C	19.5	B	8.2	A	ND	
	Heather	6.2	C	0.0025	A	0.0005	A	307.5	B	15	B	7.3	B	ND	
	Morehurehu	1.85	A	0.0295	A	0.0005	A	608	C	18	B	7.2	B	ND	
	Ngakapua North	3.45	B	0.005	A	0.051	A	480	C	11.5	B	7.2	B	ND	
	Ngakapua South	8.75	C	0.0055	A	0.0005	A	529.5	C	16	B	7.3	B	ND	
	Ngatu	2.85	B	0.375	C	0.0005	A	890.5	D	6.65	A	7.3	B	ND	
	Rotokawau	8.05	C	0.058	B	0.0165	A	769.5	D	16	B	8.3	A	ND	
	Rotoroa	6.7	C	0.0955	B	0.00725	A	884	D	16.5	B	7.2	B	ND	
	Te Kahika	0.65	A	0.064	B	0.0035	A	426.5	C	11	B	7.1	B	ND	
	Waihopo	3.4	B	0.008	A	0.0135	A	536	C	15.5	B	6.8	B	ND	
	Waipara	2.85	B	0.0065	A	0.0005	A	412.5	C	13	B	7.5	B	ND	
	Waiparera	14.95	D	0.0065	A	0.0005	A	772.5	D	33	C	5.8	B	ND	
Karikari / Central	Omapere (east)	1.5	A	ND?		0.0005	A	370	C	30	C	8.4	A	0.213472	A
	Omapere (west)	1.5	A	0.018	A	0.125	A	400	C	24	C	5.2	B	ND	
	Waiporohita	27.5	D	0.009	A	0.0005	A	826.5	D	36	C	8.8	A	ND	
Kai iwi lakes	Kai Iwi	2.94	B	0.005	A	0.00075	A	379.5	C	7.5	A	8.1	A	ND	
	Taharoa	0.705	A	0.0015	A	0.0005	A	126.5	A	2	A	7.7	B	ND	
	Waikare	2.38	B	0.003	A	0.0005	A	203.5	B	4	A	8.2	A	ND	
Pouto lakes	Humuhumu	2.7	B	0.0035	A	0.00175	A	304.5	B	9	A	8.8	A	ND	
	Kahuparere	8.3	C	0.002	A	0.0005	A	331	B	11	B	9.8	A	ND	
	Kanono	7.09	C	0.0015	A	0.0085	A	328.5	B	15	B	8.5	A	ND	
	Karaka	4.295	B	0.0505	B	0.0005	A	320.5	B	23.5	C	8.6	A	ND	
	Mokeno	103.2	D	0.0045	A	0.03875	A	1310	D	72	D	9	A	ND	
	Rotokawau	1.9	A	0.022	A	0.00725	A	379	C	7.5	A	7.6	B	ND	
	Rototuna	27.35	D	0.007	A	0.0015	A	953.5	D	40	C	9.1	A	ND	
	Swan	79.65	D	0.0085	A	0.0005	A	1250	D	67.5	D	8.8	A	0.949708	C
	Wainui	2.25	B	0.0065	A	0.0005	A	371.5	C	14	B	9	A	ND	

2012 data used in analysis
Bacteria data not collected in lakes

A Similar to reference conditions
B Slightly impacted
C Moderately impacted (lower/upper limit national bottom line)
D Degraded (must be managed to C or better)

Suspect data? Requires investigation

ITEM: 5
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ISSUE: **Waiora Northland Water Progress – November 2013**

ID: A596880

To: Environmental Management Committee, 2 December 2013

From: Natalie Glover, Policy Specialist - Water

Date: 19 November 2013

Summary The purpose of this report is to provide an update on progress with Waiora Northland Water and contributing programmes, and to receive minutes of the Whangarei Harbour Catchment Group meeting.

Report Type:	☑	Normal operations	☑	Information	☐	Decision
Purpose:	☐	Infrastructure	☐	Public service	☐	Regulatory function
	☑	Legislative function	☑	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☑	Moderate	☑	Low

BACKGROUND

Waiora Northland Water is Council's water quality and water management improvement programme, encompassing new policy development and linked implementation programmes. It is a priority project for the council and it includes the council's programmes for the implementation of the National Policy Statement for Freshwater Management (NPS-FM)[1].

This report is an update on progress with various components of the project. Several of the individual contributing programmes are the subject of separate reports in this agenda.

NATIONAL FRESHWATER REFORM PROGRESS

Proposals for improving freshwater management, including national water standards, were released 7 November 2013 by Ministry for the Environment. This has followed a series of government announcements and directives since 2011:

- In 2011, the Government released the NPS-FM, which required regions to maintain or improve the water quality in their lakes, rivers, wetlands and aquifers.
- In March 2013 a document was released outlining the Government's proposed plan of action for improving water quality and the way freshwater is managed.

[1] The NPS-FM establishes the legal and policy framework for building a national limits-based approach to water management. The NPS-FM requires that overall water quality must be maintained or improved within a region. The NPS-FM also requires that councils safeguard the life-supporting capacity, ecosystem processes and indigenous species (including their associated ecosystems) of fresh water.

WAIORA NORTHLAND WATER

- In August 2013, the Government announced its intention to create a collaborative planning option for the development of a freshwater plan within a community.

The Government has now released a discussion document to seek the public's feedback on more detailed proposals for amendments to the National Policy Statement for Freshwater Management.[2] The document seeks feedback on the Government's proposals for:

- a national framework to support communities setting freshwater objectives (National Objectives Framework)
- explicit recognition of tangata whenua values for freshwater
- ecosystem and human health as compulsory values in regional plans
- bottom lines for ecosystem and human health that apply everywhere, and restricted grounds for exceptions to bottom lines; and
- requiring councils to account for all water takes and contaminant discharges.

A separate agenda item[3] provides more detail on the National Freshwater Reforms. Officials from the Ministry for the Environment and Ministry for Primary Industries will be holding public meetings and hui around the country during November and December, to seek feedback on the proposals, including two meetings on 3 December in Kaitaia and Whangarei[4]. Submissions on the Discussion Document are due by 5:00pm, Tuesday 4 February 2014.

NORTHLAND POLICY DEVELOPMENT
Council has two key RMA programmes that have a direct bearing on Waiora Northland Water: the Proposed Regional Policy Statement (RPS) and the Regional Plans Review. Both are mandatory under the RMA – we must have an RPS and we must review our regional plans every ten years. These documents provide the policy direction and regulatory framework for water management.

Proposed Regional Policy Statement
The RPS provides a broad direction and framework for managing Northland's natural and physical resources including land, water, air, soil and minerals. A new RPS has been developed to replace the current RPS, and takes into account some important changes that have happened over the last decade.

Council adopted the Commissioners' recommendations as council decisions in September 2013.The appeal period for submitters has now closed and others may join them in support. Staff are reviewing these appeals.

There are several appeals that challenge the provisions of the RPS relating to water management, largely around water quality. This means they won't be operative until the appeals are resolved.

Regional Plans Review
The next phase of regional water policy development is the review of Council's three Regional Plans. The regional plans implement the policy direction in the RPS. Northland has three regional plans, the most relevant to Waiora Northland Water is

[2] http://www.mfe.govt.nz/publications/water/proposed-amendments-nps-freshwater-management/proposed-amendments-nps-freshwater-management.pdf
[3] Agenda item 3 – National Objectives Framework
[4] http://www.consultation.mfe.govt.nz/content/freshwater-online-event-registration-form

the Regional Water and Soil Plan and to a lesser extent the Regional Coastal Plan. The new regional plan will need to contain regional water objectives and quality and quantity limits, policy and rules. An update on the council's work towards developing surface water allocation limits is the subject of a separate agenda item[5].

Staff have developed a draft process for reviewing and developing the new regional plan as follows:

> The aim is to progress to a draft then proposed plan by June 2015 to align with Council's NPS-FM implementation programme.

This draft process has yet to be confirmed by the RPC/Council. Water management will be a key topic for engaging stakeholders as the reviews progress. The regional approach will address catchments with less pressing issues and priority catchments will have a targeted approach.

Catchment Planning
Catchment groups have been established for high priority catchments. These groups have been modelled on the collaborative planning process for freshwater plan development proposed by the Land and Water Forum[6] and government.

These catchment groups will be shaping local water management objectives[7], assessing water management options to meet those objectives, and making catchment management planning recommendations to EMC. These recommendations in turn will be informed by the latest good management practices, catchment modelling and monitoring data. Many outputs from the catchment groups will need to be implemented in the new regional plan.

Industry Collaborations
Members of staff in the Land Management, Consents and Monitoring teams have been assigned to liaise with different sector industry groups to develop, and review industry Good Management Practices. The initiatives and relationships that are developed will also be integral to informing the plan review process.

PRIORITY CATCHMENTS AND OUTSTANDING WATERBODIES
Waiora Northland Water web pages http://www.nrc.govt.nz/waiora
The Waiora Northland Water web pages are available on the Council website and include information about priority catchments and catchment group membership.

Whāngārei Harbour
The Whāngārei Harbour catchment group held its inaugural meeting 17 October 2013. The agenda covered the purpose of the group, what we know about the catchment, and an overview of the Waiora Northland Water programme. Cr David Sinclair was appointed as the Councillor representative at the 6 November 2013 Council meeting.

Minutes from the Whangarei Harbour Catchment Group's October meeting are **attached**.

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[5] Agenda item 5 – Water Allocation Update
[6] http://www.landandwater.org.nz/
[7] A freshwater objective is a statement of what will be achieved, or a desired outcome. Freshwater objectives should provide for the values that communities hold for their fresh water. They are a goal or future desired state, not an immediate standard.

The next meeting of the Whangarei Harbour catchment group will be on 12 December 2013 at the May Bain Room, Whangarei Library.

Mangere Catchment
Cr Bill Shepherd was appointed as the Councillor representative at the 6 November 2013 Council meeting. A workshop was held 18 September 2013 to document local uses and values of water and receive a staff presentation about the Mangere catchment's water quality. The 7 November fieldtrip visited Shane O'Shea and Rob Pye's properties to discuss farm operations and water management initiatives, resulting in a valuable opportunity for catchment group members to inform each other and receive feedback about their various environmental and water management initiatives.

A workshop on Wednesday 27 November 2013 will cover the, DairyNZ report on the results of their fish and riparian surveys. Staff will be presenting on soils of the Mangere catchment. A further workshop will be scheduled for early in the New Year to look at existing community initiatives for water quality improvement.

Doubtless Bay Working Group
Uses and values of water at the subcatchment level were documented at Doubtless Bay Working Group's 26 September 2013 workshop. The workshop held 20 November 2013 included a presentation on Farm Water Quality Improvement Plans in the Doubtless Bay catchment, and provided an opportunity to discuss representation on the group, and the status of the group compared to other Waiora Northland Water catchment groups undertaking the same work.

From a servicing point of view, and reflecting appetite within the group to be on an equal footing with other priority catchment groups, Doubtless Bay Working Group would be well placed to convert to a subcommittee of the EMC. A draft Terms of Reference will be presented to the EMC in the New Year.

Joint Catchment Group Workshop
Catchment group members from all three catchment groups were invited to attend a joint catchment group workshop held 14 November 2013 on the subject of collaborative groups and "structured decision making"[8] for freshwater management. The event saw good attendance from many of the Mangere and Whangarei catchment groups. Due to distance and timing, only one member of the Doubtless Bay catchment group was available to attend the event, so a separate presentation has been organised for 29 January 2014, to be held in Doubtless Bay.

Kaipara Harbour Catchment
The quarterly meeting of the Integrated Kaipara Harbour Management Group (IKHMG) was held 7 November 2013.

Representatives of the Fonterra – DoC Living Waters partnership gave an update of where the programme is currently at and requested suggestions for medium to long-term projects they could assist with funding. In the short-term, Fonterra is continuing to fund Conservation Volunteers at selected flagship sites in the Kaipara catchment.

[8] "Structured Decision Making" describes a process of making complex decisions about freshwater in an organised way by identifying and evaluating options and making choices. It is about frinding win/win solutions using and comparing packages of options to deliver objectives. It is particularly valuable when the choices we face have to integrate values and values based choices with technical information, and add transparency to decision making.

The Kaipara Research Symposium, initially scheduled for early 2014, has been postponed until November 2014 to secure the required funding. Approaches for funding have been made to Living Waters, Reconnecting Northland and the various IKHMG partners. The symposium's purpose is to identify future community priorities and provide an opportunity for the outcomes of research projects carried out in the harbour to be communicated in lay terms to the wider community.

Staff made a presentation on the RiVAS decision support tool and how it has been used to assign values to Northland rivers. Economic values were also presented. Discussions centred around how RiVAS may better include Mātauranga Māori[9] or work alongside systems that incorporate it.

Leane Makey, IKHMG coordinator presented the work that she has completed for her PhD that involves marine spatial planning for the Kaipara Harbour with a system that considers multiple values.

In September, two soil biology workshops (on IKHMG flagship sites) focused on improving soil biological health and were well received by farmers.

Kaipara Harbour Joint Political Committee
The Kaipara Harbour Joint Political Committee (KHJPC) is meeting 27 November 2013 at its usual Kaiwaka Sports Complex venue. Along with a recap to familiarise newly elected representatives with progress to date, the agenda includes a presentation from the Ministry for Primary Industries, updates from IKHMG, Northland Regional and Auckland Councils, an update on treaty settlement matters, the Puhoi – Wellsford Road of National Significance, and a proposal to make a submission to the Reorganisation of Northland Local Government proposal about a collective approach for the Kaipara Harbour.

The next meeting date for the KHJPC has been tentatively scheduled for Wednesday 19 February 2014.

Outstanding Waterbodies
Kai Iwi Lakes
The Taharoa Domain is a 538 hectare recreation reserve containing three freshwater lakes known as the Kai Iwi Lakes. It is administered by the Kaipara District Council, and overseen by the Taharoa Domain Governance Committee (TDGC), a committee of Kaipara District Council.

During 2013 Council has attended a number of TDGC workshops on the review of the Taharoa Domain Reserve Management Plan (the Plan – now over ten years old - sets out how the Taharoa Domain should be managed).

The committee has recently established a steering group to review the Domain's 2002 Management Plan and at the committee's invitation, Council has nominated Councillor Ramsey as its representative on the Steering Group.

[9] Mātauranga Māori – in the traditional context means the knowledge, comprehension or understanding of everything visible or invisible that exists across the universe. This meaning is related to the modern context as Māori research, science and technology principles and practices.

Council classified the Kai Iwi Lakes as outstanding when it adopted its NPS for Freshwater Management implementation programme,and therefore agreed to contribute to the review of the Plan with partnership funding and expertise.

Once the review of the Plan is underway the need for a specific catchment group will be assessed. It may be that the steering group could also perform this function in the future.

CONTRIBUTING PROGRAMMES

Community Wastewater and Dairy Effluent Improvement

Community wastewater and dairy effluent are two of the most significant point source discharges that need managing to avoid problem levels of water contamination. The council has active programmes to promote the improved management of these discharges including through the consenting process, compliance monitoring and enforcement. The region's district councils, dairy farmers and their industry have active programmes to upgrade their wastewater treatment infrastructure and improve farm effluent management. Compliance status and progress with improving community wastewater management is the subject of a separate report[10]. All dairy farms are monitored annually. Where a discharge to water is identified, water quality field tests are done and samples taken for laboratory analyses. In the year to 30 June, a total of 251 non-consented dairy farms were monitored, and 42 instances of significant non-compliance events resulting in an unauthorised/prohibited discharge to water were found. The results indicate a clear downward trend in these events since the 2010/2011 baseline of 60 events. The new season's farm dairy effluent compliance monitoring started in October and all Northland dairy farm discharges will be inspected before the end of December.

Flyger Road Poplar Nursery

Water reticulation and stock fencing to exclude stock from bush, wetlands and waterways for the council owned property at Flyger Road, Mata will also benefit the council's poplar nursery on the property, which will have irrigation installed as part of the project.

Farm Water Quality Improvement Plans as of 11 November 2013

Status of FWQIP	Far North	Kaipara	Whāngārei	Total
Completed	57	6	62	125
In Progress	33	14	27	74
Total FWQIP's	90	20	89	199

The Farm Water Quality Improvement Plan programme is currently under review to see where efficiencies could be achieved whilst maintaining the value of the programme. FWQIPs are a condition of receiving funding from the Environment Fund and provide a mechanism for landowners to interact with land management staff and receive one on one advice about achieving water quality and productivity benefits on farm. The plans are targeted at farmers but open to all landowners where there is an identified need.

[10] Agenda item 8 - Community wastewater treatment plant discharges – current compliance status (updated)

Enviroschools WaiRestoration Northland pilot project – progress report

The Enviroschools WaiRestoration Northland-based pilot project is continuing. This project – supported by a $50,000 grant from the national Enviroschools Foundation – aims to support farmers and engage young people and local communities in the restoration of waterways and biodiversity.

The project's teacher leadership group met on 22 August and 14 November. In August, teachers presented case studies tracking what is happening in local communities and November's meeting focused on a monitoring component of the project.

On 23 October, the Enviroschools Northland team met with the Enviroschools Foundation to discuss continuing the pilot into 2014. The pilot will now continue until 30 June 2014, at which time a national roll-out may occur (the Enviroschools Foundation will meet in February 2014 to gauge regional support for a national roll-out of the project). On 25 October, a planting day to create a stream-side biodiversity corridor was held at the council's Hewlett Road property.

Related to the WaiRestoration project, the first of two annual Enviroschools' expos – this year themed 'Down on the Farm' – was held at the Kokopu dairy farm of Ballance Farm Environment award winners Charmaine and Shayne O'Shea on 5 November. Over the course of the day-long expo, 100 students, teachers and whanau rotated between four 'action stations' covering sustainable farming practices, the roles wetlands play, pest management, effluent treatment and supplementary feeding. A second expo – planned for Taupo Bay on Thursday 07 November had to be cancelled due to bad weather.

Milk tasting with Shayne O'Shea at the recent Enviroschools' 'Down on the Farm' expo

Legal compliance and significance assessment:
The information provided in this report and its recommendations are compliant with the LGA and the RMA and is of low significance under council policy, because it is part of normal operations in keeping with the council's overarching programme for NPS Freshwater implementation adopted in May 2012 as detailed in the 2012-2022 Long Term Plan and the activities in the Annual Plan 2013/14.

Recommendation:

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1. That the report Waiora Northland Water progress by Natalie Glover, Policy Specialist – Water and dated 19 November 2013, be received.

2. That the unconfirmed minutes of the Whangarei Harbour Catchment Group meeting, dated 17 October 2013 be received.

WAIORA NORTHLAND WATER

ITEM: 6

ISSUE: Water Allocation – Dairy Farm Water Takes

ID: A595375

To: Environmental Management Committee, 2 December 2013

From: Susie Osbaldiston, Groundwater Management Specialist

Date: 11 November 2013

Summary The purpose of this report is to update the committee on the issue of Dairy Water Take relating to the water allocation component of the Waiora Northland Water. It concludes with the recommendation that the information be received.

Report Type:	☑	Normal operations	☑	Information	☐	Decision
Purpose:	☐	Infrastructure	☐	Public service	☑	Regulatory function
	☐	Legislative function	☑	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Project Background:
Water is a critical resource for Northland and its economy and as such the Sustainable Water Allocation Project, now part of Waiora Northland Water, was approved through the regional Long Term Plan process in 2009. The aim of the project is to ensure the sustainable management of Northland's water resources by establishing flows, levels and allocation limits that protect the environment and provide users with reasonable reliability of supply. The National Policy Statement for Fresh Water Management (NPSFM) also requires the council to set water allocation limits for all water bodies in Northland. An update of the water allocation project was provided to the Environmental Management Committee on the 9 September 2013.[1] Refer to 04 Update on Dairy Water Takes.doc.

In order to set limits the Council must first understand how much water is being taken and how much water is available in our water bodies. The first stage of the water allocation project was to undertake a water stock take. This included understanding how much water is being taken/allocated by:

- resource consents;
- permitted activities in accordance with rules in the Regional Water and Soil Plan for Northland (RWSP); and
- unauthorised activities.

The following highlights the key issue identified by the water stock take and recommended message to water users.

Key Issues
Under the Resource Management Act 1991 (RMA), water may only be taken and used "as of right" for stock drinking water and domestic purposes (S14). Beyond this, a take requires a resource consent or needs to meet the permitted activity criteria set out in the Regional Water and Soil Plan for Northland (RWSP).

[1] http://www.nrc.govt.nz/Download/?file=/upload/13799/EMA Agenda - 24 September 2013 (V2).pdf

WAIORA NORTHLAND WATER

In many catchments in Northland water can be taken for reasonable domestic, stock drinking and additional water at a rate up to 10 cubic metres per day as a permitted activity (no consent required) provided specific criteria are met and water use information is supplied to the council.

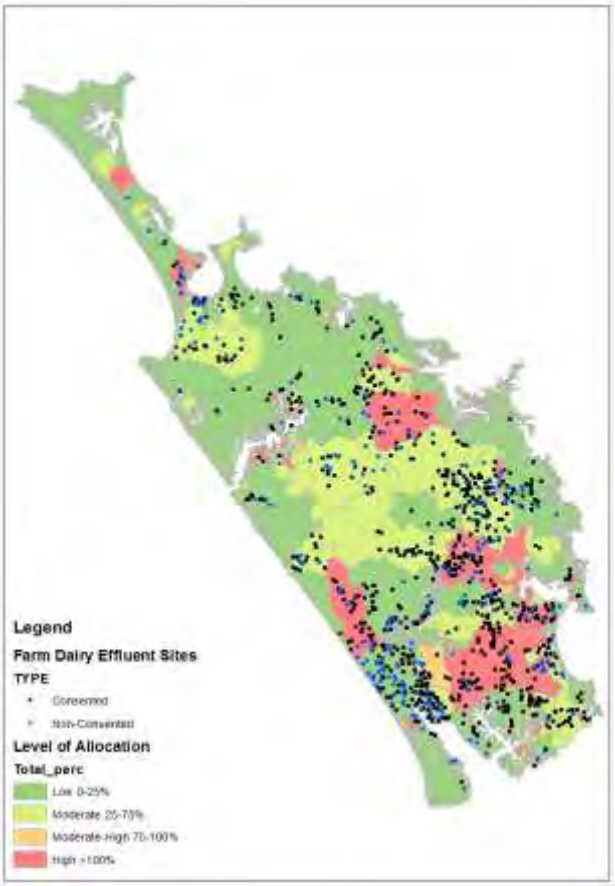
The RWSP rules to take water recognise that Northland has a large number of relatively small catchments, and that groundwater and surface water takes in excess of 10 cubic metres per day can significantly reduce stream flows and water levels and therefore require resource consent. The cumulative effects of such takes are particularly noticeable during dry periods.

The permitted volumes and specific criteria in the RWSP have been set in consultation with the public of Northland to protect instream values. Refer to Regional Water and Soil Plan for Northland[2] for the rules which permit the taking and use of water from bores and surface water in the Northland Region. It is important to note that these rules and criteria are to be reviewed within the next year as part of the RWSP review.

To determine how much water is being taken in accordance with the permitted activity rules, the Council adopted a similar approach to Environment Waikato to estimate potential permitted takes based on land use capability maps and actual stocking rates where available. These estimates were then ground truthed by a small scale water use survey carried out in the Otaika catchment.

The permitted water use calculations and survey indicated the volume of water taken for some properties exceeds permitted activity criteria and these takes do not have consents. The vast majority of these currently unauthorised takes relate to dairy farm water takes for milk cooling and dairy shed washdown. An estimate of water use that has been accepted by the Environment Court for a dairy shed is 70 litres of water per cow per day for milk cooling and shed wash-down. Based on this, dairy farms with an average herd size of 143 cows or more exceed the permitted take volume of 10 cubic metres per day and need a resource consent.

A summary of the total estimated allocation (consented, permitted and non permitted use) is shown in Figure 1.



[2] http://www.nrc.govt.nz/Resource-Library-Summary/Plans-and-Policies/Regional-plans/

Discussions with NRC Farm Dairy Effluent Monitoring Officers indicates that the volume of water abstracted for milk cooling and dairy shed washdown can vary significantly depending on the systems in place. In many cases the farmers do not know how much water they take. However, as a result of increased herd size the majority of water takes for dairy washdown and milk cooling will require consents.

There are currently 993 dairy farms in Northland, the locations are shown in Figure 1. It is estimated that around 850 are likely to require consents under the current regulations.

Inconsistent compliance with permitted take rules has also been raised through the Regional Policy Statement Plan review and the Long Term Plan process. Dairy farmers are also getting messages from Fonterra and Dairy NZ regarding water use and the need for efficiency, metering and compliance with Council requirements. Northland Farmers are now seeking advice from NRC staff on to how secure water supplies essential for their business.

Key Massage to Water Users
The proposed key message is that it is important for water users to secure their supply now. To do this water users need to:

- know how much water they take;
- register this water take information with the Council; and
- if a consents is needed, contact the consent team to discuss information and processing requirements.

The consenting of existing takes that do not meet the permitted activity criteria, and registering permitted use will provide better security of supply for dairy farmers and other users in the long term. A similar approach of registering permitted takes and consent requirements has been undertaken in other regions on a catchment basis with the support of Fonterra and the farming community. This has been undertaken in the Auckland region, and is currently occurring in the Waikato region. The council is discussing the issue with the industry heads in Northland through the Northland Effluent Improvement Project Group.

Where to from here?
A plan to effectively communicate the key message is being prepared in consultation with dairy industry heads.

The plan will ensure that water users are also provided clear and consistent information on what, when, and how consents will be processed.

The proposal is to encourage joint group processing of the consent applications in high allocation catchments. The joint processing will reduce the consenting costs for applicants and ensure efficient and consistent processing. There are 274 dairy farms in the high allocation catchments.

When consent applications are lodged outside high allocation catchments these will be processed on a case by case basis as they are received.

The plan will identify the following information to ensure the consent process is as streamline as possible:

- clear minimum information requirements to be submitted in an application;

- the likely status of the consent process i.e whether a consent would require limited notification; and
- the likely consent processing costs.

Why is it important now?
As previous indicated, the council is now required by the NPSFM to set allocation limits for all water bodies in Northland. Water users need to obtain required consents, particularly in the high allocation areas, as it will be difficult and potentially more costly to legalise takes in these catchments when allocation limits have been set. Once allocation limits are set the council will not be able to grant any consent that exceeds the limits. It is therefore critical for users to secure their water supplies during the process of developing the limits.

Summary
The council needs to provide water users with clear and consistent information. The key message is that it is important for water users to secure their essential water supplies now, to enable to council to set sustainable allocation limits and avoid over allocation in the high allocation catchments.

To do this water users need to:

- know how much water they take;
- register this water take information with the council; and
- if a consents is needed, contact the consents team to discuss information and processing requirements.

A plan is being prepared in consultation with the Northland Effluent Improvement Project Group to deliver this key message and identify information and consent processing requirements. The plan will help the council work with water users to ensure that any required consent process is as streamline and effective as possible.

Legal Compliance and Significance Assessment:
The relevant legislation in relation to this issue is the Local Government Act 2002. The information provided in this report and its recommendations are compliant with that legislation. This issue is considered to be of low significance under council policy because it is in keeping with the Water Allocation Plan in the council's Long Term Plan 2009 and the overarching programme for the National Policy Statement for Freshwater Management implementation adopted in May 2012 as detailed in the 2012-2022 Long Term Plan.

Recommendations:

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1. That the report Update on Dairy Water Takes by Susie Osbaldiston dated 11 November 2013 be received.

2. That further detail on the delivery of the key message be included in a Water Allocation Workshop proposed for the committee next year.

ITEM: 7

ISSUE: Community wastewater treatment plant discharges – current compliance status (updated)

ID: A581222

To: Environmental Management Committee, 2 December 2013

From: Tess Dacre, Monitoring Programme Manager – Water and Wastes

Date: 19 November 2013

Summary The purpose of this report is to give an update on the resource consent compliance status of Northland's 30 community wastewater treatment plants, and the actions being taken to remedy any non-compliance.

Report Type:	☑	Normal operations	☑	Information	☐	Decision
Purpose:	☐	Infrastructure	☐	Public service	☑	Regulatory function
	☑	Legislative function	☑	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Background

This report and the attached table provide a status update on the 30 community wastewater treatment plants (WWTP) operated by the region's three territorial authorities: Far North, Kaipara and Whangarei District Councils (FNDC, KDC and WDC). FNDC has the most with 16 different WWTP across its region. WDC has nine and KDC has five.

FNDC now has only the Taipa and Paihia wastewater treatment plant replacement discharge consents in process. 2013 saw the issue of replacement consents for Ahipara, Rawene and Russell. The Awanui WWTP is in the process of being decommissioned and when this is completed the resource consent will be surrendered. The Kerikeri consent expires in 2015. Recent upgrades by FNDC to a number of treatment plants has seen much improved compliance with water quality conditions of consent: this includes Hihi, Kaeo and Kaitaia. Work is required for Paihia, Kaikohe and Ompononi/Omapere to bring these plants into consistent compliance.

FNDC is subject to one abatement notice which relates to the on-going non-compliance with water quality conditions of its Paihia wastewater treatment plant discharge. The abatement notice compliance date is 31 December 2013. FNDC have indicated that this plant should be fully compliant by June 2014.

KDC and WDC have undertaken a number of improvement projects over the last 12 months to a several plants, including the main Whangarei WWTP, Ruakaka, Kaiwaka and Te Kopuru.

The majority of Northland's community wastewater treatment plants have up-to-date consents and routinely meet their required discharge and water quality standards. Good progress has been made by all three councils to bring all plants into consistent compliance.

WAIORA NORTHLAND WATER

Legal Compliance and significance assessment:
The activities detailed in this report are provided for in the council's 2012-22 Long Term Plan, and as such are in accordance with the council's decision-making process and Sections 76-82 of the Local Government Act 2002.

In relation to section 79 of the Local Government Act 2002, this issue is considered to be of low significance under Council policy because the report does not seek a decision other than that information be received.

Recommendation

1. That the report Community wastewater treatment plant discharges – current compliance status (updated) from Tess Dacre, Monitoring Programme Manager – Water and Wastes, dated 19 November 2013 be received.

Attachment to Item 7

Location/Consent Status	Plant Description	Status & Issues	Update as at November 2013
Ahipara (FNDC) Consent issued 2013, expiry 2033.	• Oxidation pond, surface flow wetland, overland flow to drain. • Discharges to a tributary of Wairoa Stream.	• No major operational issues. • Wetland was partially renovated in February 2013.	• Replacement consent issued mid-September. • Wetland has now been fully de-sludged.
Awanui (FNDC) Consent issued 2005, expiry 2021.	• Small aerated package treatment system and surface flow wetland. • System has UV disinfection. • Discharges to Awanui River.	• Consistently complies with water quality conditions of consent. • Management Plan submitted as per agreed schedule. • Plant to be closed to reduce running costs and wastewater will be pumped to Kaitaia system via a pressurised sewer line. • The new pressure sewer is up and running now.	• The plant is in the process of being decommissioned – when this is completed FNDC will surrender the Awanui RC.
Hihi (FNDC) Consent issued 2011, expiry 2022.	• Extended aeration treatment system with flow equalisation and UV disinfection followed by surface flow wetland. • Discharges to the Hihi Stream.	• There is significant stormwater infiltration to the reticulation system for the treatment plant. However, some improvements have been made in relation to this. Further work is planned to resolve key infiltration issues and then FNDC will re-assess the situation and determine what else needs to be done. • Wastewater treatment plant upgraded with filtration and UV disinfection to comply with consent standards. • Treatment quality now fully compliant with RC requirements.	• Nothing new to report.
Kaeo (FNDC) Consent issued 2007, expiry 2022. Changed consent issued October 2011.	• Settlement and oxidation ponds • Packed bed reactor incorporating vermiculture. • Wetland. • Discharges to the Kaeo River.	• Consent requires 4-log reduction of viral indicators to protect downstream oyster farms. • The system and discharge standards were proposed by FNDC. • Sampling indicates treatment plant achieves a 3 to3.5 log reduction of viral indicators. • FNDC are investigating options which will either involve installing UV at the end of the vermifilter or applying to change the 4-log consent limit.	• Nothing new to report.
Kaikohe (FNDC) Consent issued 2005, expiry 2021. Changed consent issued on 19 April 2011.	• Anaerobic pond, large facultative pond, three surface flow wetlands. • Discharges to a tributary of the Wairoro stream.	• The Kaikohe ponds suffer from blue green algae blooms in summer. • Problems with compliance during low flows (ammoniacal nitrogen exceeds consent limit). • Floating wetlands proposed to improve treatment. • Investigations for suitable treatment solutions are now due to commence following performance data received from Kaeo WWTP upgrade.	• Nothing new to report.
Kaitāia (FNDC) Consent issued 2005, expiry 2021.	• Two ponds plus floating wetland cells. • Discharges to the Awanui River.	• Main issue is the blue green algae and discharge during summer. • Should there be further significant blue green algae discharges, FNDC will be required to cease the discharge to the river, using formal enforcement action if need be. • Upgrades have been carried out and include floating wetlands, baffle curtains and sludge reception. • Upgrade condition requiring installation of a disinfection unit by	• Nothing new to report.

Location/Consent Status	Plant Description	Status & Issues	Update as at November 2013
		August 2008 – this has not been done. However, monitoring results indicate that >5 log reduction in phages is being achieved. • Resource consent for sludge drying beds obtained. • Consent routinely meets all discharge standards. However technically the consent is being breached because the WWTP does not include a "disinfection system". • FNDC will apply to change the consent to resolve the technical non-compliance.	
Kawakawa (FNDC) Consent issued 2012, expiry 2036.	• Aeration tank, a secondary clarifier, a disc filter, UV treatment and then to constructed wetlands. • Discharges to Kawakawa River.	• System working well since upgrade. • Upper Kawakawa shellfish monitoring site for viruses once one of the worst sites now one of the best.	• Nothing new to report.
Kerikeri (FNDC) Consent issued 2005, expiry 2015.	• Aerated treatment system (solids separation, RCBs, and clarifiers). • System has UV unit (operates poorly). • Discharges to the Waitangi forest natural wetland (a tributary of the Kerikeri Inlet).	• Historically, the system has had significant odour problems. • System upgraded a couple of years ago. However ongoing issues with performance of disinfection unit due to poor quality effluent. • New consent for BOI issued (combined Paihia and Kerikeri system). • Intermittent compliance issues are expected to be resolved as part of the solutions proposed under the Bay of Islands project, soon to be progressed through public consultation. • Community liaison meeting outstanding. However, FNDC is not planning to carry out community liaison meeting given the extensive consultation that was carried out in respect of the management of Kerikeri wastewater as part of the 2014/2015 annual plan. • FNDC has decided to extend its reticulated sewerage network in the town after conducting a high-profile community consultation exercise about sewerage options in July. It has opted for a modular sewerage scheme to meet current needs, but also to respond to town growth as it occurs.	• Nothing new to report.
Paihia (FNDC) Consent issued 2004, expiry 2014.	• Two pond system. • Discharges to the Waitangi forest natural wetland (a tributary of the Kerikeri Inlet).	• Resource consent granted for BOI scheme in mid-2012. • Current system in significant non-compliance with consent conditions (ammoniacal nitrogen frequently exceeds consent limits) and in need of upgrade regardless of progress on new system. • Upgrade to meet ammonia conditions outstanding. • An abatement notice was issued in November 2012. Compliance date now 31 December 2013. • FNDC unlikely to give effect to the BOI resource consent.	• Replacement application has been received. • FNDC have stated that they will upgrade the system to meet ammonia standards by June 2014 and have provided options report.
Kohukohu (FNDC) Consent issued 2002, expiry 2016.	• Septic tanks followed by oxidation pond and surface flow wetland.	• Consistently complies with water quality conditions of consent. • No outstanding issues.	• Nothing new to report.

Location/Consent Status	Plant Description	Status & Issues	Update as at November 2013
	• Discharges to Hokianga Harbour.		
Opononi and Omāpere (FNDC) Consent issued 2009, expiry 2019.	• Primary screen, aerated pond, facultative pond, surface flow wetland. • Discharges to Hokianga Harbour (on outgoing tide).	• Stormwater infiltration is an issue. • At times the plant discharges outside of the tidal flow condition to prevent overtopping of the wetland. • Management plan received as per agreed schedule. • FNDC are assessing options for refurbishing the wetlands. Access for sludge removal is a constraint. An affordable solution for desludging and replanting the wetland is being sought. Additional funding has been targeted in the Annual Plan although FNDC is yet to make a decision on how best to cost effectively refurbish the wetlands. • Issue complying with ecoli condition of consent. • FNDC intends to carry out a district wide investigation of inflow & infiltration and will include Opononi as part of a prioritised program. • Improvements in hydraulic retention and discharge pumping have been made to alleviate necessity to discharge outside of consented timeframes.	• Wetlands to be refurbished over summer.
Rangiputa (FNDC) Consent issued 2008, expiry 2032.	• Oxidation ponds. • Discharges to ground via the base of a third pond.	• No current known issues with this treatment system.	• Nothing new to report.
Rāwene (FNDC) consent issued May 2013, expiry 2023.	• Anaerobic pond, facultative pond and surface flow wetland. • Discharges to the Omanaia River.	• No current performance issues with this treatment system.	• Nothing new to report.
Russell (FNDC) Consent issued September 2013, expiry 2024.	• Aerated treatment system, surface flow wetland, filtration and UV disinfection. • Discharges to deep bores.	• No significant issues at this point. • Consistently complies with water quality conditions of consent.	• Nothing new to report.
Taipā (East Coast Bays) (FNDC) Consent expired 2008. Replacement consent in process – on hold to allow assessment of land disposal option. Significant opposition to the current operation of the WWTP.	• Facultative pond and aerated pond followed by surface flow wetland (4 cells). • Discharges to a tributary of the Parapara Stream.	• Problems with blue green algae in the discharge at times. • High ammonia and suspended solids from the marsh discharge at times. • Currently investigating land application options as part of the consent renewal process. • Application is still in process. FNDC have been granted an extension to pursue the land application option.	• Nothing new to report.

Location/Consent Status	Plant Description	Status & Issues	Update as at November 2013
Whatuwhiwhi (FNDC) Consent issued 2007, expiry 2025.	• Two aerated ponds equipped with biological growth media. • Discharges to natural wetland which extends down to Karikari Bay.	• Consistently does not comply with faecal coliform discharge condition of consent. Discharge standards were proposed by FNDC. NRC does not consider there to be adverse effects on the receiving environment. • Management plan received as per agreed schedule. • FNDC investigating options for amending the resource consent.	• Nothing new to report.
Dargaville (KDC) Consent issued 2007, expiry 2022.	• Facultative pond and wetland/maturation pond. • Discharges to the Northern Wairoa River.	• Non-compliance with requirement to investigate stormwater inflow and infiltration. • Consistently complies with water quality conditions of consent.	• The Montgomery Avenue reticulation line has been replaced. This has been the site of numerous overflows/failures in the past.
Kaiwaka (KDC) Consent issued 2010, expiry 2022.	• Aerated pond and constructed wetland. • Discharge to Pukekaroro Stream	• Issues with complying with water quality conditions of consent.	• De-sludging of the oxidation pond has been completed. • Hoping to see improvements in water quality now that the pond has been renovated. • KDC often late with submission of reports and monitoring data.
Maungaturoto (KDC) Consent issued 2008, expiry 2032.	• Aerated pond, membrane filtration plant, storage pond, discharge to rock filter. • Discharges to the Wairau River.	• No current issues with plant operation.	• KDC often late with submission of reports and monitoring data.
Mangawhai – Ecocare (KDC) Consent issued 2007, expiry 2042.	• Screening, CASS tanks, chlorination and then pumped to storage dam. • Irrigated to farmland.	• Consistently complies with water quality conditions of RC.	• KDC are investigating alternative wastewater disposal options.
Te Kopuru (KDC) Consent issued 2010, expiry 2044.	• Oxidation ponds and constructed wetland. • Discharges to Northern Wairoa River.	• Still non-compliant for suspended solids and Ecoli.	• De-sludging of oxidation pond has been completed. • Some improvements in discharge water quality have been seen.
Hikurangi (WDC) Consent issued 2007 (re-issued 2010), expiry 2025.	• Settling pond, aerated pond, wetland and membrane filter for disinfection. • Discharges to Mangawhero str.	• Plant has been non-compliant with respect to discharge volumes of treated wastewater for the 12 months to 31 March 2012. • Change to the RC recommended.	• Works to upgrade wetland planned for summer 2014 – tender process has commenced. • Plant has been operating well.
Ngunguru (WDC) Consent issued 2010, expiry 2035.	• Aerated pond, settling pond, constructed wetland and UV unit.	• Telemetry working but alarm system still requires further work. • Phone line installed in August to address alarm issue.	• Nothing new to report.

Location/Consent Status	Plant Description	Status & Issues	Update as at November 2013
	• Discharges to tributary of the Waitoi creek.		
Oakura (WDC) Consent issued 2006, expiry 2025.	• Screening, sedimentation tanks, biological contactor unit, disc filter and UV unit. • Discharges to forest land via dripper lines.	• No issues with operation of plant.	• Nothing new to report.
Portland (WDC) Consent issued 2004, expiry 2024.	• Oxidation pond and constructed wetland. • Discharges to Tokitoki Creek.	• Consistently complies with water quality conditions of consent.	• Nothing new to report.
Ruakaka (WDC) Consent issued 2008, expires 2018.	• Aerated pond and constructed wetlands. • Discharges to Bream Bay sand dunes.	• 3 bores (out of 20) are showing high nitrogen levels. • Further investigation required to determine possible causes for elevated N levels. Elevated N possibly not related to WDC discharge. • Still operating under the existing consent. • 470 Ruakaka south properties plus Ruakaka campground now connected to the treatment system. • Irrigation area installed on Rama Road block.	• Irrigation area on Rama Road has now been fully commissioned. • Maintenance works have been carried out on the wetlands. • Investigations into the high nitrogen levels are on-going. • WDC working to manage increased inflows into the plant. They are on-track to comply with the annual volume limits in the RC.
Tutukaka (WDC) Consent issued 2004, expiry 2024	• Screening, primary treatment, denitrification recirculation tanks, sand filters, UV unit and constructed wetland. • Discharges to a tributary of Tutukaka Harbour.	• Have had issues with the reliability of alarms. • UV data now being received into SCADA and reports available. • Phone line installed to improve reliability of coms and reduce operating costs.	• Plant is operating well.
Waiōtira (WDC) Consent issued 2008, expiry 2030.	• Septic tank and constructed wetland. • Discharges to Waiōtira Stream.	• Consistently complies with water quality conditions of consent.	• Nothing new to report.
Waipū (WDC) Consent issued 2007, expiry 2015.	• Aerated pond, constructed wetland with discharge to rapid in-fill basins. • Discharges to the Bream Bay coast via subsurface flow.	• Consistently complies with water quality conditions of consent.	• Nothing new to report.
Whāngārei Main WWTP (WDC) Consent issued 2004,	• Screening, primary clarifiers, 1st and 2nd stage trickling filters, activated sludge basin	• With the upgrade of the Okara Park Pump Station it is recognised that the extra volume has resulted in the need to upgrade the main WWTP. The upgrade will occur in three stages:	• Plan to upgrade Kioreroa Road wetland in summer 2014 and direct all flows to it

Location/Consent Status	Plant Description	Status & Issues	Update as at November 2013
expiry 2022. Change to consent applied for – currently in process.	and clarifiers, effluent filter, UV unit and normal to high flows go through wetlands. • Discharges to Limeburners Creek.	Stage 1: Upgrade existing UV channel to treat 50ML/d (currently 30 ML/d) – completed. Stage 2: Install new UV channel in UV building with capacity to treat a further 50 ML/d – completed. Stage 3: Install new separate UV system to treat balance of influent that can't be processed by stage 1 and 2 units. • Stage 3 - UV works completed and operated well in first storm event.	once upgrade complete – tender process has commenced. • Diversion to wetland will need the consent to be reviewed. • WDC are currently installing a new line from the UV unit to the wetland. • The last quarter saw elevated suspended solids and BOD in the UV discharge due to operational adjustments. This has now been rectified.
Hātea Pump Station (WDC) Consent issued July 2013.	• Storage tank, UV unit and chemical treatment.	• Newly constructed pump station with storage and treatment has been installed. • Plant commissioned in July - performed well.	• WDC currently investigating options to manage inflows and outflows to and from the station.

ITEM: 8

ISSUE: Northland – Potential for Primary Industry Growth

ID: A597688

To: Environmental Management Committee, 2 December 2013

From: Dean Evans, Land Programme Manager

Date: 21 November 2013

Summary The purpose of this report is to update the Environmental Management Committee on the Ministry of Primary Industries, Northland – Potential for Primary Industry Growth media and document release and to highlight upcoming briefing opportunities.

Report Type:	☑	Normal operations	☑	Information	☐	Decision
Purpose:	☐	Infrastructure	☑	Public service	☐	Regulatory function
	☐	Legislative function	☑	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Background

Nathan Guy, Minister of Primary Industries in a recent media release[1] launched a new programme to "help unlock the potential for primary industry growth in Northland".

> *"This is the start of a wider programme by the Ministry for Primary Industries to work in partnership with regions to help them further develop industries like agriculture, horticulture, forestry, and aquaculture."*

A booklet 'Northland, Potential for primary industry growth' was also released by the Ministry and is attached for reference. As stated in this publication, three growth opportunities in Northland have been identified:

1. Developing a new fin fish industry in Northland - it has the potential to become a $300M per year industry employing 700 people by 2030;

2. Optimising 116,000 hectares of Māori freehold land over the next 10 years;

3. Increasing the productivity of farms in the region by moving the productions of the bottom 50% of Northland farmers to the median. This would bring an estimated additional value of $50M per year to the region.

Partnerships with regions

The government recognises a partnership with the local community is needed. The programme will next focus on formalising the Ministry's partnership with the Northland Economic Advisory Group (NEAG) and to continue to engage and develop relationships with key partners to identify common objectives for regional primary sector growth.

[1] http://www.beehive.govt.nz/release/new-programme-unlock-northland%E2%80%99s-primary-industry-potential

Where to from here
A meeting between MPI and council CEO Malcolm Nicolson took place on 13 November to allow a better understanding of their communication strategy and to provide an update on previous and planned events.

As a consequence, a further meeting has been organised for 12 December (10am) to allow MPI staff to brief available senior staff, councillors and committee representatives on this initiative, and to include a presentation on the 'Maori Agribusiness Programme'.

Another briefing by MPI is being organised for early in the New Year to formally brief the council.

Council involvement
The likely areas of council involvement in this initiative are working with iwi and relevant industry organisations to implement good management practices on Maori land; opportunities include onsite advice and/or holding events based on:

- Soil health
- Pasture management
- Land use options (incl central government scheme(s) advice)
- Water quality improvement
- Soil conservation
- Biodiversity
- Biosecurity
- Regional plan obligations
- Connecting with relevant people/organisations
- Funding assistance

Additionally, Northland Inc and council have been working on understanding the available options for water storage across rural Northland; with the aim of gaining greater economic benefit through increased productivity on rural land. Northland Inc. is currently completing a proposal for council to submit to MPI, seeking funding from the Irrigation Acceleration Fund to undertake this work.

Funding through the Irrigation Acceleration Fund (IAF)[2] is intended to help realise the potential for irrigated agriculture to contribute to sustainable economic growth throughout New Zealand.

Legal compliance and significance assessment:
The activities detailed in this report are provided for in the council's 2012-2022 Long Term Plan and as such are in accordance with the council's decision-making process and sections 76-82 of the Local Government Act 2002.

In relation to section 79 of the Local Government Act 2002, this issue is considered to be of low significance under Council policy because the report does not seek a decision other than that information be received.

Recommendation:

1. That the report Northland, Potential for Primary Industry Growth by Dean Evans, Land Programme Manager and dated 21 November 2013, be received.

[2] http://www.mpi.govt.nz/environment-natural-resources/funding-programmes/irrigation-acceleration-fund

ITEM: 9
Page 1 of 7

ISSUE: Environment Fund – Land Management and Biosecurity Projects Funding Update

ID: A594947

To: Environmental Management Committee, 2 December 2013

From: Bruce Howse, Land/Rivers Senior Programme Manager, and Don Mckenzie, Biosecurity Senior Programme Manager

Date: 25 November 2013

Summary The purpose of this report is to provide an update on funding of the land management and biosecurity projects funded via the Environment Fund.

Report Type:	☑	Normal operations	☑	Information	☐	Decision
Purpose:	☐	Infrastructure	☑	Public service	☐	Regulatory function
	☐	Legislative function	☑	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Background

The Northland Regional Council Environment Fund has provided funding assistance to help people enhance and protect Northland's natural environment since 1996. In recent years the fund has had a budget of $485,000, focused on supporting land management and biodiversity initiatives (refer Attachment 1).

Demand for the Environment Fund has been increasing, in response to the Farm Water Quality Improvement Plan (FWQIP) programme and implementation of the Waiora Northland Water (NPS Freshwater Priority Catchments/Lakes and water quality/management improvement) programme. As reported to the July 2013 Environmental Management Committee meeting, applications for funding totalling more than the available funding of $485,000 had been received by July 2013.

In August 2013 Council resolved to adopt changes to the allocation and funding subsidies of the Environment Fund. These changes included:

- Increasing funding by up to $400,000 in the 2013-14 financial year, funded from the NRC Land Management Reserve. Funding to be transferred from the Land Management Reserve on a progressive basis throughout the year, with approved fund applications and budget status updates provided to the Environmental Management Committee, with the committee approving the transfer from the Land Management Reserve as required throughout the year.
- Revised funding subsidy criteria (refer Attachment 1).

This report provides an update on the funding allocations to date.

Environment Fund Allocation Update

The approved October 2013 Environment Fund funding applications for land management projects are provided in Attachment 2.

The November 2013 Environment Fund funding applications for land management projects are provided in Attachment 3. These will be considered via the delegated approval process, which requires approval by a Councillor and the Land/Rivers Senior Programme Manager.

The November 2013 Environment Fund funding applications for biosecurity projects are provided in Attachment 4. These will be considered via the delegated approval process, which requires approval by a Councillor and the Biosecurity Senior Programme Manager.

The following table provides a summary of the 2013/14 funding allocations to date (costs) and those proposed for approval in November 2013, against the approved budget (revenue).

	Funds	Allocations
Costs		
2012/13 over allocation - repayment to reserve		$ 3,641
Funding ommitments carried forward from 12/13 - Land		$ 6,354
Funding Applications Land - August 2013		$ 385,153
Funding Applications Land - October 2013 (Attachment 2)		$ 45,971
Funding Applications Land - November 2013 (Attachment 3)		$ 87,067
Funding Applications Biosecurity - August 2013		$ 75,000
Funding Applications Biosecurity - November 2013 (Attachment 4)		$ 115,960
Total Costs		$ 715,505
Revenue		
Environment Fund - Land	$ 410,000	
Environment Fund - Biosecurity	$ 75,000	
Additional Funding from Land Mgmt. Reserve - Land	$ 355,000	
Additional Funding from Land Mgmt. Reserve - Biosecurity	$ 45,000	
Total Revenue	$ 885,000	
Net surplus/(deficit)		$ 169,495

If all the November 2013 applications are approved for funding, a total of $230,505 of funding will be required to be transferred from the land management reserve to fund the applications (comprised of $114,545 for land management fund applications and $115,960 for biosecurity fund applications).

It is noted that the quantum of biosecurity applications for funding in November 2013 is $115,960, which is $70,960 more than the earlier estimate of $45,000 (out of the total approved additional budget of up to $400,000).

Of the biosecurity applications proposed for funding, $35,000 of the funding is proposed for plant and animal pest management works in the Kai Iwi lakes reserve, a priority water body and catchment under the Waiora Northland Water programme.

Should the committee support this, a total of $169,496 of funding would remain for other eligible projects that arise during the remainder of the 2013/14 year.

Legal compliance and significance assessment:
The activities detailed in this report are provided for in the council's 2012-2022 Long Term Plan and as such are in accordance with the council's decision-making process and sections 76-82 of the Local Government Act 2002.

In relation to section 79 of the Local Government Act 2002, this issue is considered to be of low significance under Council policy because the report does not seek a decision other than that information be received.

Recommendation:

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1. That the report Environment Fund – Land Management & Biosecurity Projects Funding Update by Bruce Howse, Land/Rivers Senior Programme Manager, and Don McKenzie, Biosecurity Senior Programme Manager and dated 25 November 2013, be received.

2. That $230,505 of funding is transferred from the land management reserve to fund the additional expenditure of $114,545 for land management fund applications and $115,960 for biosecurity fund applications.

Attachment 1 - Council approved changes to allocation and funding subsidies.

	Farm properties - water quality improvement and biodiversity[1]	Top wetlands	NPS priority catchments/ lakes and community groups[2]	Soil conservation - poplar poles and willows	CoastCare	Biosecurity[3]	Total
Proposed budget lines (funding of up to)	$590,000	$70,000	$50,000	$25,000	$30,000	$120,000	**$885,000**
Recommended subsidy up to	Dairy farm waterway fencing 30%; funding range $1000 to $5000. Dry stock 50%; funding range $1000 to $7000.	50%	Up to 100%	50% provision of materials (i.e. poles provided at $4 each)	100% provision of materials	100% provision of materials	
Land owner contribution	Balance of cost of works or labour and/or materials			Plant material purchased at 50% cost	Labour	Labour	

[1] Focused on supporting water quality and biodiversity initiatives on farm properties, supporting the Farm Water Quality Improvement Plan programme.
[2] Supporting water quality initiatives within NPS Freshwater Priority Catchments/Lakes and for supporting other community-group based land management initiatives.
[3] Funding to ensure that qualifying pest control projects outside the Community Pest Control Area programme are assisted. Recommend that this funding is established under a separate “Biosecurity Fund” that operates alongside the Environment Fund.

Attachment 2 – Land management funding approvals for October 2013.

Delegated Authority Recommendations - October 2013								
EFD No.	FWQIP	NRC Staff Advisor	Applicant	Farm Type	Funding Stream	District	Brief Project Description	Amount Recommended
APP.036361	N/A	DEJ	Robert Desmond Neeley	Beef	Water Quality	Whangarei	Fencing project	$ 1,232.00
APP.036322	5	ASE	Howard Dixon	Beef	Biodiversity	Far North	Fencing project	$ 1,700.00
APP.036355	9	ASE	Kerry Scott Ludbrook	Riparian	Biodiversity	Far North	Fencing project	$ 1,000.00
APP.151334.02.01	47	ASE	Stuart and Francisca Hambrook	Dairy	Biodiversity	Far North	Fencing project	$ 3,000.00
APP.151907.03.01	55	ASE	Campbell Farms Maromaku Ltd (Ruapekapeka) - Carolyn Wilkinson	Dairy	Water Quality	Far North	Fencing project	$ 4,250.00
APP.151959.01.01	64	DEJ	Roger and Cushla Milina (Run-off)	Dairy	Water Quality	Whangarei	Fencing project	$ 4,132.00
APP.151927.03.01	73	DUK	Murphy Mahanga	Beef	Water Quality	Whangarei	Fencing project	$ 1,606.00
APP.151944.01.01	92	ASE	Waikarere Gregory	Drystock	Water Quality	Far North	Fencing project	$ 1,770.00
APP.036164	143	ROM	Lea Rig (Whatmough) - Opuawhanga (Julls)	Dairy	Water Quality	Whangarei	Fencing project	$ 5,000.00
APP.151643.02.01	147	DEJ	Whananaki Farms Limited	Drystock	Water Quality	Whangarei	Fencing project	$ 1,814.00
APP.036167	148	ROM	DB Douglas Ltd (Hearing Bone) Titoki	Dairy	Water Quality	Whangarei	Fencing project	$ 2,840.00
APP.036339	151	ASE	Matthew Jordan	Beef & Sheep	Biodiversity	Far North	Wetland fencing	$ 1,340.00
APP.036215.02	168	ASE	Oruaiti Farms Limited (Taupo Bay)	Drystock	Water Quality	Far North	Fencing project	$ 4,950.00
APP.036358	183	DEJ	Geoffrey & Joanne Crawford	Dairy	Water Quality	Whangarei	Fencing project	$ 3,337.00
APP.036373	188	PEW	Summit Northern Plantation Company	Lake	Biodiversity	Far North	Wetland planting	$ 8,000.00
					Total			$ 45,971.00

Attachment 3 – Proposed land management funding approvals for November 2013.

Delegated Authority Recommendations - November 2013									
EFD No.	**FWQIP**	**NRC Staff Advisor**	**Applicant**	**Farm Type**	**Funding Stream**	**District**	**Brief Project Description**	**Amount Recommended**	**Funding Stream**
APP.036435	10	ROM	Dennis Hewitt	Drystock	Water Quality	Whangarei	Fencing project	$ 1,320.00	
APP.036285	24	ROM	Gumtown Holdings Ltd	Drystock	Water Quality	Whangarei	Fencing project	$ 5,000.00	Priority Catchment (Mangere)
APP.036165	144	ROM	Lea Rig Farms Ltd	Dairy	Water Quality	Whangarei	Fencing project	$ 5,000.00	
APP.151814.02.01	163	ROM	Simon John Hayward	Drystock	Water Quality	Kaipara	Fencing project	$ 3,425.00	
APP.036437	155	ASE	Haumapu Family Trust	Dairy/Drystock	Water Quality	Far North	Fencing project	$ 4,725.00	Priority Catchment (Doubtless Bay)
APP.036413	199	ASE	Jim & Kathy Menary Farming Trust	Drystock	Water Quality	Far North	Fencing project	$ 3,500.00	Priority Catchment (Waitangi)
APP.036427	201	ASE	River Round Farms Limited	Dairy	Coastal	Far North	Fencing project	$ 4,689.00	
APP.036453	202	ASE	Tyrone Newson	Drystock	Water Quality	Far North	Fencing project	$ 3,180.00	
APP.036389	190	LOD	Valley Run Farms	Drystock	Water Quality	Whangarei	Fencing project	$ 6,815.50	
APP.151962.01.01	67	DEJ	Shane and Wendy Tobin	Drystock	Water Quality	Far North	Fencing project	$ 1,500.00	
APP.036415	91	DEJ	Murray Byles	Dairy	Water Quality	Whangarei	Fencing project	$ 3,693.00	Priority Catchment (Whangarei Harbour)
APP.036395	126	DEJ	Katrin Seumehnicht & Ricard Caulfield	Drystock	Water Quality	Whangarei	Fencing project	$ 3,250.00	
APP.036394	192	DEJ	Rhys Williams (Mid Northern Farms)	Dairy	Water Quality	Whangarei	Fencing project	$ 3,725.00	
APP.036396	193	DEJ	Keith & Sharon MacLeod	Drystock	Water Quality	Whangarei	Fencing & planting project	$ 1,410.00	
APP.036397	194	DEJ	Ross Killen	Drystock	Water Quality	Whangarei	Fencing & Planting Project	$ 2,517.00	
APP.036403	198	DEJ	Hugh Rose	Drystock	Water Quality	Whangarei	Fencing project	$ 4,714.00	
APP.036447	43	DUK	Waiaua Bay Farm Limited	Drystock	Water Quality	Far North	Fencing project	$ 5,337.60	
APP.036369	90	DUK	Simon Couper	Dairy Grazing	Water Quality	Whangarei	Fencing project	$ 3,531.00	
APP.036367.02	122	DUK	Lawrence (Murray Gravatt)	Dairy Grazing	Water Quality	Far North	Fencing project	$ 3,570.00	Priority Catchment (Waitangi)
APP.036363	187	DUK	Glenrob Farms (Murray Wright)	Drystock	Water Quality	Far North	Fencing project	$ 5,620.00	
APP.036442	186	KWE	Hugh Jarvis	Drystock	Water Quality	Kaipara	Fencing project	$ 1,145.00	
APP.036443	197	KWE	Clim Henrikes Lammers	Dairy	Water quality	Whangarei	Fencing project	$ 5,000.00	
APP.036438	25	BRG	Grant Henderson	Drystock	Water Quality	Kaipara	Fencing project	$ 4,400.00	
							Total	**$ 87,067.10**	

Attachment 4 – Proposed Biosecurity funding approvals for November 2013.

Group	*Hectares*	*Benefit*	*Target pests*	*Cost*
Kaimamaku Landcare group	50	native wildlife and forest protection	feral cats, mustelids, rodents, possums	$3,000
Forrest Property- Pouto	460	estuarine forest- coastal and wader birds	mustelids, feral cats, rats, possums	$1,000
Burke property adjoining Trounson Park	200	kiwi protection Pasture and forest	rabbits, feral cats, mustelids, possums, rodents	$1,000
Ngawha properties	190	wildlife restoration within regenerating native forest	feral cat, mustelid, possum, rodent	$8,130
Wekaweka Landcare Group	500	kiwi restoration across forest/pasture	feral cats, mustelids, possums, rodents.	$6,300
John Elliot-Cape Brett-eastern coastal forest	700	Pohutukawa, coastal vegetation, native birds	feral cats, mustelids, rodent, possums	$9500
Cullen Road bush restoration	200	forest restoration	feral cats, mustelids, rodent, possums	$2000
Paul Asquith (Moturoa Island Residents)	152	pohutukawa, native forest, coastal seabirds,	feral cats, mustelids, rodents	$1,920
Stella Clyde, Whakapirau forest restoration	10	bush pasture	feral cats, mustelids, rodent, possums	$1,000
Te Roroa farm and forest protection	245	native forest, weed prevention	wild ginger and other forest invaders	$11,830
Kai iwi lakes-pest and weeds	10	forest and water health	wattle, and other forest weeds stoats, possums, feral cats	$15,000
Pest monitoring kai iwi	10	aquatic survey	pest fish and submerged aquatic weeds	$20,000
Te Roroa Development Co	38	native forest restoration	Wild ginger, wilding pines, pampas	$23,220
Hokianga Ginger control group	40	native forest	Wild ginger and forest invaders	$5,000
Parikura Bay Rawhiti	20	native forest protection	pampas, elaeagnus	$7,060
			Total	**$115, 960**

ITEM: 10

ISSUE: CoastCare Update

ID: A597013

To: Environmental Committee Meeting, 2 December 2013

From: Laura Shaft, CoastCare Co-ordinator

Date: 18 November 2013

Summary The purpose of this report is to provide an update on the CoastCare Northland programme. It concludes with the recommendation that on-going support for the work programme as described.

Report Type:	☑	Normal operations	☐	Information	☐	Decision
Purpose:	☐	Infrastructure	☐	Public service	☐	Regulatory function
	☐	Legislative function	☐	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☑	Moderate	☐	Low

Background:
The Northland Regional Council CoastCare programme was set up in 2005 to help protect and restore Northland's coastal sand dunes by supporting community based CoastCare groups to undertake dune restoration. The programme involves co-operation with other agencies including the Department of Conservation and district councils.

Discussion:
Work undertaken by CoastCare groups
Dune restoration and protection activities are undertaken by CoastCare groups to help restore natural defences against coastal hazards as well as the biodiversity values of coastal areas. This work includes planting, provision of access ways, fencing, signage, pest control and weed management.

The voluntary labour of CoastCare groups is supported by the provision of plants and other materials through the NRC Environment Fund. Some projects also receive financial assistance from other organisations, particularly the district councils. The majority of CoastCare sites are located on district council reserves.

Dune planting
The key species for planting are the native sand-binders spinifex (*Spinifex sericeus*) and pingao (*Ficinia spiralis*). These plants play a crucial role in the natural cycle of dune erosion and build-up, helping the dunes to recover more quickly from erosion events.

Backdune species such as wiwi (*Ficina nodosa*) and pohuehue (*Muehlenbeckia complexa*) can be planted landward of the spinifex and pingao as they provide a useful barrier between the foredune plants and the exotic grasses behind.

In the 2013 planting season 9,000 spinifex, 2,500 pingao and 320 back dune plants were provided to groups for planting at 17 sites around Northland's coast.

Monitoring of dune restoration projects
In contrast to restoration initiatives in many other ecosystems, there are currently no guidelines on how to monitor the success of community dune restoration programmes. Work is currently underway to develop factsheets and kits to assist Northland CoastCare groups to more effectively monitor the performance of their dune restoration projects by describing and recording changes over time in a consistent and repeatable way.

Structured, community based monitoring of dune restoration projects will enable groups to gain a better understanding of the health of their dunes and how they function. It will also help them identify threats to the natural function of the dunes and their restoration efforts, such as invasion of aggressive weeds, human disturbance or pest animals.

The monitoring guidelines and kits are currently being trialled with a small number of CoastCare groups, the main one of which is Friends of Rarawa in the Far North. The plan is to expand this out to all CoastCare groups in 2014. The guidelines are designed so that groups can choose the level of monitoring that they are comfortable with whilst ensuring that the key information is captured.

Issues facing CoastCare groups and actions taken to reduce these
There are a number of issues which can affect CoastCare dune restoration projects. These include:

- **Insufficient space allowed for effective dune restoration** – It is important to understand the amount of space required for successful dune restoration. This will vary from site to site. If insufficient set back is allowed for dune restoration, the ability of the dune to recover from storm events will be impaired. Initial encroachment into a kikuyu-covered reserve by reshaping in order to plant native sand-binders can actually mean that more of the reserve is saved in the long term, rather than on-going erosion cutting back into it. In some cases it is not viable to undertake dune restoration in the space currently available.

- **Vehicle use** – Most west coast CoastCare groups were set up to address dune damage caused by vehicles. The key tools used to reduce vehicle damage are education, fencing and signage. The Northland Safe Beach Driving programme led by NRC has been running since 2006 to improve beach driving behaviour and advocate for development of bylaws to improve regulation of beach driving.

- **Invasion of exotic plants** – Control of pest plants on foredunes is a major issue for dune restoration projects, particularly invasive exotic grasses outcompeting native sand binding species and compromising natural dune form and function. Of particular concern is the potential for re-invasion of weeds following restoration of foredunes which has been an issue at a number of sites including Waipu Cove and Tapeka. In order to address this, a trial of weed control methods was undertaken and the results of this used to produce a factsheet on dune weed control.

Education and advocacy
A key aim of the CoastCare programme is to improve awareness and knowledge of the importance of coastal dunes, threats to their functioning, and how their integrity can be restored. This aim is achieved by a number of measures:

- Provision of advice and support to CoastCare groups as required;
- Answering enquiries from members of the public, NRC, and other agency staff about dune restoration;
- Holding twice yearly inter-agency CoastCare meetings to update other agency staff on CoastCare activities around the region and current research related to dune restoration.
- Publication of factsheets on dune restoration.
- Two issues per year of the CoastCare newsletter published and distributed to CoastCare group members, consultants, agency staff, and others on the CoastCare mailing list and made available for download from the NRC website;
- Maintenance of the NRC CoastCare Facebook site for sharing information about CoastCare Northland, including events such as planting days and workshops - www.facebook.com/CoastCareNorthland. This links to /from the CoastCare section of the NRC website.

Legal Compliance and Significance Assessment:
The activities detailed in this report are provided for in the land and biodiversity activities as described in the council's Long Term Plan, and as such are in accordance with the council's decision making process and sections 76-82 of the Local Government Act 2002.

This matter is considered to be of low significance in terms of council's significance policy as no decision is required, other than to receive the item.

Recommendation:

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1. That the report CoastCare Update by Laura Shaft, CoastCare Co-ordinator dated 18 November 2013, be received.

ITEM: 11

ISSUE: **Recreational Swimming Water Quality Programme**

ID: A561430

To: Environmental Management Committee, 2 December 2013

From: Jean-Charles Perquin, Environmental Monitoring Officer – State of the Environment and Compliance

Date: 24 September 2013

Summary The purpose of this report is to summarise the results from the 2012-13 recreational swimming water quality programme and to outline the proposed strategy for 2013-14. The report concludes with the recommendation that the council continue to support the programme as an essential programme for informing the public about water quality and recreational bathing sites, and as the best way forward for investigating water quality issues at these sites.

Report Type:	☑	Normal operations	☑	Information	☐	Decision
Purpose:	☐	Infrastructure	☑	Public service	☐	Regulatory function
	☐	Legislative function	☑	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Report:

Background to recreational swimming water quality programme
The recreational swimming water quality programme is a joint project, administered by the Northland Regional Council (NRC), in partnership with the Northland District Health Board (DHB), the Far North District Council (FNDC), Whangarei District Council (WDC) and Kaipara District Council (KDC). The aim of the programme is to provide information on water quality at popular freshwater and coastal swimming sites in Northland, to allow the public to make informed decisions about where to swim. Once swimming sites with water quality issues are identified the regional and district councils identify the source of contamination, and together work towards improving water quality at these sites where possible.

Summary of results from 2012-13
From November 2012 to February/March 2013, a total of 12 freshwater and 47 coastal sites were monitored through the recreational swimming water quality programme.

Action and alert levels are determined using the Ministry for the Environment (MfE) and Ministry of Health (MoH) guidelines for coastal and freshwater swimming water quality. Enterococci (Ent.) bacteria are quantified for coastal sites and Escherichia coli (E. Coli) bacteria for freshwater sites. Guidelines are presented in Table 1.

Table 1: MfE, MoH guidelines for coastal and freshwater swimming water quality

	Freshwater	Coastal
Acceptable level (suitable for swimming)	*E. Coli* ≤260/100mL	*Ent.* ≤140/100mL
Alert level (potentially unsuitable for swimming)	260/100mL≤ *E. Coli* ≤550/100mL	140/100mL≤ *Ent.* ≤280/100mL
Action level (unsuitable for swimming)	*E. Coli*>550/100mL	*Ent.* >280/100mL

In comparison to guidelines, 29 coastal sites met the suitable for swimming criteria 100% of the time in 2012-13. A further 13 were suitable for swimming on all but one occasion, and five were suitable for swimming on all but two occasions.

In 2012-13, four freshwater sites met the suitable for swimming criteria 100% of the time, and six sites were suitable for swimming on all but two sampling occasions. Two freshwater sites were classified as unsuitable for swimming on more than two occasions during the season. In total, there were between 11 to 17 sampling occasions for each site during the season. Results for both coastal (Table 2 and Figure 1) and freshwater (Table 3 and Figure 2) sites are presented below.

Coastal Sites

Table 2: Annual coastal grades compared to national guidelines

Category	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
95-100% samples <280 *Ent.*/100mL	27	21	45	22	26	29
90-95% samples <280 *Ent.*/100mL	13	8	13	21	16	13
75-90% samples <280 *Ent.*/100mL	4	12	5	16	4	5
<75% samples <280 *Ent.*/100mL	1	2	0	2	2	0
Total number of sites	**45**	**43**	**63**	**61**	**48**	**47**

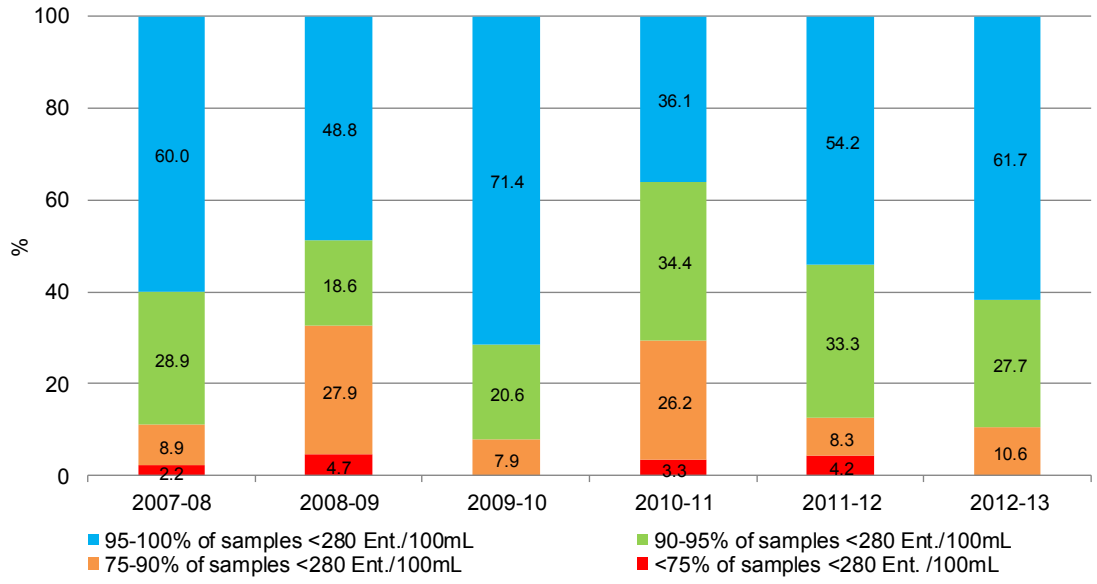

Figure 1: Yearly overall percentage of coastal sites with corresponding percentage of samples within each category from 2007 to 2013

Freshwater Sites

Table 3: Annual freshwater grades compared to national guidelines

Category	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
95-100% samples <550 *E. coli*/100mL	1	2	6	4	2	4
90-95% samples <550 *E. coli*/100mL	2	5	2	2	3	0
75-90% samples <550 *E. coli*/100mL	6	7	6	9	3	6
<75% samples <550 *E. coli*/100mL	12	5	9	9	2	2
Total number of sites	**21**	**19**	**23**	**24**	**10**	**12**

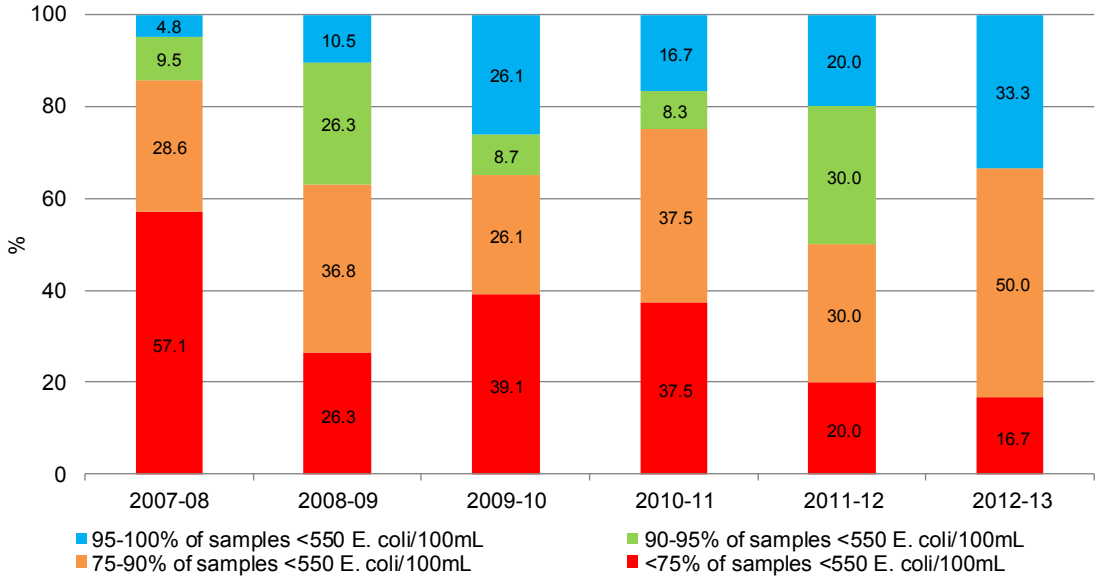

Figure 2: Yearly overall percentage of freshwater sites with corresponding percentage of samples within each category from 2007 to 2013

The results from faecal indicator bacteria testing in 2012-13 were improved for both coastal and freshwater sites when compared to the 2011-12 season. Monitoring was conducted until the end of March in 2012-13, unlike in 2011-12 where sampling had been resumed two weeks earlier than usual due to stormy weather. The extended monitoring period this season combined with the drought is likely to have contributed to the better results in 2012-13.

Catchment investigations

A total of 22 sites have now been studied as part of a council initiative to investigate water quality issues at sites not meeting the guidelines in the region. Source tracking to isolate the source(s) of contamination at these sites has shown that 20 sites are contaminated by wildfowl (ducks and/or gulls). Fourteen sites are contaminated by ruminant faecal material; four sites with dog faecal material and three sites by a human source of pollution.

The three sites that showed a source of contamination to be human were Pahi (150m NW of jetty), Ocean Beach stream and Raumanga Stream. Where the source of contamination is from natural sources, i.e. avian, little can be done to rectify the problem. Where the source of contamination is non-natural, i.e. human, herbivore or dogs, council staff are working with landowners to remedy the situation.

Proposed recreational swimming water quality strategy 2013-14:
This proposed strategy was subject to discussion at the pre-season stakeholder meeting on 17 October 2013.

Sites and sampling regime
In 2013-14, the number of coastal and freshwater sites will remain the same as for the 2012-13 season, i.e. 47 and 12 sites to be monitored respectively. All sites will be monitored weekly until 12 February 2014 by staff and students employed over the summer period, and then 26 sites will be monitored until 26 March 2014 by staff only. This later period is outside the 'peak' recreation period as the school term begins on 4 February 2014.

The proposed recreational swimming water quality programme for 2013-14 differs from the previous summer programme by:

- Removing the following sites from the investigation programme:
  - ✗ Lake Waro
  - ✗ One Tree Point
  - ✗ Teal Bay
  - ✗ Kerikeri River

Consistent low bacteria levels were recorded at Lake Waro, One Tree Point and Teal Bay and therefore no further investigation is required at these sites at this stage. Consistent high bacteria levels and identified source of contamination were recorded at Kerikeri River site and therefore no further investigation is required and a permanent sign stating the source of contamination will be erected at the site.

- Due to high bacteria levels last season, the following sites will be added to the site investigation programme:
  - ✓ Tirohanga Stream
  - ✓ Waitangi River

Data recorded from some of these sites will also be used to inform objective and limit setting for the NPS Freshwater project.

Site investigations
Sites consistently not meeting the guidelines are investigated further to determine, and wherever possible, remedy the source of contamination. Table 4 below lists the sites to be investigated in 2013-14 to determine the source of contamination. Investigative work undertaken includes analysing samples for faecal source tracking, catchment profiling, and undertaking sanitary surveys. Catchment profiling is only carried out if the first faecal source tracking result returns a contamination source(s) from ruminant or human. Sanitary surveys are only done at sites where microbial source tracking returns a positive human result, or where specific toilets/septic tank systems are suspected to be faulty.

Table 4: Site investigation schedule 2013-14 – IR: If Required, n/a: Not Applicable

Site Name	Weekly Monitoring	Faecal Source Analysis	Catchment Profiling	Sanitary Survey
Matapouri 2nd bridge	✓	✓	Done	n/a
Pahi 150m NW of jetty	✓	✓	✓	Done
Paihia at Te Haumi River	✓	✓	IR	n/a
Paihia at Waitangi Bridge	✓	✓	IR	n/a
Raumanga Stream	✓	✓	IR	n/a
Ruakaka River below motor camp	✓	✓	IR	n/a
Tirohanga Stream	✓	✓	IR	IR
Victoria River	✓	✓	In progress	In progress
Waitangi River at Watea	✓	✓	IR	IR

A full report on the proposed investigation strategy is available on request.

The cost of running the bathing programme for the 2013-14 season is expected to be the same as last season, i.e. approximately $136,500. The cost of the programme was reduced considerably in 2011-12 as the number of sites monitored was reduced by 30% by removing sites with bacterial levels consistently within the guidelines, which saved approximately $20,000.

Compliance with Decision Making Processes:
The activities detailed in this report are part of the council's day to day operations, they are provided for in Section 3, page 94 in the council's 2012-22 Long Term Plan and in the council's 2013-14 Annual Plan, and are therefore in accordance with the Council's decision making process and sections 76-82 of the Local Government Act 2002.

The programme, along with other State of the Environment programmes, also fulfils the Council's statutory obligations under section 35(2) (a) of the Resource Management Act 1991.

Recommendations:

1. That the report Recreational Swimming Water Quality Programme dated 24 September 2013, prepared by Jean-Charles Perquin, Environmental Monitoring Officer – State of the Environment and Compliance, be received.

2. That the recreational swimming water quality programme continue to be supported by council as a valuable programme for informing the community about water quality at popular swimming sites, and the best way forward for investigating and, where possible, improving water quality at problem sites in Northland.

ISSUE: River Management Update

ID: A594954

To: Environmental Management Committee, 26 November 2013

From: Joseph Camuso, Rivers Programme Manager

Date: 11 November 2013

Summary The purpose of this report is to provide an update on progress with the council's river management activities. It concludes with the recommendation that the report be received and that the draft minutes from the 20 September 2013 Kerikeri-Waipapa River Liaison Committee meeting be received.

Report Type:	✓	Normal operations	✓	Information	☐	Decision
Purpose:	✓	Infrastructure	☐	Public service	☐	Regulatory function
	☐	Legislative function	☐	Annual/Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	✓	Low

RIVER MANAGEMENT WORKS

Awanui

The tender for the 2013-14 annual maintenance works programme closed on 31 October 2013. Staff are evaluating the tenders and will award the contract with an intended start date of 25 November.

Consultants are progressing with preliminary design work for the Awanui Flood Scheme upgrade. As agreed by the liaison committee, a workshop will be held prior to confirming the configuration of the preliminary design. A tentative date for mid-February 2014 for the workshop has been set.

Part of this preliminary design work entails modifications to the hydraulic model to better represent the scheme's modifications. Review of the flood model by the consultants has revealed that peak 100-year flow generated by the model at Kaitaia is likely to be overestimated relative to historical flow records. Review of the HIRDS v3 rainfall data for the upper catchment has been undertaken, and it has been discovered that HIRDS rainfall exceeds predicted rainfall depths based on analysis of site records. Further investigation is in progress. In the interim, it has been decided to not release the Awanui flood maps until this issue has been resolved.

The revised programme is for preliminary design to run until September 2014 followed by community consultation, detailed design, resource and building consenting etc. until September 2016 with construction to start November 2016.

Kaeo-Whangaroa Rivers

A separate report updating the Stage 1 Kaeo flood risk reduction works is provided in this agenda.

After site visits with local liaison committee representatives, staff have prioritised works and started yearly maintenance, addressing some of the work identified in the visits.

Flood maps for the Kaeo catchment were publicly released on 29 October. Notification letters were sent to all landowners within the 100-year flood plain. To date staff have received approximately 10 enquiries from landowners in response to the letters.

Staff are awaiting confirmation from the FNDC on its agreement, or otherwise, to reapportion part of its funding contribution for two flood vulnerable Kaeo homes that are eligible for the funding assistance from central government and FNDC. The matter will be put before FNDC in November.

Kerikeri-Waipapa River
The Kerikeri-Waipapa River Liaison Committee confirmed the annual maintenance works programme at its 20 September meeting. The draft minutes of the meeting are attached.

At the meeting staff presented the 100-year simulation results for the Kerikeri flood scheme spillway option. Feedback from the liaison committee was that the existing design for the spillway did not appear to offer sufficient benefits based on the 100-year flood. Staff are now revising the spillway design to achieve a level of service based on reducing the extent of flooding for a 100-year event down to a 10-year event for the Waitotara Drive, Waipapa Road and Rainbow Falls Road areas. Testing the spillway based on a 50-year event will also be undertaken. More detailed analysis of the benefits will then be undertaken for further discussion with the liaison committee.

Staff met with the owner of the land where it is intended to construct the spillway. Much of the land is outside of the 100-year flood extent, and the spillway would cut off access to the land during floods. A bridge over the spillway will be required to ensure the landowner's future proposed development is not unduly compromised. Staff will further refine the design of the spillway to be compatible with a bridge crossing.

The model predicts an increase in flood level of approximately 150mm at the Stone Store with the current spillway design in place. Staff and Mr Fred Terry, Liaison Committee member, met with a Historical Places Trust representative to explore flood mitigation measures for the Stone Store and Kemp House. Further work will be done to outline options for further consideration.

Public release of flood mapping for the Kerikeri River catchment is scheduled for 18 November. Approximately 1100 landowners have been identified for notification, as they own land within part of the 100-year flood plain.

Waitangi River
Following the tender process, a contractor has been selected to carry out the 'drill and kill' herbicide application to selected willows on the Waitangi River. These trees have been selected because they are causing blockages and restricting flood waters.

Expressions of interest in extracting gravel from the Kaeo River and Waitangi Rivers have been received from a number of parties. FNDC and several contractors have taken samples for testing with the intention of using it on cycle paths, trench bedding, topping for horse arenas, as well as private driveways and farm races. This work would be carried out at nil cost to council.

Flood mapping for the Waitangi catchment was publicly released on 29 October. Staff dispatched notification letters to all landowners within the 100-year flood plain.

Kaihu River
The Kaihu River annual maintenance works programme has been awarded, with works programmed to start in early December.

Whangarei Urban Rivers
Rust Avenue Bridge replacement (led by Whangarei District Council) is progressing. The bridge replacement will increase the cross sectional area of the bridge (by 22%) and remove central piers, reducing the risk of debris blockage and river break-out. In the past river break-out at this bridge has allowed flood waters a direct route into the CBD via Rust Avenue.

Development of the Kotuku Street detention dam is progressing as follows:

- Resource consents and designation for the dam were granted in October 2013, no appeals were lodged.
- An archeological authority from the NZ Historic Places Trust, to modify or destroy archeological sites, has been granted.
- Dam detailed design is complete.
- Peer review of the detailed design is complete and issues identified have been addressed.
- Building consent application has been lodged. Technical review of the application has commenced. NRC will need to acquire ownership of the WDC reserve land under the dam structure before building consent can be granted.
- 12 of the 20 private titles that are required for the dam have been acquired. Section 23 of the Public Works Act, notices of intention to take land, will be served on remaining land owners and registered interests during November 2013.
- Based on the current programme, it is not feasible to construct the dam during the summer 2013/14 works season, however, pending progress with land acquisition, construction is considered feasible during summer 2014/15. Securing land is considered the largest risk to meeting the 2014/15 works season.
- Services relocation (sewage, water, gas, power, fibre) is scheduled for February-March 2014 in advance of dam construction, to ensure the longest possible works season is available for dam construction.
- Demolition of eight dwellings is scheduled for September 2014.
- Dam construction is scheduled for commencement during October 2014.

Table 1. Summary of key project elements and completion status

Project Element	**Completion Status**
Landowner consultation	95%
Archaeological assessment and iwi liaison	100%
Land acquisitions and negotiations	50%
Preliminary design	100%
Peer review of preliminary design	100%
Detailed design	100%
Peer review of detailed design	100%
Building consent applications	30%
Resource consent and designation applications	100%
Application for an authority to modify or destroy archeological sites	100%
Survey for easements/acquired land and registration with LINZ	50%
Tender demolition of dwellings	0%
Award tenders for removal of dwellings	0%
Tender construction documents	0%
Tender construction	0%
Tender evaluation and award contract	0%
Construction	0%

The tender for the Whangarei maintenance works closes on 21 November 2013.

Minor River Works
Staff have designed timber groynes and rock-armouring for Pawarenga Stream and have applied for resource consent. The works are designed to reduce the outer river bank scour that is threating to short-circuit the river loop and the main bridge to Pawarenga settlement. The following table provides an update of other minor works.

River	Description of Work Programmed for Current Season	Proposed Date for Physical Works
Awanui - Bells Hill Drains	Clean Drains	Complete
Manganuiowae Stream Broadwood	Stream bank protection on corner	March 2013 (if budget)
Pawarenga Streams	Clear vegetation and drains near Marae	Jan 2014
Rotokakahi @ Pawarenga Bridge	Fence and plant river bank and provide erosion protection measures upstream of road bridge	Jan 2014
Mangamuka	Rock armour bend adjacent to Catholic Church and Marae	Feb 2014
Waihou/Rahiri-Rangiahua	Continue to lower berm along Rahiri Settlement Road	Jan 2014
Panguru and Lower Waihou	Gravel management around bridges	Jan 2014
Waitangi	Haruru Falls RC Application & remove shingle island	Complete
	Gravel extraction at Top Energy	Jan 2014
	Gravel management at Lily Pond	Jan 2014
	Willow spraying/removal	Dec 2013
Waima	Tree removal and channel clearance at Otatara Marae Bridge	Feb 2014
Whirinaki	Gravel extraction at SH14 Bridge	Feb 2014
Whirinaki	Rock Armouring at School	Nov - Dec 2013
Awapokonui/Pakanae	Weed spray from SH14 Bridge upstream	Dec 2013
Waimamaku	Tree management	Dec 2013
Otiria	Spillway Resource Consent	Ongoing
Otaika	Willow spraying/removal	Dec 2013
Ruakaka	Mangrove removal at bridge	Jan 2014
Waipu	Fallen tree removal at the Braigh	Complete
Contingency	Emergency/Flood Damage Response/ Project Contingencies	N/A

Legal compliance and significance assessment:
The activities detailed in this report are provided for in the council's Long Term Plan and as such are in accordance with the council's decision making process and sections 76-82 of the Local Government Act 2002. This decision is considered to be of low significance under council policy, because it is in keeping with the council's overarching programme for River management as detailed in the 2012-2022 Long Term Plan.

Recommendations:

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1. That the report River Management Update by Joseph Camuso, Rivers Programme Manager dated 11 November 2013, be received.

2. That the draft minutes of the Kerikeri-Waipapa River Liaison Committee held 20 September 2013 be received.

Report of the meeting of the Kerikeri-Waipapa River Liaison Committee, held on Friday 20 September 2013
Woodlands Motel and Conference Venue, 126 Kerikeri Road, Kerikeri
commencing at 10.30 a.m.

Present – Committee Members:

Joe Carr	(Chairperson)
David Stewart-Jones	Middle Kerikeri catchment area
Hamish Sheard	Upper Kerikeri catchment area
Fred Terry	Lower Puketotara and Kerikeri catchment
John Dawn	Bay Care representative
Ruth Marsh	Living Waters representative
Fleur Corbett	Dept of Conservation

Also in Attendance:

NRC staff:	Bruce Howse, Joseph Camuso, Doug Foster, Toby Kay, Nola Sooner
FNDC staff:	Lynley Newport, Barry Somers
Georgina Neumann	Opus representing NZTA
Murray Wright	Member of the public
Peter Thorpe	Member of the public
Doug France	Member of the public

APOLOGIES Peter Kennedy, John Kooge and David Greig

Resolved: That the apologies from Peter Kennedy, John Kooge and David Greig be accepted.

John Dawn : Georgina Newmann

MINUTES OF PREVIOUS MEETING

Resolved: That the Minutes of 29 May 2013 be accepted.

Hamish Sheard : John Dawn

MATTERS ARISING

Kerikeri Basin

Historic Places Trust – Bruce confirmed a Memorandum was circulated to clarify his points following the previous meeting. Bruce advised he will send the Historic Places Trust a Memo explaining the concerns expressed by the Kerikeri-Waipapa River Liaison Committee.
Action: Bruce Howse

Fred is willing to attend a meeting with the Historic Places Trust should it be required. Bruce confirmed we do need to engage with the Historic Places Trust more.

Resolved: That the Northland Regional Council continues with formal communications with Historic Places Trust and express a concern amongst Committee members that opportunities to make Kemp House and Stone Store safer need to be pursued further.

Joe Carr : John Dawn

PROPOSED ANNUAL 2013/2014 WORKS PROGRAMME
Joseph summarized the 2013/2014 Works Programme relating to:

- General log jam and tree removal;
- Waipapa Industrial Estate – machine clean and mulch as required along the Whiriwhiritoa Stream upstream and downstream of SH 10 culvert;
- SH 10 Bridge – Kerikeri River – Maintenance cleaning upstream and downstream transitioning to Bridge; and
- Contingency.

In response to Georgina's query, Joseph advised input will be required from NZTA with the works that are proposed around SH 10 Bridge and Joseph confirmed he will liaise with NZTA in due course.

Joseph confirmed the tender is currently being prepared to be advertised. There is more work that could be done at the SH 10 Bridge which would trigger a resource consent, so the aim is to include this work with the resource consent for the spillway next year advised Joseph.

Discussion was held to ensure debris is removed from further down the river. Bruce confirmed this could be done under the contingency budget.

Bruce asked Georgina if NZTA could contribute to the works under the Kerikeri River Bridge on the State Highway. Georgina said if it is impacting on the structure of the bridge, it is likely NZTA could contribute. She will check with NZTA and report back to Bruce. **Action: Georgina Newmann**

Resolved: That the 2013/14 Works Programme be approved in principle.

Joe Carr : John Dawn

2013/2014 BUDGET
Bruce summarized the 2013/2014 Budget. Bruce explained the rates collection for NRC is done by the District Council.

Resolved: That Bruce Howse is requested to contact NRC Finance Dept to find out if the monies reserved are earning interest.

Joe Carr : Georgina Neumann

Resolved: To approve the 2013/2014 Budget.

Joe Carr : John Dawn

SCHEME INVESTIGATIONS UPDATE
Joseph summarized the Kerikeri Project Schedule for Site Investigation, Consent and Works. There are two landowners affected by the spillway – little response received to date from the landowners despite numerous efforts to contact the landowners by NRC staff. There are some issues that NRC needs to obtain feedback from the affected landowners. Joseph summarized the preliminary design.

Joseph advised geotech testing schedule has been started in that area. It was noted there is a lot to be done to keep to the Year 2014 timetable and get to the stage to construct e.g. obtain resource consent, third design model run (DHI), detailed design, geotechnical site exploration and soil laboratory testing, peer review, resolve peer review issues, Public Works notices, valuations obtained, negotiations with landowners, update Kerikeri Scheme for Annual Plan 2014-2015, Survey Office Plan for Spillway, obtain easements for the land and tender for works. It was anticipated construction will commence in November 2014 and finish by May 2015.

Bruce confirmed NRC would need to obtain an easement over affected land.

Resolved: To accept the Kerikeri Project Schedule for Site Investigation, Consent and Works and request NRC to negotiate on the basis of a concrete crossing (not a bridge).

Murray Wright : Joe Carr

Scheme Investigations: Kerikeri Spillway Design and Model Simulation
Toby summarized the Spillway route and proposed spillway intake. NRC have used a 100 year with climate change event and noted this is an exceptional event. There is already an existing flow path which can take a considerable flood flow. He illustrated where the cut through the berm is - approx 300m downstream from the Highway. Discussions need to be held with the landowner to decide what to do with the excavated material from the earthworks e.g. $10 onsite to $30 offsite per cubic metre to transport dirt. Toby explained the spillway alignment coordinate points and the spillway intake cross sections. The preliminary design has a 40 metre wide bed width. The intake is wider in cross-section of 72 metres. Peter would like to see the flooding of SH 10 and the lack of capacity at the Bridge addressed. He asked are NRC doing enough downstream of the bridge (changing the depth and the gradient) to ensure the water flows through more efficient. Should we be modeling a deeper cut to see what difference it would make upstream of the bridge asked Peter? Toby noted that as we cut further down it starts to become more environmental intrusive down the valley and could see more velocity. This design is a wider design than the first one. As you drop your invert, it will become more operational more often.

Toby summarized the flood scheme impact on river levels (Kerikeri River Long Section Flood Levels Mangaparerua to CINZ). He explained the impact of spillway on 100yr ARI CC flood extent. Toby summarized the DHI report conclusions and recommendations:

- Optimised design has achieved a decrease in velocity which may allow grass protection lining to be adequate. Some sensitivity tests should be done to assess this finding is robust.
- Assessment of scour protection to date focused on the bed of the spillway. Consider also scour risk to banks.
- Consider simulation of spillway with higher probability storm events, to test the design on less extreme events (impact and scour protection).

Toby to send Georgina a copy of map “Kerikeri River LIDAR at SH 10 Bridge with surveyed flood levels Scale: 1: 2,000” **Action: Toby Kay**

Peter noted we should consider the effects of a bridge upgrade. John advised the committee want to be able to compare the benefits with the cost. Murray expressed concern over the benefits to upstream.

Joseph advised we would need to have a very good case to put forward to obtain a subsidy for the replacement of SH-10 Bridge.

John noted working on modifications on the existing proposal will have little effect on the spillway. He felt we should consider SH10 and the area upstream from it. Joseph noted the maps we are showing are flood extent maps. Bruce felt we need to do more work on the cost benefit and look at the 50 year flood so that we can clearly convey what the benefits are. He noted we are just looking at the spillway in isolation. The Committee wanted NRC staff to look into increasing the effectiveness of the spillway. Fred gave a brief history of Kemp House, and advised there was a historic flood that occurred when building Kemp House. Toby suggested at the next meeting for NRC staff to present what is happening with a model of a 50 year flood event. Fred felt as Kemp House is a historic building, we need to do everything we can to protect Kemp House and the Stone Store. He noted the entire Kerikeri catchment goes through one narrow area. Fred, Bruce and Fleur to meet with Historic Places Trust. Fleur advised the Basin Management Group meet quite regularly and the management group meets yearly. Fleur confirmed she would contact Bruce to advise the date of the next Basin Management Group meeting. **Action: Fleur Corbett**

Action Points

- Look at changing the dimensions of the spillway. **Action: Toby Kay**
- Complete 50 year scenario and report on the differences between status quo and the 100 year plus climate change. **Action: Toby Kay**
- Compile a report on the differences and costs and circulate report to Kerikeri-Waipapa River Liaison Committee and aim to have the next Kerikeri-Waipapa River Liaison Committee meeting in February 2014 to ascertain if we proceed with the spillway. Bruce said staff can commence with completing the base work for the resource consent in order to avoid further time delay. **Action: Bruce Howse**

Consensus was recorded to continue with work on the Stone Store and Kemp House with Fred, Fleur and Bruce in attendance.

Detention Dam Investigation

Doug has contacted the affected landowners. He advised nine properties are directly affected. Doug advised in general landowners appreciated receiving initial advice but there is concern about the final outcome. Barry noted FNDC is at full capacity for summer water in Kerikeri. Discussion was held on the detention dam and potential storage. Toby summarized the storage curve (K3A and the area upstream of that). Discussion held on the suitability of the water quality and treatment options. We need to attenuate half the flow at the current time said Bruce. Toby recommended looking at longer (2-3) day events and put out a larger flood flow.

NRC Staff to do some rough calculations to work out the Rough Order Costs and to report to the committee. **Action: Joseph Camuso**

GENERAL BUSINESS

There was no general business.

Joe Carr thanked attendees and their input and guidance at today's meeting.

Meeting closed at 2:06 p.m.

NRC Contacts

Local: Doug Foster, Land Management Officer
Kaitaia Office 09 408 6600 / 027 476 7983

River Management Team: Joseph Camuso, River Management Engineer
Whangarei Office 09 4701200 / 027 438 4639

ISSUE: Kaeo Stage 1 Flood Works Update

ID: A590207

To: Environmental Management Committee, 2 December 2013

From: Joseph Camuso, Rivers Programme Manager

Date: 8 November 2013

Summary The purpose of this report is to provide an update on the Kaeo Flood Scheme Stage 1 works.

Report Type:	✓	Normal operations	✓	Information	☐	Decision
Purpose:	✓	Infrastructure	☐	Public service	☐	Regulatory function
	☐	Legislative function	☐	Annual/Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	✓	Low

History and Overview
The township of Kaeo has a long history of flooding and is built on a floodplain. Kaeo is vulnerable to flooding from the Kaeo River and Waikare Stream. In the floods of March and July 2007, the Kaeo River breached the school stopbank and high velocity flood waters flowed along SH-10, the main-street of the township.

Flood Risk Reduction Strategy for Kaeo
The NRC has been working closely with the Kaeo River Whangaroa Catchment Management Liaison Committee to develop a comprehensive strategy for affordable flood risk reduction. The committee is made up of members of the community (upper, mid, lower and outer catchment members), Iwi, NZTA, FNDC, DOC, marine farmers etc. The meetings are open public meetings and typically well attended. A range of nine options were analysed for flood risk reduction and explored by the committee. No one silver bullet option existed and the committee chose a range of options, mainly Stage 1 deflection banks, managed retreat, enhanced status quo, community response plan and early flood warning system.

Kaeo Flood Scheme Stage 1
Preparation for Stage 1 Works for the Kaeo River Flood Scheme is scheduled to start on 2 December 2013. This will allow the contractor to establish plant and equipment, and install erosion and sediment control prior to the Christmas holidays. We anticipate the majority of the earthworks will be undertaken in January, February and March.

The benefits of an early December establishment date include the ability to complete preparation works prior to the Christmas/New Year holiday period, then commencing major earthworks without extended breaks in the programme as well as undertaking works on the school property during school summer holidays.

Arrangements for land use are finalised, and a memorandum of agreement has been signed with all parties along with compensation payment completed.

Scheme Design Stage 1
The works consist of building a high level river by-pass spillway (to bypass flood flows away from the school stopbank), a deflection bank from the school to the pa, a deflection bank from the pa to the confluence of the Kaeo and Waikere Stream as well as a floodwall along the existing school stopbank where there is not enough room to raise the stopbank. For more detail see the attached Haigh-Workman Construction Staging plan P-2.

Velocity Reducing Deflection Banks
Flooding of any kind can be costly. However, high velocity flood water can be particularly destructive and much more dangerous than ponding, slow-moving or backwater flooding. Because of the geographical layout of Kaeo township in relation to the Kaeo River and Waikare Stream, the community realized early on that complete flood prevention would be technically challenging, prohibitively expensive and more than the community could afford. Therefore flood velocity reduction was the big driver for this work. The goal of the Stage 1 design is to deflect the main river flood flow away from the main-street of the township i.e. deflect the “direct hit”, and allow backflow to enter the township at slower velocities. This will allow for business and residents to defend against the slower flood waters with sand bags, flood shutters etc.

Managed Retreat – Enhanced Status Quo
Along with Stage 1 works the NRC has been working with 13 of the most vulnerable properties for flood risk. In areas where flood waters are ponding and there is a means of egress from the property, lifting the houses is an option. However, in areas with high velocities, managed retreat from the flood plain becomes the best solution. Funding has been secured from central government ($257,000) and matched by FNDC to help implement this option.

Community Response Plan, Flood Safety Plan and Early Flood Warning System
FNDC and the NRC have developed the above plans and systems to help offset the residual risk. The community response plan and flood safety plan outline actions for community to take to reduce flood risk. The early flood warning system is triggered by the telemeted NRC hydrometric network and sends text and e-mail alerts when rainfall intensities or river levels reach pre-determined thresholds.

Cost and Funding
Stage 1 works were tendered in December 2012, however because we could not obtain landowner agreement the works were postponed for 2013-2014 construction season. The price for the Stage 1 works is $470,000 with an overall cost of $697,000. This includes landowner compensation, legal, consenting, engineering supervision, plus contingency etc. However, through special agreement, central government and the Ministry of Education are contributing $243,000 and $144,195 respectively with the remainder being paid from the targeted Kaeo-Whangaroa River Catchments rate projected to be $58.35 per rateable property over the next seven years.

Stage 2
Currently Stage 2 works consist of a stopbank connecting the pa with the hillside to the east of the township, and raising of the SH-10, effectively preventing backflow to the Kaeo school grounds. However, the liaison committee resolved to hold off Stage 2 works until such time that they can monitor the effectiveness of the Stage 1 works. The cost of Stage 2 is approximately $1.8 million and agreed by the committee not to be affordable. However, we will continue to work with the community to explore other funding options.

Legal compliance and significance assessment:
The activities detailed in this report are provided for in activities described in the council's Long Term Plan and as such are in accordance with the council's decision making process and sections 76-82 of the Local Government Act 2002.

This decision is considered to be of low significance under council policy, because it is in keeping with the council's overarching programme for River management as detailed in the 2012-2022 Long Term Plan.

Recommendation:

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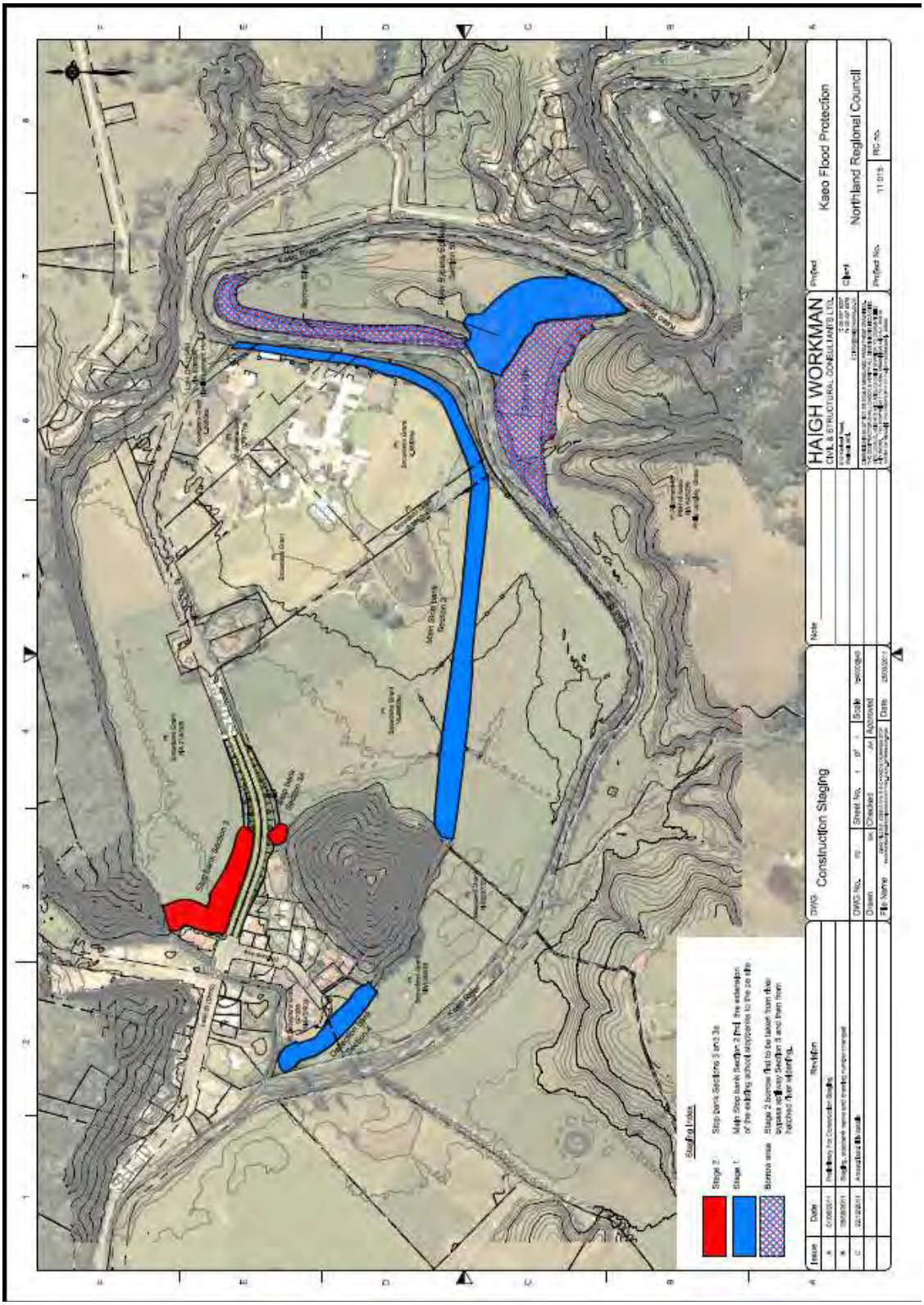
1. That the report Kaeo Stage 1 Flood Works Update by Joseph Camuso, Rivers Programme Manager dated 8 November 2013, be received.



Haigh Workman – Construction Staging P-2

ITEM: 14

ISSUE: Update on Biosecurity responses; Appointment of representative to the TBfree Northland Committee

ID: A596987

To: Environmental Management Committee, 18 November 2013

From: Don Mckenzie, Biosecurity Senior Programme Manager

Date: 18 November 2103

Summary The purpose of this report is to update the committee on biosecurity responses and to also nominate a representative to the TBfree Northland Committee. It concludes with the recommendation that the committee receive the information and provides an appointment to the TBfree Northland Committee.

Report Type:	☑	Normal operations	☑	Information	☐	Decision
Purpose:	☐	Infrastructure	☑	Public service	☑	Regulatory function
	☐	Legislative function	☐	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Background:

This item updates the committee on responses to Kauri dieback disease, the marine pests, Mediterranean fan worm and the sea squirt Pyura, kiwifruit vine disease Psa-V, and Bovine Tuberculosis (TB).

Kauri dieback

A five year joint agency response to kauri dieback disease has been underway since May 2009 and is funded by Ministry for Primary Industries, Department Conservation, and the regional councils of Northland, Auckland, Waikato and Bay of Plenty. Recently the Tindall Foundation offered to undertake an independent audit of the Kauri dieback programme and a summary of their report is attached. The audit signalled steady progress has been made in the research needed to understand and control the disease, relationship building with tangata whenua, and improving community awareness. Looking ahead to 2017 several areas of improvement were also identified. These included a need for the programme to operate at a faster pace with a more nationally consistent approach if the spread of the disease is to be slowed. The audit also recommended that MPI lead a National Pest Plan for Kauri Dieback disease.

A new business case is in development and this is expected to be finalised in early December when it is presented to the Minister for Primary Industries. It is likely that the preferred funding option in the business case will cost between $3M and $4M per annum beyond 2015. In this scenario the Northland Regional Council share in the joint agency plan would equate to approximately $90,000 per annum plus staff time of approximately 0.3 FTE. A budget bid for this is being prepared for the annual plan 2014/2015 and the Long Term Plan.

Marine Pest Response

Marine Charter: The Whāngārei Marine Charter (copy included with agenda) has been finalised with local marine industry groups and endorsed by the marine industry and MPI. This charter provides a framework for the council, marinas, vessel repair and berthing facilities to work together to reduce the risk of fanworm infected vessels arriving and sets in place a process for managing infected hulls. The charter is the first of its kind in New Zealand and staff are working with a stakeholder group in the Bay of Islands to develop a similar version. Copies of the charter are available as an attachment to the agenda.

Mediterranean fanworm: The eradication of fanworm from Marsden Cove marina and facilities at Port Nikau and Ship Repair is also underway and divers will systematically search and remove any fanworm found over the next two weeks before they can spawn. A report on the results of this latest exercise and an analysis of the trend in fanworm populations will be reported to the next committee meeting.

MPI are also about to start a round of survey for high risk marine species in Whāngārei and Ōpua harbours and council staff are working with them to ensure local knowledge is utilised and that all high risk berths including customs clearance ports in these harbours are thoroughly checked.

Pyura: The invasive sea squirt Pyura is established on coastal rock platforms in the Far North at Ahipara and Parengarenga and is impacting on mussel beds and other native marine biota. Past eradication attempts, using teams of people to hand-pick the marine pest have reduced Pyura populations however funding to sustain the MPI led programme has been in doubt. A recent letter from MPI has offered transitional funding of $45,000 over the next three years to support iwi led initiatives to manage pyura providing the council accept a lead role. A survey is urgently needed to update information on Pyura locations and staff are discussing with iwi how best to utilise the MPI offer before responding.

Kiwifruit vine Psa-V - removal of unmanaged kiwifruit orchards

Pseudomonas syringae pv. actinidiae (Psa-V) is a bacteria that can result in the death of kiwifruit vines. More than 2102 orchards have been identified with Psa-V and this translates to more than 71% of New Zealand's kiwifruit hectares having the infection.

Northland is fortunate that Psa-V is not established and staff are liaising with local regional kiwifruit grower representatives as checks are made on unmanaged orchards which were treated last year. Staff are recommending any signs of regrowth should be treated before this summer ends and Kiwifruit Vine Health will be expected to pay a half share of the total costs which are currently estimated at $4,000.

Bovine Tuberculosis

Staff attended the meetings of the TBfree Northland Committee and OSPRI Northern North Island group which were held in Hamilton during October.

No further TB cases in Northland were reported by TBfree staff and a wild animal recovery operation within a 10km radius of the known Far North infections is underway for the second time. So far over 900 possums have been trapped, no obvious signs of TB have been observed from captured wildlife however the full results of their TB status will take longer to determine.

A report by the Northern compliance officer was tabled and testing for TB was overdue in 31 Northland herds. Twelve of these herds are under a compliance regime by TBfree enforcement officers and the majority of other owners are scheduled for herd testing within the next five months.

Staff raised concern with the Northland committee about the growing instances of illegal wild animal releases in Northland as in the last two years there has been two cases involving fallow and sika deer which have required responses from the joint agency wild deer recovery team. Council staff are also responding to more reports of wild pig releases.

Committee members were also referred to the recently published Waikato Regional Council's Pest Management Plan. This plan has omitted rules preventing the transfer of wild pigs and deer. As a consequence, Auckland Council are appealing the plan. Wild pigs and deer can act as hosts for TB and in some cases spread the disease into the resident possum populations which, in turn, infect cattle. Wild animal releases also threaten regional native forests and wild pigs can spread soil borne diseases such as Kauri dieback disease. Rules in Northland's Pest Management Plan make it an offence under the Biosecurity Act to release wild deer or pigs into the environment. It is considered that rules aimed at deterring these activities should be a feature of all regional pest plans where TB free regions like Northland are near neighbours.

The committee resolved to write to Waikato Regional Council expressing their concern and indicated support for a Northland Regional Councillor representative for future meetings.

Appointment of representative to the TBfree Northland Committee
At its meeting on 6 November 2013, Northland Regional Council resolved to delegate to the Environmental Management Committee the appointment of a suitably qualified representative to the TBfree Northland Committee. Committee members are therefore requested to provide a nomination.

Legal compliance and significance assessment:
The activities detailed in this report are provided for in the council's 2012-2022 Long Term Plan and as such are in accordance with the council's decision-making process and sections 76-82 of the Local Government Act 2002. This issue is considered to be of moderate to low significance under council policy, because it is in keeping with the council's overarching programmes for pest management as detailed in the 2012-2022 Long Term Plan.

Recommendations:

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1. That the report Update on Biosecurity responses by Don Mckenzie, Biosecurity Senior Programme Manager and dated 18 November 2013, be received.

2. That the committee recommend to council the appointment of …… as their representative on the TBfree Northland Committee.

Date	9 October 2013
About	**KAURI DIEBACK PROGRAMME** **INDEPENDENT REVIEW - SUMMARY REPORT**

Key points

- ➔ It is time for the programme to shift gear, and move from being a 'shared service' assisting the agencies, to a ***fully collaborative approach*** with an over-arching plan, standardised processes, peer review, and system-wide performance reporting.
- ➔ The greatest challenge in the next phase is to help manage PTA on private land. Support, incentives and regulation will be required. A ***nationally consistent approach*** is necessary.
- ➔ The programme attempts to work in ***partnership with tangata whenua and communities***. But, for a number of reasons, this does not always translate into consistent action on the ground.
- ➔ Current ***resources*** are struggling to meet current activities. And they will be inadequate to meet the challenges of regulating PTA on private land or co-funding long-term research.
- ➔ Stronger ***planning*** and practical business ***systems*** are urgently required.
- ➔ The current programme provides a commendable basis for the next stage of work. ***Doing more of the same will continue to produce results. But not at the pace required to adequately protect our kauri forests***.

Background

1 The Kauri Dieback Programme was established in 2009 following the discovery of *Phytophthora taxon Agathis* (PTA). It has been governed by a Leadership Team chaired by MPI and with representation from the tangata Whenua Roopu and MPI, DoC, Northland Auckland, Waikato and Bay of Plenty regional councils ('the delivery partners'). Government and regional councils allocated a total of all the requested resources ($12.6 m). [a] [b]

2 This independent review was funded the Tindall Foundation. It aimed to provide "a credible, independent view of the progress the programme has made, opportunities for improvement and suggested direction for the future". Although the contract for this assignment was managed through MPI, this review has been conducted independently of all the parties to the programme.

Review findings

Achievements

3 The programme has made steady progress in a number of areas:

- Momentum is most visible in publicly owned areas where regional councils and DoC own the land and directly control its access and use. In significant parts of the public estate hygiene measures have been instituted and tracks upgraded to reduce the risk of PTA transmission. A few areas have been closed to the public.
- Mapping and surveillance activities are progressing, albeit much slower than planned. Knowledge about the distribution of PTA is slowly improving. Risk assessments are being conducted and site management plans are gradually being implemented on sites that have tested positive for PTA.
- Scientists are learning more about PTA, its genetics, and its relationship to other phytophthora. They have developed diagnostic methods and surveillance resources, hygiene methods, and are trialling one treatment method to determine the best dosage and application regime.
- TWR has established strong networks with tāngata whenua across 'kaurilands'. The TWR has representatives who are are partners in governing the programme, and many of its members are active contributors to the workstreams. Mātauranga is valued alongside Western science.
- Iwi and community engagement is building. There is increasing awareness of kauri dieback.

4 But progress has not always been smooth. It took far longer than planned to establish the surveillance and mapping work. The transition from 'response' to 'long-term management' was disjointed. The lead researcher died, and the science programme faltered. And resourcing has been tight.

5 While there is still considerable uncertainty about PTA and its control, there is a real sense of confidence that, while it cannot be eradicated, it can be successfully contained and managed. While the programme's participants are optimistic, its current resourcing and informal approaches are not sufficient to deliver long-term success.

Improvements

6 The review found that, while the approach has worked until now, it is not sufficient for the future:

- The people involved in the programme have been pragmatic and have focused on getting things done. Better planning is now required to get the best long-term impact from the available resources.
- Those people are enthusiastic and hardworking, but this is not sustainable. The programme would face difficulties if key people left. The review recommends investment in better systems as well as more resources.
- Delivery partners should also implement a structured peer review process to constructively challenge and support each other.
- To date research resources have been targeted at immediate problems. PTA requires longer-term research across a wider front: the PTA organism, kauri biology, and the kauri forest environment and social research.

7 The review observed that while the programme aims to be collaborative and system wide it currently operates more as a set of shared services that support the participating organisations. The review recommends that the programme fully embrace a collaborative approach where

- clear long-term and annual plans are prepared across the programme (not just the 'shared services team')
- key processes are standardised, and successes and lessons in each of the participating organisations would help improve knowledge and practice
- structured peer review between the organisations to recognise achievement and promote good practice
- the programme reports on system-wide achievements and performance.

8 When the initial business case was approved, $12.6 m seemed a reasonable starting point. $0.5m was lost to the programme due to timing problems. Delivery partners have provided some cash, but have committed significant in-kind resources from biosecurity staff in regional councils and scientists in CRIs and universities. The review recommends that the programme be benchmarked against international phytophthora management efforts. It is likely that more work will be necessary to successfully contain PTA, and more resources will be required.

9 Although progress is being made on public land controlled by DoC and regional councils, a systematic approach is needed for the containment of PTA on private land. This will require a mix of advice, supports, incentives and regulation. While solutions will need to be tailored to the risks in each area, and the circumstances of each landowner, a nationally consistent approach is required, whether through a National Pest Management Plan or a pan-regional approach.

10 The programme has successfully engaged tangata whenua and community groups in area assessments and public awareness activities. Tangata whenua often have detailed knowledge of their areas, and are well placed to assist with planning and monitoring. They certainly need to be involved in agreeing to a rahui (closure) or to restricting land use. The programme's approach has not always been consistent. At times it has adopted a community development model where it works with tangata whenua to use their local knowledge, and build their expertise. But at other times the willingness around the leadership team has not translated into action on the ground through the 6 delivery partners. The review recommends that, wherever practicable, the programme adopt a partnership model, and monitor 'on the ground' practice. [c]

11 The programme has benefits far wider than kauri. The programme is extending New Zealand's ability to manage other phytophthora - this in turn contributes to exports. The programme is also mobilising the knowledge and energy of tāngata whenua and community organisations. This reduces the burden for delivery partners. And the programme can also contribute to our knowledge and protection of native ecosystems.

a The allocation (over 6 years) was $5.5 m in cash, $6.1 m for pest control and track upgrades, and approximately $1.0 m in staff related costs. The approximate share between the partners was: Auckland Council $4.6 m, Northland RC $0.3 m, Waikato RC $0.2 m, Bay of Plenty RC $ 0.1 m, MAF / MPI $4.5 m, DoC $3.0 m. The bulk of Auckland Council and DoC expenditure was on pest control and track upgrades. Due to timing problems only $4.0m of the MAF allocation was drawn down from the allocation.

b Inconsistent figures have been provided by MPI and this review is based on the latest financial information supplied.

c However the review also points out that this will not work with all community organisations and tangata whenua groups.

ISSUE: Climate and Water Resources – Update

ID: A598344

To: Environmental Management Committee Meeting, 2 December 2013

From: Dale Hansen, Water Resources/Hydrology Programme Manager

Date: 20 November 2013

Summary The purpose of this report is to provide an update on Northland's rainfall patterns, soil moisture deficits and river flows during 2013 including the NIWA climate outlook for November 2013 to January 2014.

Report:
This report provides a brief update of Northland's on the climate conditions and water resources during 2013 and NIWA's seasonal climate outlook for November 2013 to January 2014.

Figures 1-15 (**attached**) show rainfall and soil moisture trends as at 23 November 2013. Accumulative rainfall trends and probabilities, soil moisture graphs are supplied by the NIWA Climate Centre.

Background
The impact of the 2012/2013 drought had continued to affect the rural and urban communities in the Northland region throughout 2013. The western and southern Kaipara areas in particular were subjected to low rainfall amounts, high soil moisture deficits and low river flows with rainfall drought returns periods in excess of 50 years and river flows near 20 years. When the drought 'broke' in mid April there was a significant regional rainfall deficit of approximately 245mm.

During late April to June there was substantial improvement in conditions throughout the region as a result of a number of moderate to heavy rainfall events. July was very dry, particularly in the mid to lower areas of the region. Normal conditions prevailed throughout August and September. Conversely, October was exceptionally dry with soil moisture levels trending lower than those levels recorded in 2012. From January to the end of October rainfall deficits were significant in Kaitaia 288mm, Kerikeri 434mm, Whangarei 417mm and Dargaville 335mm. A regional average deficit of 245mm was a result of the drought months January to March.

Rainfall, Soil Moisture, and River Flows as at 22 November
The average November rainfall for Northland is approximately 100mm and can vary from 60 mm in low lying areas to 150mm in the high altitude areas. Rainfall amounts for the month to date have varied from 25mm to 60mm; all recorded in the first week of November. Dry conditions prevailed throughout the greater part of November.

Groundwater levels for the most of the region are near average for the month of November, with the exception of Mangawhai, Tara and Kaikohe Hill. Groundwater levels in the Mangawhai and Tara area are below normal for this time of the year.

River flows were well below normal for October and continue to further recede throughout November. A reasonable amount of rain is required to slow down these flow recession rates. At this time of year, rivers that are normally flowing clear have large amounts of filamentous algae present. Lower flows accompanied by increasing temperatures will accelerate this condition and lower dissolved oxygen levels. A number of consent holders had commenced pasture irrigation during mid November.

The council considers the following areas to be at high risk of water resource depletion over the next three months if the region does not receive sufficient rainfall;

Far North District
The dry, windy October had a significant affect in the far north; the sand county has been very dry and traditional cropping had been made difficult on the hard soils. Rainfall amounts for November varied from 30mm to 50mm having minimal impact on soil moisture and river flows. High risk areas include;

- The Awanui River which is currently flowing at only 60% above the annual mean low flow,
- South Hokianga, Rawene, Omapere and Opononi, particularly the FNDC public water supply takes on the Waiotemaramara and Waiarohia Streams. There will be extra pressure on these water resources as the influx of visitors increases during the holiday period,
- Kaikohe Hill groundwater levels are currently low as a result of the District Council take. If there is insufficient groundwater recharge in the coming months restrictions on the District Council groundwater take may occur in late summer,
- Kerikeri, Waitangi and Kawakawa catchments where soil moisture levels are high and river levels are 40% to 70% above their mean annual low flows. Rivers usually reach these flow rates in early January.

Whangarei District
Rainfall amounts for November varied from 20mm to 60mm. River flows have declined rapidly over the past three weeks, accelerated by the commencement of pasture irrigation,. High risk areas include;

- Whangarei and inland areas of the Mangakahia and Wairua catchments.
- Tauraroa catchment south of Whangarei which includes the WDC public water supply take at Mangapai,
- Bream Bay catchments.

Kaipara District
Rainfall amounts of 25mm to 55mm for November. High risk areas include;

- Current flows in the Kaihu River are similar to the time last year. Council is closely monitoring river flows at the KDC public water supply takes in the Kaihu catchment,
- Groundwater levels and stream flows in the Tara/Mangawhai area are likely to be low over the coming summer,

NIWA Seasonal Outlook
The equatorial Pacific Ocean continues in a neutral state (neither El Niño nor La Niña), with recent cooler-than-normal sea-surface conditions (La Niña-like) in the eastern tropical Pacific having weakened. International guidance indicates that ENSO-neutral conditions are the most likely outcome for the next three months (October–December). Similar climatic conditions were experienced last year.

The outlook for Northland from November 2013 to January 2014 indicates:

- Temperatures are equally likely (40% chance) to be in the near average or above average range.
- Rainfall totals are equally likely (40%) to be in the near normal or above normal range.
- Soil moisture levels and river flows are most likely (45%) to be in the below normal range. Note that this is quite different from the expected rainfall probability, because of the currently very dry soils in Northland.

The full probability breakdown is:

	Temperature	Rainfall	Soil Moisture	River Flows
Above Average	40%	40%	25%	25%
Near Average	40%	40%	30%	30%
Below Average	20%	20%	45%	45%

Other outcomes cannot be excluded. The outlook is very broad, as average rainfall amounts for the three month period could be the result of one or two major events at anytime within this time period with the remain time being settled weather. Therefore there is likely to be a series of dry periods, higher than normal temperatures but separated by rain events. NIWA scientists are expecting 'nothing too extreme'. Rain is expected on 27 November from a low pressure system of tropical origin moving onto the region from the North Tasman Sea.

Response and Monitoring Plan
The response and monitoring plan is the same approach taken by council during similar prolonged dry periods. These include the following.

- Continue to monitor rainfall, ground water levels and river flows incorporating the council's hydrometric network and rainfall and water level station operated by NIWA.
- Provide regular climate and water resources updates to council, EMC, Rural Support Trust Northland, Territorial Authorities and major industrial/agricultural water users.
- Prepare letters to water users informing of current conditions, future rainfall and river flow predictions, ensure resource consent conditions are closely monitored, notification of potential water shortages and consideration for alternative supplies.
- If serious water shortages are likely then contact will be initiated with the key water users to work with them to develop contingency plans.
- Work closely with NIWA scientists to determine rainfall probabilities and low flow predictions.

The Regional Support Trust (RST) are actively monitoring the situation and liaising with the primary industry sectors to evaluate the impact (refer attached email).

Compliance with decision making processes:
The activities detailed in this report are part of the Council's day to day operations, they are provided for in Section 7.1.1(b) in the Council's 2012-2022 Long Term Plan and in the Council's 2013-2014 annual plan, and are therefore in accordance with the Council's decision making process and sections 76-82 of the Local Government Act.

The programme (along with other State of Environment programmes) also fulfils the Council's statutory obligations under section 35 (2)(a) of the Resource Management Act 1991.

Recommendations:

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1. That the report Climate and Water Resources – update by Dale Hansen, Water Resources/Hydrology Programmer Manager dated 20 November be received.

1. That the council supports the proposed response/monitoring plan.

Fig 1: NZ Rainfall Anomalies 1 November to 24 November 2013

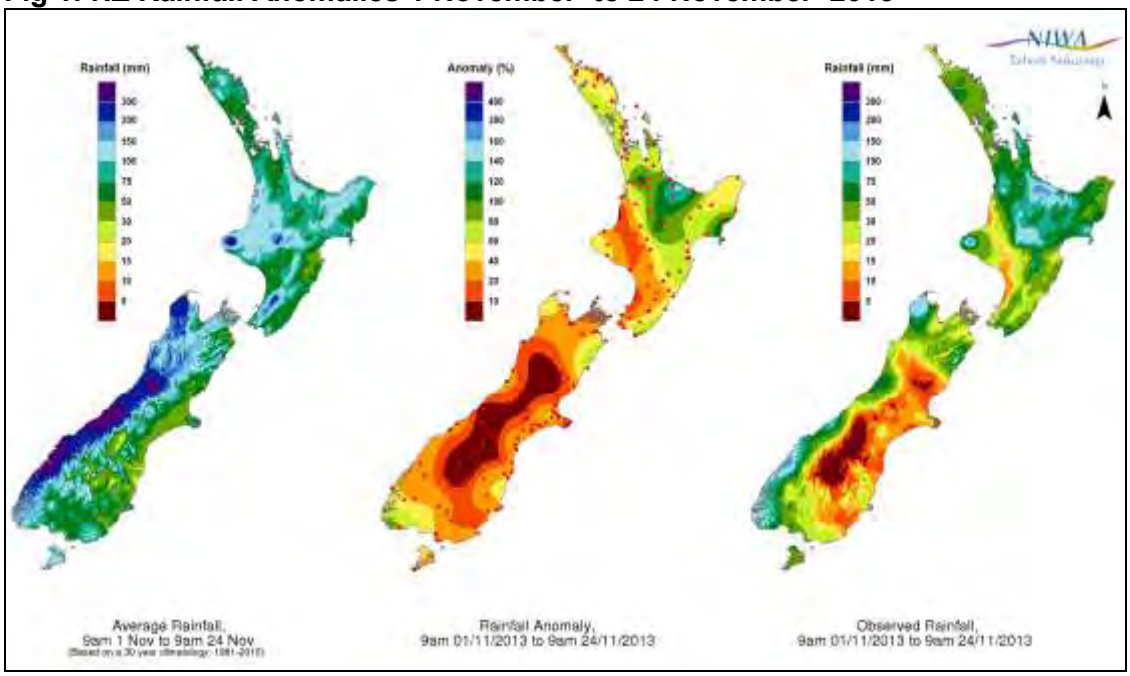

Fig 2: NZ Soil Moisture Deficits 1 to 24 November 2013

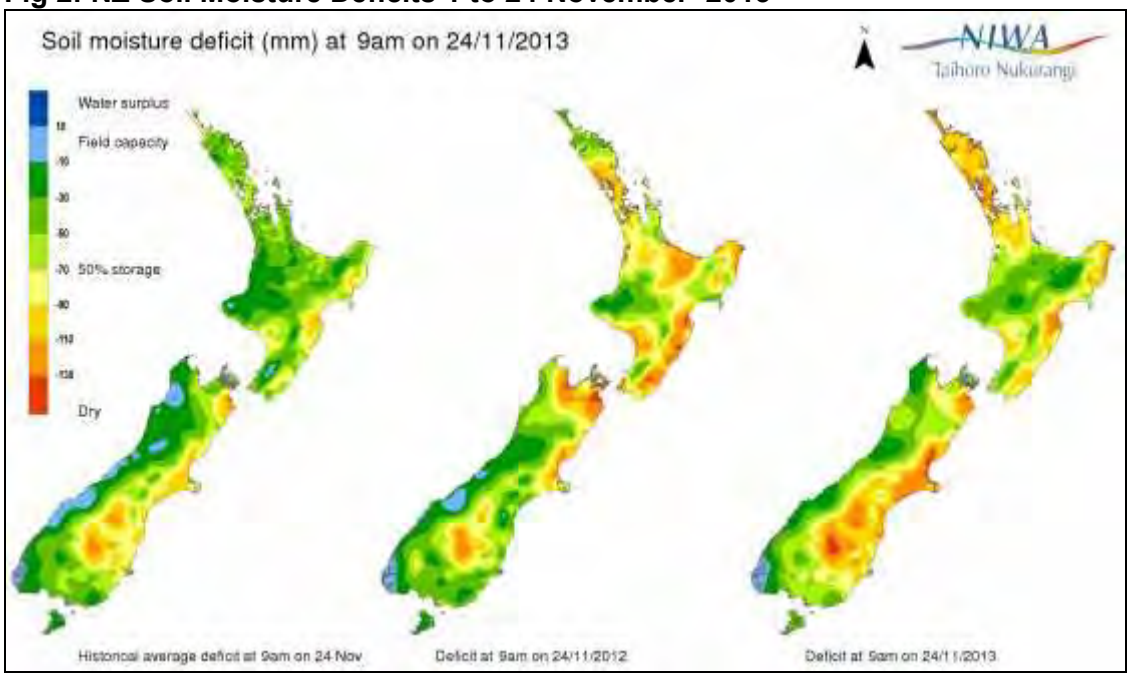

Fig 3: New Zealand Soil Moisture Deficit 24 November 2013

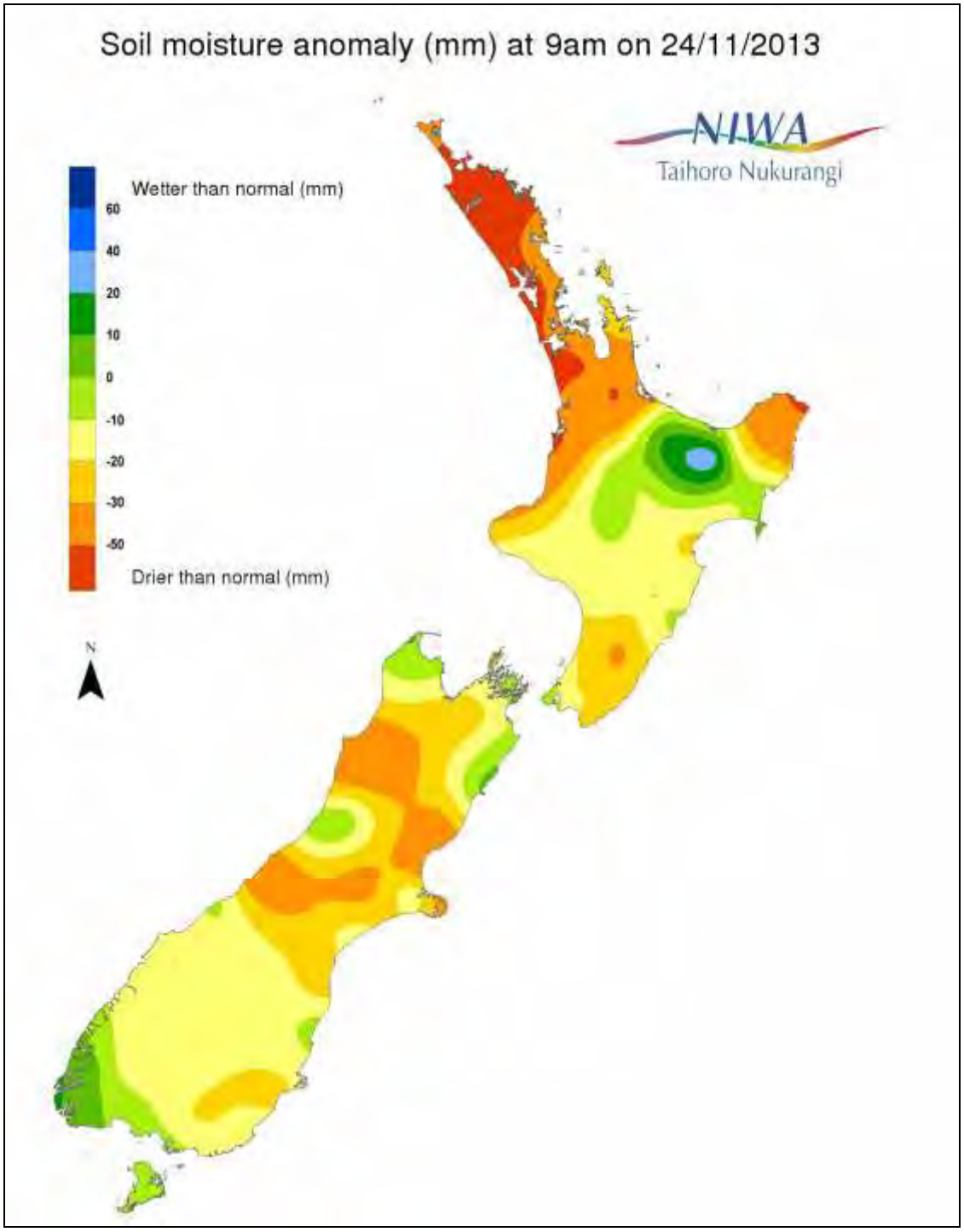

Fig 4: Rainfall Patterns (% of average) October 2013

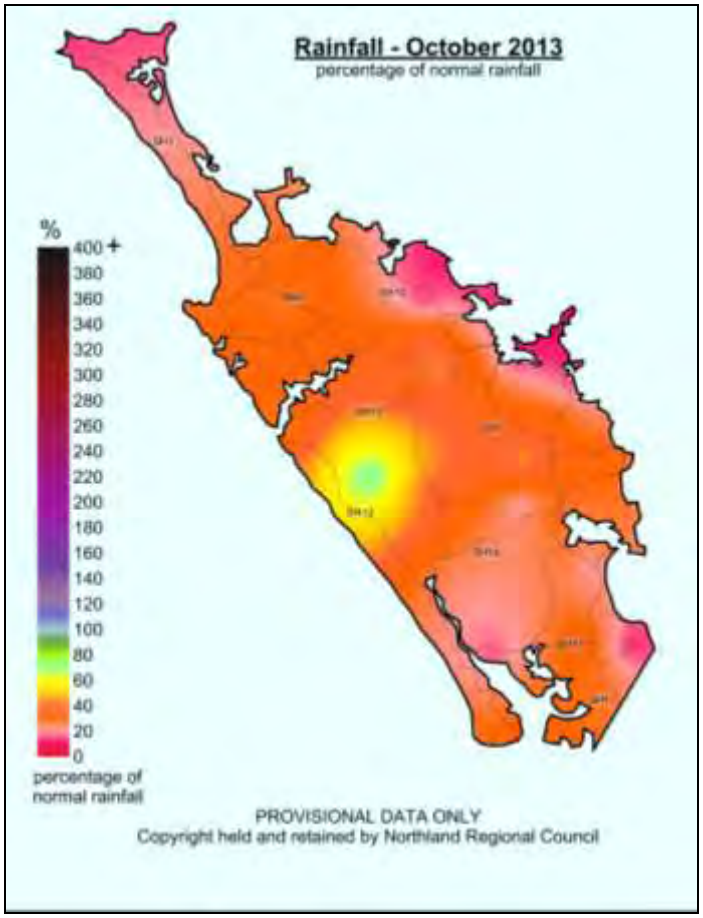

Fig 5:-Rainfall Amounts 1 November to 24 November 2013

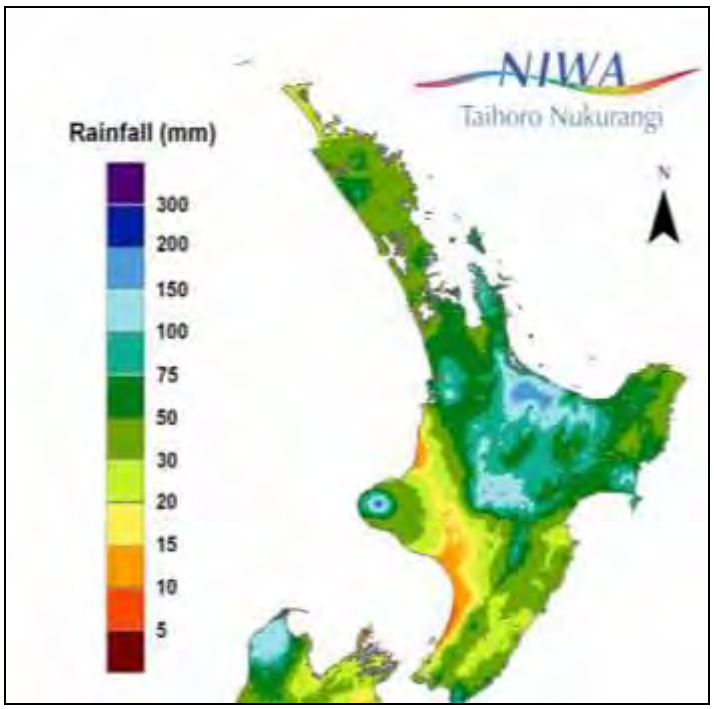

Fig 6: Kaitaia - Accumulative Rainfall Trends and Probabilities

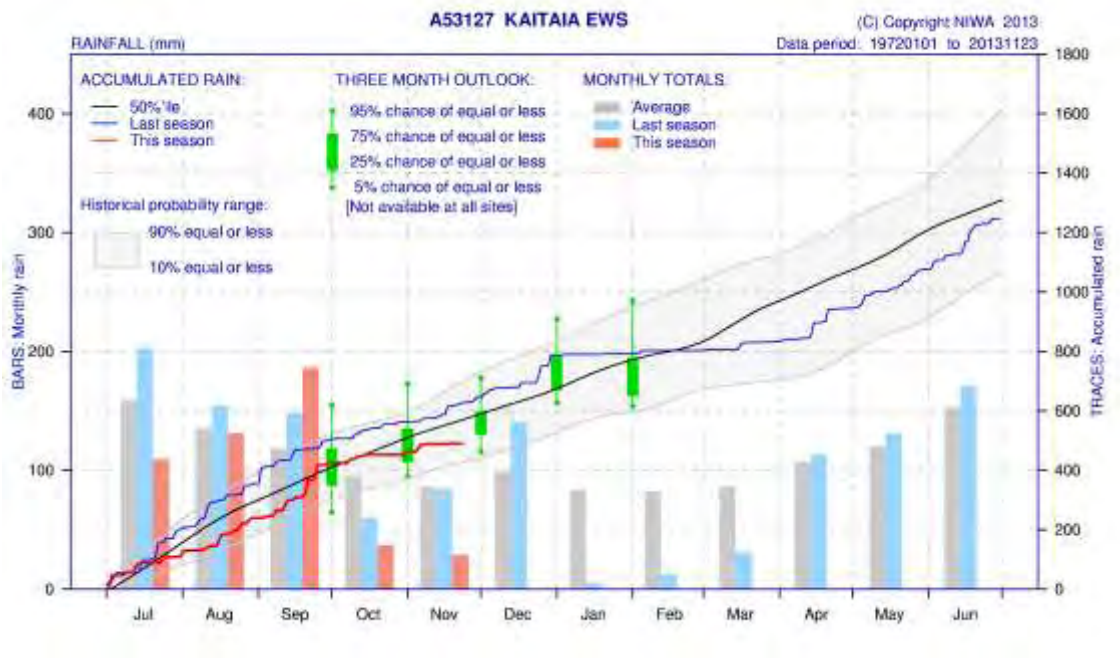

Fig 7: Kaitaia - Soil Moisture Deficits

Fig 8: Kerikeri - Accumulative Rainfall Trends and Probabilities

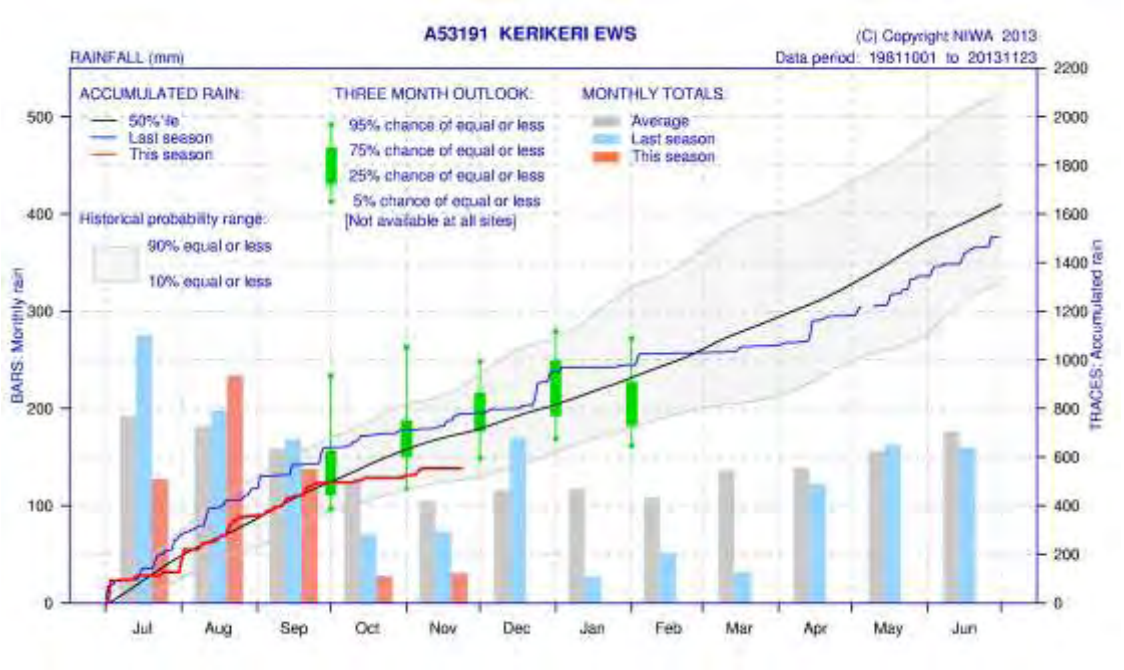

Fig 9: Kerikeri - Soil Moisture Deficits

Fig 10: Kaikohe – Accumulative Rainfall Trends and Probabilities

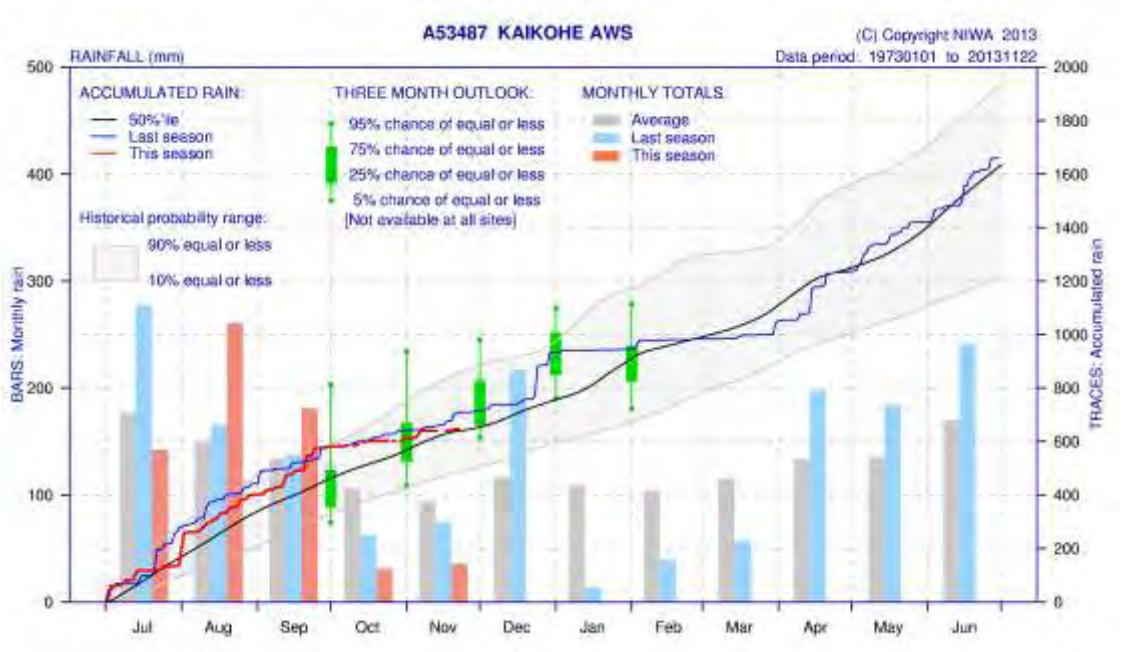

Fig 11: Kaikohe - Soil Moisture Deficits

Fig 12: Dargaville – Accumulative Rainfall Trends and Probabilities

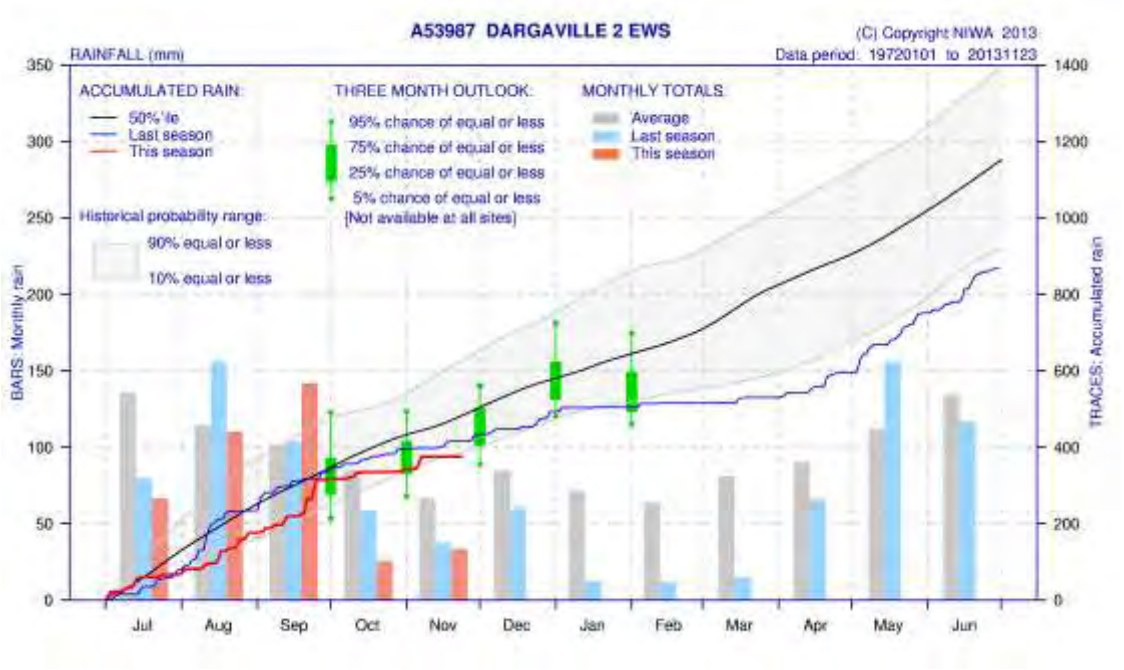

Fig 13: Dargaville - Soil Moisture Deficits

Fig 14: Whangarei Aero - Accumulative Rainfall Trends and Probabilities

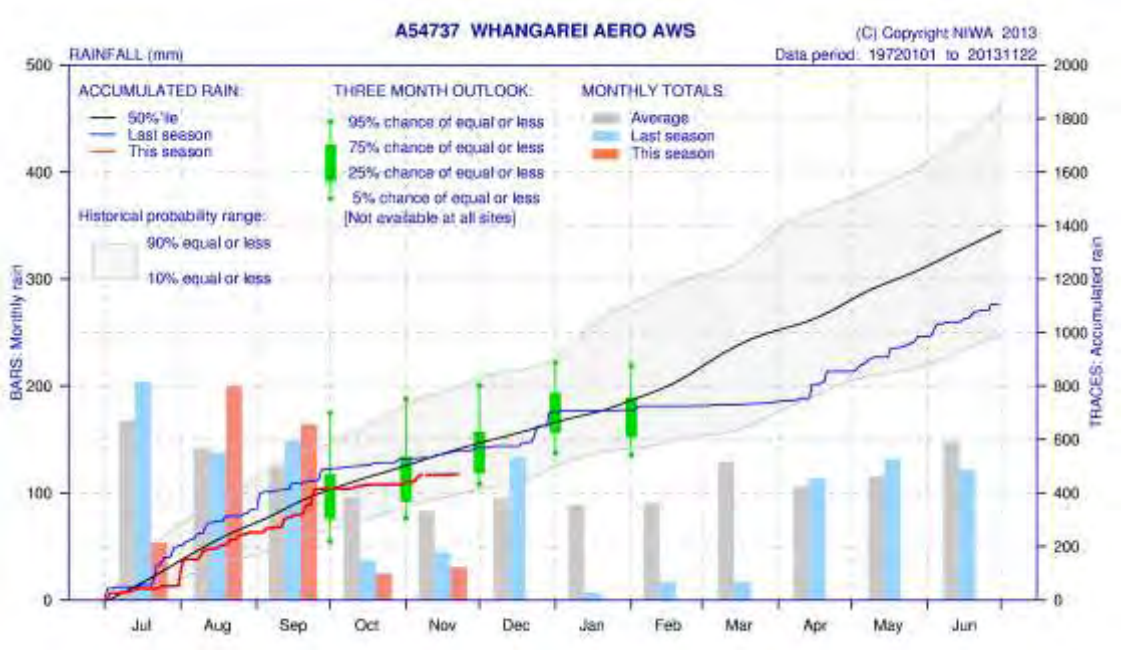

Fig 15: Whangarei Aero - Soil Moisture Deficits

Peternel McLean

From: julie <jkjonker@farmside.co.nz>
Sent: Monday, 25 November 2013 12:00 p.m.
To: Peter Houston; Pita Tipene; Alan Worsfold; Andre de Bruin; Dave Kelly; Don Kemp; John Wiessing; Julie Jonker ; Lindsay Wells; Mike Crum; Mike Eagles; Mike Schwed; Sue Culham; Angela Pearson; Chantal Gilmore; Charmaine O'Shea; Jason Prisk; Johnson Sam; Jules Newman; Kathryn De Bruin; Malcolm Jensen; Noel Gardner; Rod Parkinson; Shiralee McLean; Stuart Brown; Wayne Weber; Andrew Jolly; Ashley Cullen; Bob Campbell; Bob Thomson; Brian Hughes; Bruce Cutforth; Bruce Eyers; Chris Boom; Denis Anderson; Gareth Baynham; Helen Moodie - DairyNZ; James Muwunganirwa; John Blackwell; John Bryant; jparsonsnuffield@gmail.com; Julie Gregson; Kerry Brocks; Kevin Baxter; Laurie Copland; Linda Stewart; Luke Beehre; Matt Long; ray hollis; Richard Drake; Rob Philip; Roger Taylor; Scott Mabey; Scott Parker; Tafadzwa Manjala; Alan Bee; Auckland City Council email contact; Bill Hutchinson; David Neil; Donna Roberts ; Graeme MacDonald; KDC commissioners ; Richard Booth; Richard Woods; Tony Phipps; Trevor Andrews; Des Hamlin; Des Smeath; lisa.halvorson; Nigel Parton ; Rosalie Bakker
Cc: 'Angela Goodwin'; paul.lane@mpi.govt.nz
Subject: Northlands drying conditions - your input required please

Good morning

Another weekend that the forecast rain seemed to pass Northland by. Add a nice breeze to the sun and high temperatures and the recipe for robbing soils of moisture couldn't be more severe.

I have been discussing the continued drying of Northland with several contacts and the concerns are;
- this month growth has being limited by lack of soil moisture
- there are less supplements on hand or being made
- weather forecasts have been more unreliable than usual making planning difficult

Sectors are being proactive and have disseminated timely information to their members to ensure resiliance by making decisions early.

In the dairy industry the high payout will be softening the blow but another poor season will put additional pressure on already stretched finances.

In order to gain a clearer picture of how Northlands primary sector is being affected would you please "reply to all" so we can have a better idea of where help is needed and what risks are developing before they become issues. We do not need a large report but if everyone could just provide a brief update of their sector that would be much appreciated.

Kind Regards
Julie

Julie Jonker
RST - Northland Coordinator
P O Box 77
WHANGAREI 0140
Phone: 021 429 092

ITEM: 16

ISSUE: Fifty Years of Soil Conservation in Northland

ID: A595119

To: Environmental Management Committee, 26 November 2013

From: Bob Cathcart, Land Management Specialist

Date: 11 November 2013

Summary The purpose of this report is to provide the committee with a review of soil conservation works implemented in Northland over the last 50 years and to identify what worked and what could be improved.

Report Type:	☑	Normal operations	☑	Information	☐	Decision
Purpose:	☐	Infrastructure	☑	Public service	☐	Regulatory function
	☐	Legislative function	☑	Annual\Long Term Plan	☐	Other
Significance:	☐	High	☐	Moderate	☑	Low

Background

Not everyone gets an opportunity to re-visit the scene of some of their early soil conservation endeavours. In a paper presented to the New Zealand Association of Resource Management Annual Conference in Gisborne in early October 2013, Bob Cathcart, Land Management Specialist, looks back over various measures used to control soil erosion in Northland over the last 55 years. Attachment 1 is the full paper.

Some of the measures used were unique to the region and its subtropical climate and heavily weathered soils, and some involved modifications to measures commonly used elsewhere in the North Island. Some of these have worked, some could have worked better and some were, in retrospect, the wrong thing to do. The findings of the review will be presented at the **c**ommittee meeting.

Discussion

The review is part of a staff training and publicity package. The demise of Government soil conservation subsidies in 1988 resulted in a reduced demand for erosion control advisory work. This decline and a change in emphasis to water quality and biodiversity management means that few staff employed after that date have been involved in erosion control work.

The council's recognition of sediment being a major contaminant of water and its decision to provide financial support for approved works through the Environment Fund has lead to a resurgence in demand for advice and for soil conservation plant materials. A nursery has been established to supply poplars and willows, land management staff are being up-skilled, and they and the public are being given access to soil conservation information.

The current generation depends on the computer for information; if it isn't on the screen, it doesn't exist. One of the aims of this project has been to make as much of this knowledge accessible on-line or to explain where hard-copy information can be found.

With sediment recognised as a major contaminant and most phosphate entering our water bodies bound to sediment, soil conservation is recognised as a major component of a comprehensive water quality management programme. This project has helped to capture some of the corporate knowledge of past generations of staff and make it more readily available to today's staff.

Erosion control with poplars and willows
Northland is recognised in national surveys[1] as having amongst the highest incidence of gully erosion of any region in New Zealand. Deeply weathered soils with strongly developed columnar subsoil structure, highly erodible and, in places, very acid regolith, impermeable soils with high rates of runoff, and summer droughts broken by sub-tropical high intensity rainstorms all encourage this form of erosion.

Most of these gullies can be prevented or active erosion controlled by traditional paired willow planting; trees are planted on either side of the channel and their fibrous root mass soon lines the channel. But what happens when the willows die?

It was common practice in the 1960s and 70s to fence and plant an eroding gully with willows and then to establish a pine woodlot on the land between the gully and the fence. There are now several examples of these pine plantations shading and killing the willows and the gully erosion again becoming active.

Similarly, willows planted in gullies on land converted to production forestry have been smothered and the gullies have again becoming active. Shallow-rooted pines are no match for this form of erosion and, in one case in the Mangakahia River valley, trees on adjoining slopes are sliding into the gulch. The whole basin, including a local road and farmland uphill of the road, is again on the move.

Deep-seated earthflows on sandstone and mudstone hill country were planted with poplars to gain enough land stability to enable pastoral farming. Willows were planted to control streambank erosion and poplars were used to stabilise adjoining hillsides. When these areas were converted to production forestry in the 1980s, the poplars and willows were felled and sometimes poisoned. Just as with willows planted in gullies, the pines have smothered out the poplars and willows and these forms of erosion have re-activated, toppling pines into the river systems

The lessons:

> **Deep-rooted soil conservation tree species like willows and poplars are smothered out by shallow-rooted pine forests, they die and the land again erodes. Poplars and willows strategically planted for erosion control should be protected within plantation forests.**

In retrospect, planting pines to infill fenced areas around willow-planted gully heads was a bad move; they have shaded out the willows and the gullies have begun to erode. In more recent times, poplars and even natives have been planted outside of willows in gullies. The willows are able to compete with these slower growing species. Where there is a seed source, birds will do the 'planting'.

Similarly, not all land is suited to intensive production forestry. Production forests of the future should comprise a mosaic of:

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[1] Harmsworth, 1996

- intensively managed short rotation production forest on the best land;
- erosion-prone land growing deep-rooting poplars or similar species;
- willows surrounded by other deciduous trees along erosion prone gullies and along streambanks;
- longer-rotation production/protection forest on marginal land; and
- pockets of native in gully heads and along riparian areas.

Management of soil conservation plantings
Hundreds of thousands of poplar and willow poles were planted during the 1960s, 70s, 80s and 90s to prevent and control gully, tunnel gully, earthflow and slip erosion. We gave advice, drew up planting programmes, supplied poles and assisted farmers with their work schemes.

With greater emphasis on water management under the Resource Management Act, resources were not available to maintain an advisory service to landowners. Not only did the poplar and willow planting programmes grind to a halt, so too did the contact with former soil conservation clients and advice on management of their plantings. Trees weren't pruned or thinned and soon started shading out pasture.

Not only did the poplar and willow planting programmes grind to a halt, so too did the contact with former soil conservation clients and advice on management of their plantings. Trees have not been pruned or thinned and are shading out pasture. The next generation of farmers, many of whom have not experienced the erosion problems that led to the plantings, are removing the trees and some of the land is moving again.

Lessons learned

> **Most soil conservation works will require ongoing management, particularly poplar and willow planting. The council is back into soil conservation works but this time round needs to place as much emphasis on management of the trees as on establishing them in the first place.**

Land Resource Inventory and Land Use Capability
With the NZ Land Resource Inventory being used in regional and district plans to define areas requiring special management, it is essential that any anomalies are corrected and people can have confidence in the data set.

There are 'mistakes' in the current dataset for Northland due mainly to field assessments being done by people with little knowledge of Northland. These mistakes are understandable if the land is only viewed during a short period of the year. A survey in spring or autumn will paint a very different picture to a visit in the depths of winter or during a summer drought.

Another concern is the NZLRI, because it is in digital form, is being used to generate 1:50,000 scale soil maps – the Fundamental Soil layer on GIS. Only the dominant soil type is shown for each polygon so the presumption is that it is the only soil type. This may not be the case as a single LUC unit may cover several soil types - simple but wrong or misleading.

How can these datasets be corrected?

Amongst the recommendations of the workshop in Christchurch in 2012 was that a mechanism be set up to enable corrections, updates and more detailed surveys to be incorporated into the NZLRI. Mapping anomalies can be corrected by consultation with and input from experienced field practitioners from within regional councils. Landcare Research Ltd is charged with maintaining these databases so all that is needed is a dedicated Landcare Research liaison officer.

Graded Banks

Graded banks or 'contour drains' were used to control runoff, prevent erosion and provide drainage during the development of large areas of easy gumland during the 1960s and 70s. Much of this land is now supporting intensive dairy farming and the soils have changed markedly over the last 40 or more years, so much so that this form of drainage is no longer necessary. It is still, however, a method that should be employed when developing gumland.

Gully control structures

It may not always be possible to control gully erosion using only willow planting. Detention dams may be required to slow the rate of water flow over the gully head, structures such as flumes may be required to carry water safely over gully heads, and various forms of grade control structures in the body of the gully. Similarly, we would use armouring of various sorts, supported by willow planting, to control streambank erosion. The problem we face is that we don't use them very often in Northland so we should source plans, guidelines, designs, etc., from councils that do and consult with someone who does this sort of work more often than we do.

Revegetation of difficult sites

Amongst the material spread over Northland in the Northland Allochthon, a 250 km long, 70 km wide and 7 km deep landslide that buried Northland some 25 million years ago, are deposits of acid sulphate shale. Not only is this material highly erodible but when exposed is extremely difficult to revegetate. Water mixing with sulphides in fresh material exposed by gully erosion or by earthworks produces sulphuric acid. A pH of 1.6 was recorded in large amphitheatre-shaped gullies near Ngawha and 2.3 in a road cutting on SH1 south of Whangarei.

The other hostile environment in Northland is the subsoil of very old soils on basalt and dolerite volcanic rocks. Weathering and leaching of these iron and aluminium-rich parent materials strip the topsoil of clay, iron and aluminium and concentrates these in the subsoil. At low pH there are free ions of both iron and aluminium which fix any available phosphate and many other essential nutrients, starving plants - aluminium itself is toxic.

Prevention is a lot easier than cure -it is important to avoid or prevent exposure of these difficult materials or, if they are exposed, to neutralise or cover them. Investigations for earthworks should include identifying such difficult material and measures included in contracts to ensure adequate revegetation. This applies in particular to roadworks.

Soil conservation plants
Having a different climate, able to grow subtropical plants, and having some difficult sites requiring revegetation, we have tried all sorts of soil conservation plant species. In retrospect, thankfully many of them have failed. A good erosion control plant, to do its job, must be easily established and often on difficult sites. We need to take a precautionary approach when considering new species to avoid weedy, difficult to control, species.

Legal compliance and significance assessment:
The activities detailed in this report are provided for in the council's 2012-2022 Long Term Plan and as such are in accordance with the council's decision-making process and sections 76-82 of the Local Government Act 2002.

In relation to section 79 of the Local Government Act 2002, this issue is considered to be of low significance under Council policy because the report does not seek a decision other than that information be received.

Recommendation:

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1. That the report Fifty Years of Soil Conservation in Northland by Bob Cathcart, Land Management Specialist, and dated 11 November 2013, be received.

WHAT WORKED AND WHAT DIDN'T - A REVIEW OF SOIL CONSERVATION TOOLS AND PRACTICES EMPLOYED IN NORTHLAND

Bob Cathcart
Land Management Specialist
Northland Regional Council
18 September 2013

The opinions expressed in this paper are strictly those of the author.

Not everyone gets an opportunity to re-visit the scene of some of their early soil conservation endeavours. I have had the privilege to be able to review soil conservation measures that were once 'bread and butter' in Northland, measures that were unique to the region and its subtropical climate and heavily weathered soils, and adaptions we had to make to measures commonly used elsewhere in the North Island. Some of these have worked, some could have worked better and some were, in retrospect, the wrong thing to do.

This review is part of a staff training and publicity package. The current generation of staff depends on the computer for information; if it isn't on the screen, it doesn't exist. I have no problem with that, it just means we have to make sure our corporate knowledge is readily available in electronic form. I just hope that those using this information think about what they are reading, understand and adapt it to meet their needs and the needs of their clients, and not just accept it as gospel.

The majority of our staff and politicians have been brought up on a diet of biodiversity and water quality, the flood control and soil conservation practices of the catchment boards being replaced by water quality and biodiversity doctrines. This is despite, year after year, the state of the environment reports identifying sediment as the major contaminant of water in our rivers, estuaries and harbours. Thankfully, there is now an acknowledgement that soil erosion has a major impact on water quality and that sustainable land management is really just soil conservation in drag. It is time to get back out there and promote soil conservation.

Let's consider some of the tools we have used and whether they are still relevant.

GULLY CONTROL WITH WILLOWS

Northland is recognised in national surveys (1) as having amongst the highest incidence of gully erosion of any region in New Zealand. Deeply weathered soils with strongly developed columnar subsoil structure, highly erodible and, in places, very acid regolith, impermeable soils with high rates of runoff, and summer droughts broken by sub-tropical high intensity rainstorms all encourage this form of erosion.

Most of these gullies can be prevented or active erosion controlled by traditional paired willow planting; trees are planted on either side of the channel and their fibrous root mass soon lines the channel. But what happens when the willows die?

One of the earliest gully control tree plantings I have found is some pair planted pussy willow (*Salix discolor*). The trees, planted some time prior to 1940, lined and had by 1965 controlled erosion in a deeply entrenched channel spilling over the middle of a 50

hectare slumping basin. The whole area was converted from farmland to pine forest in the planting boom in the mid-1980s.

Gully erosion Waimatenui 1943

20 years later we received complaints from pastoral farmers further down the catchment claiming that pine trees carried down in floodwaters were taking out their fences. The pines had smothered out the willow trees and the gully had begun to erode. Shallow-rooted pines are no match for this form of erosion and trees on adjoining slopes were sliding into the gulch. The whole basin, including a local road and farmland uphill of the road, is again on the move.

Gully erosion Waimatenui, 2007

The same problems occurred on farm. The farm forestry movement was strong in Northland in the1960s and landowners were encouraged to consider multi-purpose tree plantings. Eroding gullies were fenced to exclude stock, pair planted with willows and the land between the gully edge and the surrounding fence planted, usually with pines.

Twenty years on, the pines have matured, cutting off light to the willows which have now died and the gully is again eroding.

Pines collapsing into gully, Titoki

The lesson: **In retrospect, the pines were a bad move; they have shaded out the willows and the gullies have begun to erode.** In more recent times, poplars and even natives have been planted outside of willows in gullies. The willows are able to compete with these slower growing species. Where there is a seed source, birds can do the planting for you.

UNSTABLE LAND WITHIN FORESTRY BLOCKS

Some of the large-scale forest establishment in the 1980s, over 150,000 hectares over a five to eight years period, involved felling poplars and willows planted to control tunnel gullies, open gullies, slips and earthflows on farmland. The stumps of some of some the soil conservation trees were painted with herbicides and the regrowth of others sprayed. Erosion which had been brought under some control by poplar and willow planting began to move as soon as the tree roots rotted.

Pines were planted right to the top edge of the river banks. What this blanket coverage failed to recognise was that streams within pastoral catchments differ from those within forested catchments. Whereas streams in a pastoral catchment have sloping banks growing grass and a relatively narrow but deep channel, those in a bush/forested catchment have vertical banks and a wider, shallower cross-section. When a pastoral catchment is converted to forest, the river will erode away its banks to re-establish a bush-regime cross section. Trees planted too close to the banks will be undercut by streambank erosion and topple in.

Pines toppling into riverbed, Mangakahia

In other areas, regrowth bush in gully heads, erosion-prone sites on which pastoral farming had been abandoned and bush had regenerated, was cleared and the whole area planted. These gully heads are naturally prone to slipping, something the pines can't prevent. It has been costly to log these difficult sites and meet environmental standards, and returns have barely covered costs. Foresters are learning, like farmers before them, the returns don't justify the effort.

The lesson: Not all land is suited to intensive production forestry.

Just like pastoral farming, I expect production forests of the future to comprise a mosaic of:

- intensively managed short rotation production forest on the best land;
- erosion-prone land growing deep-rooting poplars or similar species;
- willows surrounded by other deciduous trees along erosion prone gullies and along streambanks;
- longer-rotation production/protection forest on marginal land; and

- pockets of native in gully heads and along riparian areas.

GRADED BANKS

Large areas of Northland gumland, gently sloping to easy rolling land with strongly podzolised soils, suffered years of abuse before it was developed for farming in the 1950s. It had been dug over for gum, its sparse vegetation frequently burned and varying proportions of the soil profile lost to sheet and gully erosion. In some areas, attempts were made to grass an almost pure silica pan A_2 horizon, in places all the silica pan had been eroded and a sticky clay B_2 horizon exposed, and other places the peaty O_2 horizon was still intact but in boggy seepages.

Pasture establishment was patchy, with patches of eroding bare ground between dense infestations of rushes. Attempts to drain the seepages by cutting drains downslope were not only ineffective but soon developed into deep gullies. What was needed was a safe way of managing water.

The Soil Conservation section of the Ministry of Works, for a short period, Department of Agriculture, began trialing graded banks as a mechanism in 1958. John Bartleet and his team found that water drained through the topsoil, where it existed, for about 30 metres before coming to the surface as a line of seepages. There were also seepages where groundwater seeped out of the underlying rock. 'Contour drains' or graded banks were constructed on a grade of 1:100$^{\pm}$ at 20 to 30 metre intervals, discharging into planted natural drainage depressions or into constructed grassed waterways.

These were larger banks than the single furrow ones constructed by Dan Hickey and his mates in North Canterbury. A road grader cut a bank of much greater cross-section, a wide V-drain cut about 50cm into the soil, with the spoil being turned out and compacted on the downhill side to further increase capacity. It was possible to drive across the bank in a tractor or bulk fertiliser spreader.

Cross-section of almost completed graded bank

I went straight into the field with MWD Soil Conservation Technician Horace (Judd) Juddery on starting work with the Northland Catchment Commission in January 1965, surveying and building graded banks. Over the next six years I built banks over 1,500 kilometres of banks. While most of it was on land already converted to pasture, some was badly eroded land still in scrub.

I was recently asked whether I would still use graded banks or would laser drains be more effective. Firstly, drainage was not the only reason for building the banks. They were built to control how water rain off this highly erodible land. Once water is brought under control, pH raised by liming and improved pasture established, careful rotational grazing quickly improves soil structure. Instead of plant litter forming peat on the acid soil surface, it breaks down to humus and is incorporated into the upper layers of the silica pan and down between the columns of the subsoil. Instead of these preferential flow paths sealing back over every winter, they remain open for longer periods each year. Topsoil builds rapidly under careful rotational grazing and avoidance of pugging.

Some farmers have replaced graded banks with laser drains on land originally developed using banks and it will be interesting to follow their success. One of the problems of subsurface drainage has been that the structureless silica pan, in places a metre or more thick and setting like concrete in summer, becomes completely fluid in winter, sealing off cracks down which water drains. The build up of organic matter may well be sufficient to provide access to the subsurface drains.

It will also be interesting to see whether the laser drains, some cut on steep grades, erode with water piping along the outside of the plastic piping.

Lesson learned: Yes, if developing a reverted patch of gumland I would still use graded banks as part of the development programme.

GULLY CONTROL STRUCTURES

Like soil conservators in other regions, we too used structures to help control gully erosion. Being a small team we worked very closely with our river engineers so it was not too difficult to get them to check our design for 5 metre high, 100 metre long detention dams. These dams were built within the catchments of deep sand gullies on the west coast to pond runoff and regulate the flow of water over the gully head. Wooden flumes carried the restricted flow safely over the gully head with heaps of debris used to dissipate the energy. Shrubby pussy willows, silver poplar, coral tree and other species able to withstand salt spray were then used to stabilise the gully.

Gullies in acid shale rocks at various sites in Northland cut down 10 to 20 metres into this very nasty material. With a pH of 2.5 or less, this was no place for plants. As the gully cut down, the sides crumbled in exposing more of the acid material. We used netting dams to trap and build up gravel, stabilising the base and slowly the sides. The offending sulphides leached out of the sides of the gully and eventually manuka was able to take over. We found that coral tree, which has a fibrous root system similar to willows, was able to grow on lower pH material than other exotic species and assist in stabilising these gullies.

Lessons learned: **Yes, we would again use structures like detention dams, flumes, debris dams, etc. Similarly, we would use armouring of various sorts, supported by willow planting, to control streambank erosion.** The problem we face

is that we don't use them very often so need plans, guidelines, designs we can refer to, and preferably be able to consult with someone who does this sort of work more often than we do.

REVEGETATING DIFFICULT SITES

Amongst the material spread over Northland in the Northland Allochthon, a 250 km long, 70 km wide and 7km deep landslide that buried Northland some 25M years ago, are deposits of acid sulphate shale. Not only is this material highly erodible but when exposed is extremely difficult to revegetate. Water mixing with sulphides in fresh material exposed by gully erosion or by earthworks produces sulphuric acid. We recorded a pH of 1.6 in large amphitheatre-shaped gullies near Ngawha and 2.3 in a road cutting on SH1 south of Whangarei.

The first step with gully erosion was to stop degrade of the gully floor. Gravel trapped by debris dams supported the sides of the gully so that they didn't fritter away and expose fresh material. The next step was to raise the pH – agricultural lime is cheap! We then mulched the surface to reduce evaporation from and concentration of sulphides on the surface – sewage sludge is about 10% dry matter and knits up just like spray-on paper mulch.

Smeaton's Hill, SH1, Whangarei

The final step was to get something to grow. Manuka can withstand the lowest pH and is a pioneer species once the surface is stabilised and the sulphides are leached out.

The other hostile environment we enjoy is the subsoil of very old soils on basalt and dolerite. These are iron and aluminium-rich parent materials. Weathering and leaching strips the topsoil of clay, iron and aluminium and concentrates these in the subsoil. At low pH there are free ions of both iron and aluminium which fix any available phosphate and many other essential nutrients, starving plants - aluminium itself is toxic.

Again, the challenge is to hold it in place, raise the pH, reduce the concentration of nasties and then get something to grow.

Lessons learned: **Prevention is a lot easier than cure** – avoid exposing these difficult strata when possible by preventing gully erosion or controlling degrade before it reaches the bad stuff. If they are going to be exposed by excavation, for example during road

construction or site development, be prepared and make sure they are well covered during reinstatement.

SOIL CONSERVATION PLANTS

Having a different climate, able to grow subtropical plants, and having some difficult sites requiring revegetation, we have tried all sorts of soil conservation plant species. In retrospect, thank heavens many of them have failed. . If you want to wind up the biosecurity team, talk about planting pampas grass, *Arundo donax*, silver poplar, crack willow, coral tree (*Erythrina sykseii*) and even kudzu. [The Department of Agriculture had kudzu trials at Kiripaka in 1946, just east of Whangarei but unfortunately/thankfully, it didn't grow as well as they hoped.]

Kudzu trial, Glenbervie, 1946

We were careful not to plant these species where they could spread downstream and on sites completely surrounded by well grazed pasture.

I do confess to using crack willow for streambank stabilisation work because they were the only poles we could get. In retrospect, that was not a good move but we were desperate. Which is worse, planting a weed and keeping the engineers busy clearing the channels in the future or allowing serious streambank erosion to continue unchecked?

Coral tree does have a place on difficult, particularly dry sites. It is a legume that is not eaten by stock so is easily established. So was silver poplar a good choice until silver

leaf almost wiped it out. I wouldn't use pampas grass and *Arundo donax* now but remember that Townsends were selling pampas for shelterbelts and for stock feed back then.

Sand gully planted with pines, silver poplar and Arundo donax

Lesson learned - A good erosion control plant, to do its job, must be easily established and often on difficult sites. We need to take a precautionary approach when considering new species to avoid weedy, difficult to control, species.

MANAGEMENT OF SOIL CONSERVATION PLANTINGS

Hundreds of thousands of poplar and willow poles were planted during the 1960s, 70s, 80s and 90s to prevent and control gully, tunnel gully, earthflow and slip erosion. We gave advice, drew up planting programmes, supplied poles and assisted farmers with their work schemes. Catchment boards worked very closely with their local branches of the Farm Forestry Association with ongoing management of soil conservation plantings a popular field day topic.

The subsidy schemes had run out by 1990, local government was restructured and the Resource Management Act changed the focus to water management. While sediment is identified as the most serious contaminant of water in Northland, resources for soil conservation were withdrawn and the function effectively died. Those who remained in the land management field became more interested in indigenous biodiversity. We even had councils adopting a 'natives only' policy in respect of revegetation.

Not only did the poplar and willow planting programmes grind to a halt, so too did the contact with former soil conservation clients and advice on management of their plantings. Trees weren't pruned or thinned and soon started shading out pasture. The next generation of farmers, many of whom had not experienced the erosion problems

that led to the plantings, set about removing the trees. I am watching these cleared areas, waiting for them to start moving again. One large and very active landslide, which was stabilised and then planted in forest, has had the trees harvested and now has two or three houses sited on the flow.

Poplars overdue for pruning and thinning

Lesson learned: Most soil conservation works will require ongoing management, particularly poplar and willow planting. We are back into soil conservation works but this time round we need to place as much emphasis on management of the trees as we do on establishing them in the first place.

LAND USE CAPABILITY

The Northland Catchment Commission was the first catchment authority in New Zealand to complete and publish an inch to the mile (1:63,360) land resource inventory and land use capability survey of is region. Brian Burridge commenced the surveys in 1964 and we published them, plus one of the Kawakawa River catchment just north of our boundary, along with soils conservation reports in 1967. Gary Fitzwilliam mapped an area around the Kaipara Harbour when our boundary was moved south in 1973.

In doing the surveys we were lucky to have geology maps at a scale of 1:63,360 over about half of the area and detailed soil maps, at the same scale, over the whole area. While the layout of inventory data differed from that in the later MWD Worksheets, the same rock type, soils, slope, erosion and vegetation data were recorded. We recorded only LUC class, not subclass or unit.

The survey work was interspersed between on-farm soil conservation advice and whole-farm schemes, most based on detailed land inventory and LUC maps. We didn't just give advice but got our hands dirty establishing a poplar nursery, harvesting, delivering and even planting poplar and willow poles, building detention dams, debris dams, flumes and graded banks.

I mention this on-farm work at this stage because through it we developed a good understanding of the land resources we were surveying. The outputs from the surveys were a soil conservation report, with recommendations, for each catchment and a consolidated report for the whole catchment area. A land resource inventory map and a land use capability map were also published for each catchment.

As Gary was drafting up his final Kaipara maps we received a visit from Charles Harris and a youngster called Garth Eyles. These two scientists from the Ministry of Works and Development had embarked on a nation-wide land resource inventory and land use capability survey and made us an offer we just couldn't refuse. If we would redraft our maps to their resource inventory format and add subclasses and units, they would buy them from us.

The rest is history; our surveys came out in the first set of MWD Worksheets and, for a time, Garth Harmsworth maintained that data.

The survey of the rest of Northland was done by MWD teams. Unfortunately, these survey team members only experienced one or at most two seasons in Northland, usually over the summer months, and I am now challenging their LUC and LUC unit assessments. An area of Awanui River floodplain south of Kaitaia has been assessed as Class 2. Unfortunately this area is inundated by fast flowing floodwaters to a depth of a couple of metres three or four times every year. Similarly, the floodplain north of Kaitaia is assessed as Class 2 when the Awanui River Flood Management Scheme, now that we have restored it to its design standard, only provides protection from 1:20-year flood events.

Rolling to steep hill country on old volcanic rocks in the Far North have been assessed the same Class 6e2 as steep but much more fertile hill country in the middle of Northland. They have soils in the same soil suite, nominally from the same parent material. However, at a certain stage of soil development within this suite and perhaps on slightly different parent material, deeply weathered red clays are produced. These soils are more deeply weathered and have a much higher proportion of colloidal clay. This clay has washed down through the profile and concentrated in the subsoil along with aluminium. This very dense and aluminium-rich subsoil prevents plant root penetration, both physically and chemically. Free aluminium is toxic to plant roots at low pH. This makes the soil unsuited to tree growth and shallow-rooted pasture very susceptible to droughts and to slipping.

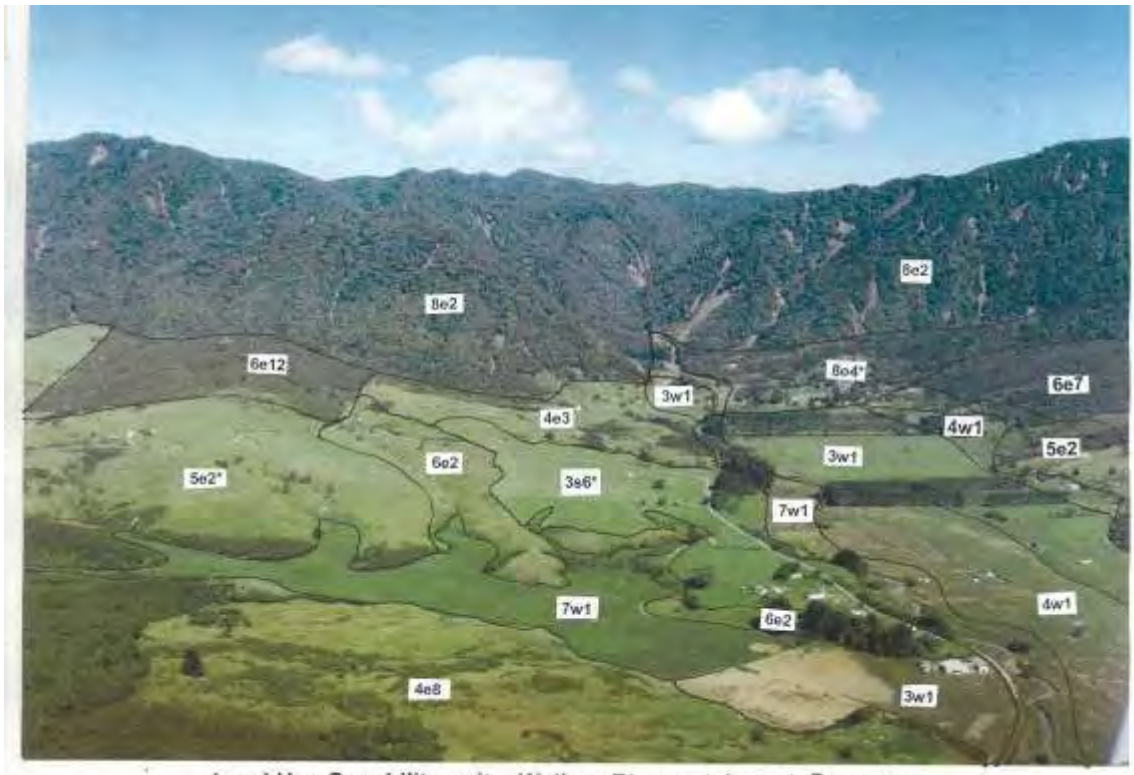
A similar problem has occurred on the older soils formed on basalt. Whereas Burridge separated the younger soils on basalt lava flows from the older soils, the NZLRI lumps them together. Again, the younger soils on basalt lava flows should have been separated from the really old ironstone soils, latterites, around Kerikeri and Okaihau. While the younger soils can sustain fruit trees like avocado, the same types of crop would quickly die due to the impeded drainage on the older soils. We even have an area mapped as Class 1c at Waimate North on a 'middle-aged' soil with a clay pan.

These mistakes are understandable if these areas are only viewed during a short period of the year. A windscreen survey in spring or autumn will paint a very different picture to a visit in the depths of winter or during a summer drought.

Another problem that has arisen is the NZLRI, because it is in digital form, is being used to generate 1:50,000 scale soil maps – the Fundamental Soil layer on GIS. Only the dominant soil type is shown for each polygon so the presumption is that it is the only soil type. This may not be the case as a single LUC unit may cover several soil types.

The third concern is an attempt to simplify the soil maps. Whereas the original soil surveys by Taylor and Sutherland in the 1940s, updated in the 1970s by Cox, mapped some polygons with two or more soil types, indicating that there is a mosaic of more and less developed soil types, a single soil type name has now been assigned. Again, simple but wrong or misleading.

How do we correct these data sets?
Quite simple, implement the recommendations of the Land Use Capability Workshop in Christchurch in October 2012.
Amongst the recommendations of the workshop was that a mechanism be set up to enable corrections, updates and more detailed surveys to be incorporated into the NZLRI. Each of the issues I have raised can be corrected by consultation and input from experienced field practitioners; we just need access to a dedicated Landcare Research liaison officer. With NZLRI being used to define areas requiring special management, it is essential that any anomalies are corrected and people can have confidence in the data set.



Land Use Capability units, Waihou River catchment, Panguru

URBAN LAND USE CAPABILITY
Allan Chandler, District Water and Soil Officer, returned from a visit to New South Wales in 1975 with urban land use surveys of land on the outskirts of Sydney. In 1976 Geoff Heaps, then with MWD, and I produced the first urban land use capability maps in

Northland. They covered Paihia, in the Bay of Islands, and were used to support a MWD and NCC challenge to urban zoning of erosion-prone land in a review of the local district plan.

Geoff and I used the same land resource inventory approach used for rural land to assess risks to urban use due to flooding, erosion, instability and settlement, and on the ability of land to assimilate septic tank effluent.

The NCC then went on to survey areas at Mangawhai, around Whangarei City, Hikurangi, Opononi-Omapere and all of the settlements around the shores of the Bay of Islands. In the last couple of years I have mapped areas in the Hokianga and along east coast from Taupo Bay to Te Ngaere. These most recent surveys have been within Priority River Catchments, catchments with the greatest need for flood risk reduction measures. The surveys complement and provide upper catchment detail for the modelling work being done by the Rivers Team.

The data is supplied to the respective district councils as a guide to where urban land development could take place or where it should not. In each case mapping has taken place both in the field, polygons being initially defined on aerial photography in the office and then field checked, or vice versa. The scope of both the inventory and the ULUC assessments is limitless. You gather whatever data you need to help you identify and rank land at risk or, conversely, land more suited to development. That is, if you think the risk is too high on one area of land, is there other land onto which you can encourage development.

Land resource inventory, luc and urban land use capability survey, Pawarenga

Despite all this data being made available to the district councils and the regional council, the data is not being used.

Lesson learned: Soil conservators/land management officers are not pushy enough. Urban land use capability mapping is a very valuable hazard avoidance tool. We need to promote its use and be prepared to defend it and its findings before the Environment Court where necessary.

References

(1) ***Harmsworth**, Garth R., Land use capability classification of the Northland region: a report to accompany second edition New Zealand Land Resource Inventory. Manaaki Whenua Press, 1996.*