

Rotorua Te Arawa Lakes Strategy Group

NOTICE IS GIVEN

that the next meeting of the **Rotorua Te Arawa Lakes Strategy Group** will be held in **The Council Chamber, Rotorua Lakes Council, Civic Administration Building, 1061 Haupapa Street, Rotorua** on:

Friday, 8 September 2017 commencing at 10.30 am.

Morning tea will be available from 10.00am with the meeting commencing at 10.30am.

Mary-Anne Macleod
Chief Executive
Bay of Plenty Regional Council Toi Moana
1 September 2017

**Bay of Plenty Regional Council,
Rotorua Lakes Council and
Te Arawa Lakes Trust.**

*Working as one to protect our lakes with funding
assistance from the Ministry for the Environment.*



Rotorua Te Arawa Lakes Strategy Group Terms of Reference

Interpretation

In these Terms of Reference:

“Organisations” means the Te Arawa Lakes Trust, the Rotorua District Council and the Bay of Plenty Regional Council.

“Rotorua Lakes” means Lakes Rotorua, Rotoiti, Rotoehu, Rotoma, Okataina, Tikitapu, Okareka, Tarawera, Rotomahana, Rerewhakaaitu, Okaro and Rotokakahi.

“Group” means the Rotorua Te Arawa Lakes Strategy Group, formed as a Joint Committee under Clause 30 of Schedule 7 of the Local Government Act 2002.

Purpose

The purpose of the Group is to contribute to the promotion of the sustainable management of the Rotorua Lakes and their catchments, for the use and enjoyment of present and future generations, while recognising and providing for the traditional relationship of Te Arawa with their ancestral lakes.

Membership

Six members:

- The Chairperson of the Te Arawa Lakes Trust and one other senior representative;
- The Mayor and one other elected representative of the Rotorua Lakes Council;
- The Chairperson and one other elected representative of the Bay of Plenty Regional Council.

Quorum

As per clause 3.1 of the RLSG Agreement (dated 8 October 2004), the ordinary quorum for a meeting of the Group will be one member from each of the Organisations.

Group Chairperson

The Group has agreed to rotate its Chairperson on an annual basis.

Term of the Committee

This is a permanent joint committee under the Te Arawa Lakes Settlement Act 2006. The *Te Arawa Lakes Deed of Settlement* (December 2004) included clauses establishing the Group (Cultural Redress: Lakes Management and Relationships, clauses 9.1 to 9.3). The Terms of Reference for the Group come from a signed agreement between the three parties (dated 8 October 2004) and included in Part 1 of the Relationship Schedule to the Deed of Settlement.

Specific Responsibilities and Delegated Functions

The Group will have the following functions:

- The provision of leadership to the Organisations and the community in relation to implementation of the Vision of the Strategy for the Lakes of the Rotorua district 2000.
- The identification significant existing and emerging issues affecting the Rotorua Lakes.
- The preparation, approving, monitoring, evaluation and review agreements, policies and strategies to achieve integrated outcomes for the Rotorua Lakes.
- The identification, monitoring and evaluation of necessary actions by the organisations and other relevant organisations.
- The receiving of reports on activities being undertaken by the organisations and other relevant organisations.
- Involvement during the preparation of statutory plans in relation to significant issues. Such plans include but are not limited to iwi and hapū management plans, district and regional plans, reserve management plans and annual plans.
- Involvement in applications for activities in relation to significant issues not addressed by existing policies of the co-management partners. Such activities include but are not limited to resource consents, designations, heritage orders, water conservation orders, restricting access to the lakes (during special events or in particular circumstances), and transferring and/or delegating of statutory authority.

Note:

The Rotorua Te Arawa Lakes Strategy Group reports directly to the Regional Council.

Public Forum

1. A period of up to 15 minutes may be set aside near the beginning of the meeting to enable members of the public to make statements about any matter on the agenda of that meeting which is open to the public, but excluding any matter on which comment could prejudice any specified statutory process the council is required to follow.
2. The time allowed for each speaker will normally be up to 5 minutes but will be up to the discretion of the chair. A maximum of 3 public participants will be allowed per meeting.
3. No statements by public participants to the Council shall be allowed unless a written, electronic or oral application has been received by the Chief Executive (Governance Team) by 12.00 noon of the working day prior to the meeting and the Chair's approval has subsequently been obtained. The application shall include the following:
 - name of participant;
 - organisation represented (if any);
 - meeting at which they wish to participate; and matter on the agenda to be addressed.
4. Members of the meeting may put questions to any public participants, relevant to the matter being raised through the chair. Any questions must be asked and answered within the time period given to a public participant. The chair shall determine the number of questions.

Membership

Chairperson:	Sir T Curtis (Chairman, Te Arawa Lakes Trust)
Deputy Chairperson:	Mayor S Chadwick (Rotorua Lakes Council)
Appointees:	Councillor K Hunt (Rotorua Lakes Council), Deputy Mayor D Donaldson (Alternate, Rotorua Lakes Council), W Emery (Te Arawa Lakes Trust), Chairman D Leeder (Bay of Plenty Regional Council), Councillor K Winters (Bay of Plenty Regional Council), Councillor T Marr (Alternate, Bay of Plenty Regional Council), L Ngawhika (Deputy Chair, Te Arawa Lakes Trust)
Attendees:	S Lewis (Director Operations, Ministry for the Environment)
Committee Advisor:	M Stensness

Recommendations in reports are not to be construed as policy until adopted.

Agenda

1 Opening Karakia

2 Apologies

3 General Business and Tabled Items

Items not on the agenda for the meeting require a resolution under section 46A of the Local Government Official Information and Meetings Act 1987 stating the reasons why the item was not on the agenda and why it cannot be delayed until a subsequent meeting.

4 Public Forum

5 Declarations of Conflicts of Interests

6 Previous Minutes

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8 Presentations

8.1 Matauranga Maori approach to the land contact beds for the Waste Water Treatment Plant

Jenny Riini from Rotorua Lakes Council to present.

8.2 Embedding Te Tūāpapa (Te Arawa Cultural Values)

Nicki Douglas and Karen Vercoe from Te Arawa Lakes Trust to present.

8.3 Te Arawatanga - Supporting Te Arawa Kaitiaki around our Lakes - Kaitiaki forum establishment and project development led by hapū and iwi

Nicki Douglas and Karen Vercoe to present.

9 Reports Continued

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9.4 Te Arawa Lakes Trust Verbal Update

9.5 Lake Rotoehu Sewage Reticulation 81

10 Consideration of General Business

11 Closing Karakia

Previous Minutes

Minutes of the Rotorua Te Arawa Lakes Strategy Group Meeting held in The Council Chamber, Rotorua Lakes Council, Civic Administration Building, 1061 Haupapa Street, Rotorua on Tuesday, 27 June 2017 commencing at 10.30 a.m.

Present:

Deputy Chairman: Mayor S Chadwick (Rotorua Lakes Council)

Appointees: W Emery (Te Arawa Lakes Trust), Councillor K Hunt (Rotorua Lakes Council), Chairman D Leeder (Bay of Plenty Regional Council), Councillor K Winters (Bay of Plenty Regional Council).

In Attendance: S Lewis (Director Operations, Ministry for the Environment); N Douglas (Te Arawa Lakes Trust); D Atkinson (Chairman, Lake Water Quality Society); G Dohnt and J Willmoth (Lake Rotoehu Water); S Goodwin (Lake Okareka Community Association); C Sutton (Project Rerewhakaaitu Inc.); Rotorua Lakes Council: G Williams (Chief Executive), S Michael (Director Transport and Waste Solutions), A McGregor (Project Management Office Manager), I Tiriana (Public Relations Manager); Bay of Plenty Regional Council: Councillor N Bruning, A Bruere (Lakes Operations Manager), C Ingle (General Manager Integrated Catchments), L Goldsmith (Rotorua Catchments Manager), R Burton (Senior Planner (Water Policy)), S Omundsen (Tauranga Catchments Manager), S Lamb (Natural Resources Policy Manager), T White (Incentives Programme Director), R Garrett (Committee Advisor).

Apologies: Sir Toby Curtis

1 Welcome

Mayor Chadwick welcomed members and attendees to the meeting, and proffered the meeting's congratulations to the New Zealand Americas Cup team on their win. Mrs Chadwick also acknowledged the support and sympathy she had received from the wider Rotorua community on the recent passing of her husband John. Mayor Chadwick then invited W Emery to open the meeting with a karakia.

2 Apologies

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Accepts the apology tendered by Sir Toby Curtis.**

**Winters/Hunt
CARRIED**

3 **Declaration of conflicts of interest**

No conflicts of interest were declared.

4 **Previous Minutes**

4.1 **Rotorua Te Arawa Lakes Strategy Group minutes - 10 March 2017**

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 **Confirms the minutes of the Rotorua Te Arawa Lakes Strategy Group meeting held on 10 March 2017.**

Winters/Hunt
CARRIED

4.2 **Public Excluded Rotorua Te Arawa Lakes Strategy Group minutes - 10 March 2017**

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 **Confirms the minutes of the Public Excluded Rotorua Te Arawa Lakes Strategy Group meeting held on 10 March 2017.**

Winters/Hunt
CARRIED

5 **Reports**

5.1 **Rotorua Te Arawa Lakes Programme - Status Report**

Rotorua Catchments Manager Linda Goldsmith updated members on progress made in the Rotorua Te Arawa Lakes Programme and associated projects since the last Strategy Group meeting. Ms Goldsmith advised members that the hearings for Proposed Plan Change 10 had concluded and that the findings of the independent Hearings Panel would be released to the Regional Council for consideration and ratification. Ms Goldsmith noted an increase in engagement with the Lake Rotorua Advice and Support Service, with 25 out of 26 dairy farmers in the catchment now registered in the system; and also noted increased engagement with the gorse scheme after a slow start.

The report also sought approval of Change Request 057: Brunswick Park Sewerage Reticulation, which proposed the transfer of the 2016/2017 Brunswick Sewerage Connections budget to the 2017/2018 financial year. Rotorua Lakes Council Director Transport and Waste Solutions Stavros Michael explained the costs associated with installing a reticulated system for the 55 properties affected and outlined consultation undertaken with affected parties to date. In response to a member's question, staff clarified that it was certainly the intention that the connection work would be completed in the next financial year.

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Rotorua Te Arawa Lakes Programme - Status Report;**
- 2 Approves Change Request CR057 – Brunswick Sewerage Connections.**

**Hunt/Leeder
CARRIED**

5.2 Te Arawa Lakes Trust Update June 2017

Te Arawa Lakes Trust Environment Manager Nicki Douglas updated members on recent Trust activities. Ms Douglas outlined recent changes to staff and their roles within the Trust, and summarised progress made on various Trust work programmes.

Ms Douglas clarified that the proposed floating wetland relocation was due to anchoring damage from recent storms and that the wetland would remain within the Sulphur Point vicinity. Ms Douglas also confirmed that the Trust would be involved in any initiative to develop an ecological management plan for the Sanatorium Reserve.

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Te Arawa Lakes Trust Update June 2017**

**Winters/Hunt
CARRIED**

5.3 Rotorua Lakes Council Update

Rotorua Lakes Council (RLC) Director Transport and Waste Solutions Stavros Michael updated members on RLC activities that impacted the Lakes Programme, including current wastewater treatment projects. Mr Michael noted that a Memorandum of Understanding regarding nutrient accounting for aspects of the Rotorua Wastewater Treatment Plant upgrade had been developed between RLC and Bay of Plenty Regional Council. Mr Michael also summarised progress made on the Rotomā/Rotoiti sewerage scheme, noted that the resource consent application had been lodged with the hearing scheduled for 15 July, and advised that RLC was investigating whether Rotoehu could also be included in the scheme.

Members queried the timing of the development of the Rotomā/Rotoiti scheme; staff clarified that the work for Rotomā was scheduled for 2017/18 and Rotoiti for 2018/19 and that the Ministry of Health funding contribution for Rotomā was available until June 2018. Staff expected that the Rotomā scheme would be substantially completed by June next year.

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Rotorua Lakes Council Update;**

**Emery/Hunt
CARRIED**

5.4 Update on Lake Rotorua Incentives Scheme

Incentives Programme Director Te Taru White updated the Strategy Group on progress made by the Lake Rotorua Incentives Committee towards achieving its nitrogen reduction targets. Mr White advised that 8.4 tonnes of in-lake nitrogen had been secured so far this calendar year, with several more purchases under negotiation that will move the Scheme close to its calendar year target of 20 tonnes. He also noted that an Expressions of Interest process for small amounts of nitrogen (less than 1 tonne) had been established although uptake was relatively slow at this stage; and observed that the dNITRO analysis tool was increasingly being used by landowners to help assess land use change.

Members expressed concern about the possible impact of the myrtle rust incursion on landowners' consideration of mānuka as an alternative land use; Mr White acknowledged that this was likely to make mānuka a less attractive option and could be off-putting for some landowners considering conversion. Ministry for the Environment Operations Director S Lewis noted that, while the myrtle rust incursion had longer term implications for land use change and soil erosion, the immediate response was being managed by the Department of Conservation and Ministry of Primary Industries.

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Update on Lake Rotorua Incentives Scheme.**

Hunt/Emery
CARRIED

5.5 Rotorua Te Arawa Lakes Programme - Annual Work Programme 2017-2018

Rotorua Catchments Manager Linda Goldsmith sought approval from the Strategy Group to provide the 2017-2018 Annual Work Programme for the Rotorua Te Arawa Lakes Programme to the Ministry for the Environment, as required by the Deed of Funding Agreement. Ms Goldsmith summarised the key points of the work programme, and noted that the focus remained on the continued implementation of the Integrated Framework.

Members asked for and received clarification regarding funding included in the Programme for Ohau Wall mitigation work and the Rotomā/Rotoiti sewerage reticulation scheme.

Members queried whether the Work Programme included actions necessary to meet national swimmability targets. Staff explained that Council work around swimmability targets was separate from Lakes Programme work at this stage, but would be brought in under the Programme's umbrella as appropriate interventions were identified and action plans developed, and considered this would be reflected in the next annual work programme.

Members noted that recruitment for Professor Hamilton's replacement as Lakes Chair at the University of Waikato was underway.

Members discussed the very high lake levels being experienced at Lake Ōkāreka and noted that emergency measures had been invoked to manage the high flows.

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Rotorua Te Arawa Lakes Programme - Annual Work Programme 2017-2018;**

**Winters/Hunt
CARRIED**

- 2 Approves the provision of the Rotorua Te Arawa Lakes Programme – Annual Work Programme 2017-2018 to the Ministry for the Environment as required by the Deed of Funding Agreement.**

**Winters/Leeder
CARRIED**

5.6 Tarawera Farm Environment Plans

Lakes Operations Manager Andy Bruere and Chris Sutton, Chairman of Project Rerewhakaaitu Incorporated Society, updated the Strategy Group on progress with the Tarawera Farm Environment Plan project. This project is being implemented as part of the Lake Tarawera Restoration Plan in conjunction with Project Rerewhakaaitu Incorporated and supported by Fonterra.

Members expressed concern that the Farm Environment Plans developed using Fonterra's template and their associated nutrient budgets would be confidential and not subject to audit, which may raise questions regarding the integrity of the data generated from Overseer and used in the Plans. Staff explained that 10 Plans would be selected for review by Council staff to identify any aberrations with the data used, audit the Overseer budgets and resolve any issues raised. Members emphasised the need for sharing of information and collaboration to minimise the risks of duplication and ensure integrity of process.

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Tarawera Farm Environment Plans;**

**Hunt/Emery
CARRIED**

5.7 Lake Rotorua Nitrogen Accounting Mechanism

Natural Resources Policy Manager Stephen Lamb and Project Manager Office Manager Aimee McGregor sought Strategy Group approval of a joint Memorandum of Understanding (MoU) regarding a nitrogen accounting mechanism for the Rotorua Waste Water Treatment Plant (WWTP) discharge.

Mr Lamb explained that the mechanism had been developed to acknowledge the urban growth pressures facing Rotorua and to account for the additional nitrogen load created by reticulation of sewage from previously rural land to the WWTP, with no net increase to the total load of nitrogen to the Lake. Mr Lamb outlined the key points of the MoU and noted that the development of the mechanism was an operational accounting process and did not pre-empt the resource consent process for the WWTP.

In response to a member's question, staff clarified that the mechanism could not be used to track phosphorus.

Resolved

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, *Lake Rotorua Nitrogen Accounting Mechanism*;**

**Hunt/Emery
CARRIED**

- 2 Approves the Memorandum of Understanding: Nitrogen Accounting Approach for the Rotorua Waste Water Treatment Plant Discharge.**

- 3 Recommends that Te Arawa Lakes Trust, Rotorua Lakes Council and Bay of Plenty Regional Council sign the Memorandum of Understanding.**

**Chadwick/Hunt
CARRIED**

6 Closing karakia

Provided by W Emery.

The meeting closed at 12.25 pm.

Reports

Receives Only – No Decisions



Report To: Rotorua Te Arawa Lakes Strategy Group

Meeting Date: 08 September 2017

Report From: Chris Ingle, General Manager, Integrated Catchments

Rotorua Te Arawa Lakes Programme - 2016-2017 Annual Report

Executive Summary

The purpose of this report is to seek approval for the Rotorua Te Arawa Lakes Programme Annual Report for the 2016-2017 financial year (refer Appendix 1). On approval, the report will be submitted to the Ministry for the Environment in accordance with the requirements of the Deed of Funding.

Recommendations

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Rotorua Te Arawa Lakes Programme - 2016-2017 Annual Report;**
- 2 Approves the Rotorua Te Arawa Lakes Programme – 2016-2017 Annual Report for submission to the Crown.**

1 Introduction

The attached Rotorua Te Arawa Lakes Programme 2016-2017 Annual Report is prepared to fulfil the reporting obligations to the Crown under the Deed of Funding for the Programme. The Annual Report provides information on progress towards planned activities for the financial year as set out in the 2016-2017 Annual Work Programme approved by the Minister.

The report is primarily prepared to provide information on Deed funded activities but also provides information on progress with activities which are not Deed funded, thereby providing a full picture of the Programme's activity.

2 Highlights

Some of the highlights for the 2016-2017 year are summarised below.

Integrated Framework – Lake Rotorua

- During the 2016-2017 financial year the Proposed Plan Change 10 hearings took place. This plan change relates to the 140 tonne annual reduction required from the pastoral sector of the Lake Rotorua catchment.
- The Advice and Support Service, set up to assist the pastoral sector to obtain the required reductions, provided business advice and support to 126 farming enterprises.
- The Gorse Programme now has an aggregated total of 18.5 tonne of gorse secured, more than halfway to its 30 tonne target.
- The Incentives Scheme has now secured a total of 8.44 tonne of nitrogen. There is still a long way to get to the 100 tonne target but negotiations are well underway with several other landowners.
- The first five projects contracted as part of the Low Nitrogen Land Use Fund have progressed well, providing practical tools and information to those needing to change their farming practices
- The Tikitere Zeolite Plant, which will trap nitrogen in the Tikitere Stream before it can enter Lake Rotorua, is now in the detailed design stage.
- Phosphorus locking (also known as alum dosing) occurred as needed in the Puarenga Stream and the Utuhina Stream.

Other Deed funded lakes

- Phosphorus locking took place in Lake Rotoehu, though it didn't prevent algal blooms this year. No weed harvesting was undertaken as there was no accessible lake weed.
- The Ohau Diversion Wall in Lake Rotoiti was re-consented
- The Rotoiti/Rotomā wastewater treatment plant and land disposal system has reached the detailed design stage.

Water quality results

The Programme has continued facilitating relevant science research as well as routine monitoring. The annual results for the monitoring of the four factors that make up the Lakes Trophic Level Index have been relatively good this year, as five lakes have reached or exceeded their target TLI, including Lake Rotorua which sits at a TLI of 4.1 which exceeds its target TLI of 4.2. The other lakes with good results this year are Rotomā, Tikitapu, Rerewhakaaitu and Ōkaro.

3 Implications for Māori

The Te Arawa Lakes Trust (TALT), as one of the partners governing the Programme, has representation at the operational workstream leads meetings and also at the Programme Steering Group. TALT lead the implementation of the Te Arawa Values Framework which was adopted by the Rotorua Te Arawa Lakes Strategy Group in October 2015. The framework aims to ensure that the Te Arawa Lakes are managed and restored with a 'cultural lens', alongside science and technology.

Linda Goldsmith
Rotorua Catchments Manager

for General Manager, Integrated Catchments

1 September 2017

APPENDIX 1

Rotorua Te Arawa Lakes Annual Report 2016 - 2017



Annual Report

2016-2017

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Bay of Plenty Regional Council, Rotorua
Lakes Council and Te Arawa Lakes Trust.

*Working as one to protect our lakes
with funding assistance from the
Ministry for the Environment.*

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Purpose

The purpose of this document is to report progress against the 2016-2017 Annual Work Programme of the Rotorua Te Arawa Lakes Programme (the Programme), for the year ending 30 June 2017. This report is in accordance with Clause 5.1 and 5.2 of Deed of Funding with the Crown, for the Programme.

In this report, progress made on individual interventions is reported against the Annual Work Programme commitments. The overarching goal of the Deed of Funding Agreement is to meet community aspirations for water quality in the four Deed Funded lakes: Rotoiti, Rotorua, Ōkāreka and Rotoehu. Each of these lakes has a target water quality set by the community in the Bay of Plenty Regional Water and Land Plan. This target water quality is set by Trophic Level Index (TLI) and this report provides an update on the status of water quality across the Rotorua Te Arawa Lakes, against the targets set for all lakes, Deed and non-Deed funded.

While this report focusses on providing all operations and support work undertaken for Deed funded lakes, an update on work on non Deed funded lakes is also provided.

Overview

Lake Rotorua 2016-2017

RLC or BOPRC Annual Plan Budget (\$000)	Actual Year To Date Expenditure (\$000)	Approved Crown Funding (\$000)	Crown Funding Received (\$000)	Crown Funding Applied to Date (\$000)
7,270	4,612	3,591	2,681	2,309

Excellent progress has been made in a number of initiatives for the Lake Rotorua catchment this financial year. Most significantly, an independent panel held hearings for Plan Change 10 (PC10) from 13 March to 4 May 2017. The recommendations of the independent panel were sent to BOPRC on the last day of this financial year and have subsequently been approved at a Council meeting. PC10 introduces rules for rural properties in the Lake Rotorua catchment, to limit the amount of nitrogen entering Lake Rotorua from land use in order to improve water quality. These rules underpin the land use initiatives underway for Lake Rotorua, which currently are:

- The Incentives Scheme
- The Gorse Programme
- The Advice and Support Service
- The Low Nitrogen Land Use Fund

The Incentives Scheme has been set up to secure decreases in nitrogen discharges with landowners in perpetuity. \$40m has been allocated to this initiative which aims to secure 100 tonne of nitrogen per year from entering the lake. So far five agreements have been signed, securing 8.44 tonne. A streamlined process has been put in place for those landowners with only small amounts of nitrogen available and this has attracted four landowners who will now enter negotiations.

The Gorse Programme aims to convert areas of established gorse to trees, providing funding to

landowners for the work and securing the land use change in perpetuity. Although only 2.5 tonne of nitrogen has been secured this year, the aggregated total now sits at 18.5 tonne, which takes the gorse programme over halfway to its target of 30 tonne.

The Advice and Support Service is established to produce and fund Nitrogen Management Plans and provide business decision making support to those landowners affected by PC10 rules for nitrogen discharge restrictions. 126 farming enterprises are now signed up with Advice and Support, and of those farming enterprises with over 40 hectares, 74% are engaged with the service in preparation for the resource consent processes that will start for these enterprises in 2017/2018.

The Low Nitrogen Land Use Fund has initiated the first round of funding this year. Six projects were chosen out of the expressions of interest and five of these have progressed well, providing useful information for landowners. The sixth project has been delayed due to a change in the General Manager, but is expected to proceed in 2017/2018. The next round of funding has been deferred to 2018 to allow the benefits from the first round to be realised.

As well as the land use change initiatives, a range of engineering initiatives are planned to secure 50 tonne of nitrogen from entering the lake annually. The main initiative being planned is the development of the Zeolite Plant at Tikitere, which will use the mineral zeolite to absorb nitrogen in the Tikitere stream before it can enter the lake. Work on this plant has reached the detailed design stage.

The Programme finances showed a large underspend for the interventions in the Lake Rotorua catchment for second year running. The largest underspend related to the Incentives Scheme. Incentives agreements had been signed but not yet paid out by the end of the financial year totalling \$660k. In addition, agreements that would have exceeded the remaining \$800k budget were in negotiation by the end of the year. The period from initial discussions to the eventual payment is proving to be up to nine months. Other underspends, in total just over \$1m, were experienced across a number of initiatives:

- Advice and Support has had a slow start this year, but now that increasing numbers of farming enterprises are enrolling with Advice and Support an underspend in the following year is not expected.
- The Gorse Scheme has also been slow to gain momentum but a number of large gorse blocks are under negotiation and are expected to progress to payment in 2017/2018.
- The remaining sewerage connections for Lake Rotorua are proving difficult to achieve, but an analysis of the properties has been undertaken and a plan has been drawn up.
- One of the Low Nitrogen Land use projects did not progress in this financial year as outlined above.

Financial details can be found in the table at the end of this report.

Lake Rotoehu 2016-2017

RLC or BOPRC Annual Plan Budget (\$000)	Actual Year To Date Expenditure (\$000)	Approved Crown Funding (\$000)	Crown Funding Received (\$000)	Crown Funding Applied to Date (\$000)
236	214	139	139	107

The long-term interventions for Lake Rotoehu are now complete. The short-term interventions of weed harvesting and alum dosing continue, though during this year there was no weed accessible for harvesting. Investigations are now underway with regard to the potential for including Lake Rotoehu in the sewage reticulation for the Rotoiti/Rotomā treatment plant, which would further decrease the nutrients reaching the lake.

Lake Rotoiti 2016-2017

RLC or BOPRC Annual Plan Budget (\$000)	Actual Year To Date Expenditure (\$000)	Approved Crown Funding (\$000)	Crown Funding Received (\$000)	Crown Funding Applied to Date (\$000)
1,384	848	695	260	424

The Ohau Diversion Wall was re-consented for a further 35 years during this year. The re-consenting of the wall did not require public notification, so a hearings process, which was budgeted for, was not needed. This accounts for the majority of the underspend for the Lake Rotoiti catchment interventions. The wall will now undergo maintenance in line with the management plan that has been put in place.

The resource consent application for the Rotoiti/Rotomā Wastewater Treatment Plant was lodged this year, with the hearing taking place at the start of 2017/2018. The detailed design work is underway and will be completed in 2017/2018.

Although not managed as part of the Programme, a catfish incursion in Lake Rotoiti has been of concern to the community. Surveys are continuing, but it would appear that the majority of the catfish have now been confined in one of the bays.

Lake Ōkāreka 2016-2017

The previous interventions in Lake Ōkāreka consisted of sewage reticulation and land use change, and these have been completed. The Lake Ōkāreka community remains active in its interest in water quality and they are concerned that the lake still exceeds its TLI. In August 2016, the Rotorua Te Arawa Lakes Strategy Group agreed to a further land use change project in the catchment. This was due to encompass the monitoring of the Rule 11 nutrient cap, incentives for land use change and a contribution to the monitoring and review of the Rotorua Lakes Council Lakes "A" section of the District Plan. Whilst the monitoring work has commenced, the Lakes A work is on hold at present, and the lack of a key staff member until the 2017/2018 year has meant that the land use change work has only reached the initial investigation stage.

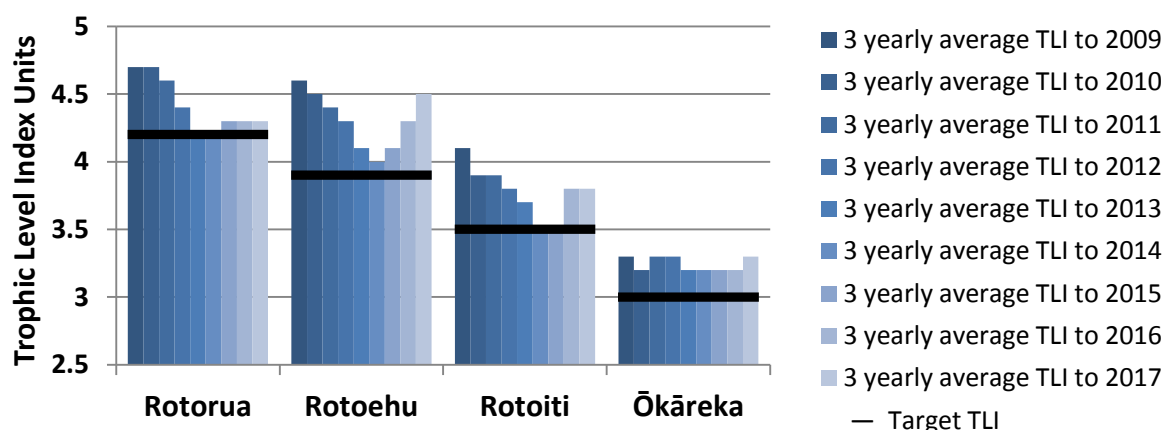
The Lake Ōkāreka lake level rose rapidly following the weather events in February, March and April and has continued to rise, gradually flooding walkways and gardens. Although not an issue to be tackled by the Programme, this has been a problem that was not going to resolve itself quickly, as the lake has no natural surface outlet. The Regional Council has invoked Section 330 of the Resource Management Act (Emergency Works) to increase the flow through the pipeline taking excess water to Lake Tarawera, and then at the start of 2017/2018, add an additional pipeline and pump more water out.

Overview of TLI results

Five lakes have reached their target TLI with this year's annual average results: Lakes Rotorua, Ōkaro, Rerewhakaaitu, Tikitapu and Rotomā. This is a great improvement over the previous year's results, when only Lake Ōkaro and Lake Rerewhakaaitu reached their target TLI. However the results for four lakes that have not met their target TLI show some declining trends. These lakes are Rotoehu, Ōkātina, Tarawera and Rotoiti.

When looking at trends in the TLI results for the four Deed funded lakes, the three yearly average TLIs are a useful indicator. As can be seen in the chart below, Lake Rotorua is showing a gradual improvement as indicated by the trend towards the TLI dropping. Both Lake Rotoehu and Lake Rotoiti were showing some good progress but have recently moved further away from their target TLI. Land use change and sewerage reticulation for Lake Ōkāreka have not enabled it to reach its TLI, but it shows a very stable trend at either 0.2 or 0.3 TLI units above the target, based on three yearly average TLIs.

TLI trends - Deed funded lakes



Key achievements

The table below sets out key achievements within the Programme as shown against the 2016-2017 Annual Work Programme. Deed funded activities are shown in bold.

Lake Operations Commitments as shown in 2016-2017 Annual Work Programme	Lake Operations Achievements 2016-2017
<ul style="list-style-type: none"> Continue Lake Rotoehu weed harvesting 	<ul style="list-style-type: none"> This was not undertaken during 2016-2017 as there was insufficient accessible weed to be harvested.
<ul style="list-style-type: none"> Investigate the feasibility of weed harvesting on Lake Rotorua for nitrogen reduction (as part of 50T engineering solutions). 	<ul style="list-style-type: none"> This is being investigated as part of the 50T nitrogen reduction project and a report is underway.
<ul style="list-style-type: none"> Continue phosphorous locking to maintain water quality (Lakes Rotoehu and Rotorua). 	<ul style="list-style-type: none"> This has continued through the year. The results for Lake Rotorua have been very good, with no algal blooms experienced. However Lake Rotoehu experienced algal blooms despite the alum treatment and a Toi Te Ora health warning was put in place over the summer. There is an ongoing science investigation to assess the efficacy of Lake Rotoehu alum dosing.
<ul style="list-style-type: none"> Continue to pursue resource consents, prepare site and review engineering and cost feasibility of Tikitere Zeolite Plant in time for scheduled 2018-2019 construction. 	<ul style="list-style-type: none"> The site has been confirmed through geotechnical investigation and the resource consent is in preparation. Detailed design has now started.
<ul style="list-style-type: none"> Responsive weed management as required for amenity purposes across all lakes. 	<ul style="list-style-type: none"> The only amenity weed harvesting required over the summer period was for Lake Rotoiti.
<ul style="list-style-type: none"> Once groundwater information is available for Lake Tarawera, consider next steps, e.g. nutrient budget review. 	<ul style="list-style-type: none"> The groundwater model and report is now complete. Commencing lake model development, which will confirm the sustainable nutrient targets. Work is also underway with farmers to implement farm environment plans in the greater Tarawera catchment.
<ul style="list-style-type: none"> Once catchment and lake modelling completed consider review of action plans for Ōkaro and Ōkāreka to establish whether further intervention is necessary in these catchments, e.g. gorse removal. 	<ul style="list-style-type: none"> Lake Okaro modelling is on hold due to other priorities. Lake Okareka modelling is progressing and will be reported soon.

<ul style="list-style-type: none"> The University of Waikato Chair of Lake Restoration and Management and the Water Quality Technical Advisory Group will continue to provide expert advice and scientific rigour for the Programme. 	<ul style="list-style-type: none"> The Water Quality Technical Advisory Group has met regularly to provide expert advice. The University of Waikato Chair of Lake Restoration and Management resigned during the year, though he has continued to support the programme whenever possible. The recruitment process for his replacement is underway.
<ul style="list-style-type: none"> Land Technical Advisory Group to provide technical support for land use and land management decisions. 	<ul style="list-style-type: none"> The Land Technical Advisory Group has continued to meet throughout the year, although in a different format of targeted workshops.
<ul style="list-style-type: none"> Continue work to refine function of Trout Barrier at Hamurana Springs by investigating options to alleviate algae issues above the barrier and prevent trout from passing above the barrier. 	<ul style="list-style-type: none"> This project has not gained much traction over the year due to competing priorities and challenges in identifying options.
<ul style="list-style-type: none"> Implement any actions to manage the corrosion of the Ohau Wall. 	<ul style="list-style-type: none"> A management plan has been drawn up and maintenance work will now progress according to the plan.
<ul style="list-style-type: none"> Prepare and lodge consent application for Ohau Wall for a 35 year consent. 	<ul style="list-style-type: none"> The consent was lodged and approved, without requiring public notification.
<ul style="list-style-type: none"> Undertake bathymetric survey of Lakes Tikitapu and Rotokakahi. 	<ul style="list-style-type: none"> The survey work is completed and data is available for research and modelling work.
<ul style="list-style-type: none"> Trial fish pass in Ohau Wall. 	<ul style="list-style-type: none"> The fish passes are designed and are awaiting RMA compliance approval before installation.
<ul style="list-style-type: none"> Monitor forest harvest impact on Lake Rotomā – a four year project. 	<ul style="list-style-type: none"> This is ongoing for the four year period to assess medium term changes in nutrient leaching.
<ul style="list-style-type: none"> Install monitoring buoy in next lake, subject to approvals. 	<ul style="list-style-type: none"> The buoy was built and is awaiting installation in Lake Rotokakahi
<ul style="list-style-type: none"> Continue koura monitoring programme on all twelve lakes. 	<ul style="list-style-type: none"> Lakes Okaro and Rerewhakaaitu were monitored and reported on during the year.

Land Management as shown in 2016-2017 Annual Work Programme	Land Management Achievements 2016-2017
<ul style="list-style-type: none"> Continue to implement the Lake Rotorua Gorse Programme, including signing up new agreements and implementing existing ones. 	<ul style="list-style-type: none"> Whilst the Gorse programme has had a slow start, a drive to target the larger gorse blocks in the catchment is starting to show results, and an app developed with funding from the Low Nitrogen Land Use Fund is demonstrating the potential gains the gorse programme can provide for individual landowners.
<ul style="list-style-type: none"> Complete the first funding round for the Low Nitrogen Land Use Fund to support land use and land management change in the Lake Rotorua catchment to low nitrogen alternatives and implement associated contracts. 	<ul style="list-style-type: none"> The first funding round resulted in six projects that reached the criteria for funding. Of these, five have progressed to plan during the year, but the sixth is still in negotiation following a change in General Manager at the organisation proposing the project.
<ul style="list-style-type: none"> Continue to implement the Lake Rotorua Incentives Scheme, including signing up new agreements and implementing existing ones. 	<ul style="list-style-type: none"> A total of five agreements have now been signed and the total reduction committed to so far is 8.435 T N. Three of the agreements are for land use change in later years. A monitoring process will ensure that the land use change occurs when expected. The remaining two agreements relate to land use change that has already happened and this totals 0.889 T N.
<ul style="list-style-type: none"> Continue to implement the Advice and Support Service for landowners affected by the rules. 	<ul style="list-style-type: none"> A total of 126 farming enterprises have now signed up to the Advice and Support Service, 42 of those signed up during this year. 60 nitrogen management plans have been signed off and a further 38 are in progress.
<ul style="list-style-type: none"> Continue Acacia control in the Lake Tarawera catchment to reduce nitrogen leaching as required. 	<ul style="list-style-type: none"> The Acacia control programme took place again in 2016-2017 in the Lake Tarawera catchment and was focused on the area around the isthmus track between Lake Tarawera and Lake Rotomahana. The work involved felling rather than drilling the trees, as that is a Department of Conservation requirement for safety around tracks.
<ul style="list-style-type: none"> Build phosphorus detainment bunds as suitable sites are identified. 	<ul style="list-style-type: none"> No new detainment bunds were developed but five have been scoped and of those two have agreements progressing.
<ul style="list-style-type: none"> Continue to support the farming community to implement farm management plans in the Lake Rerewhakaaitu catchment, also continue to support other activities of the group including expansion in to surrounding lake catchments. Important to the Programme here is quantifying the nutrient reductions achieved by the Rerewhakaaitu farming community to date. 	<ul style="list-style-type: none"> A Project Manager has been contracted to assist farmers to develop farm environmental plans as a first step in this process. The Lake Rerewhakaaitu Incorporated Society has agreed to support the Farm Environment Plan process with the community.

Policy, Planning, Communications and IT as shown in 2016-2017 Annual Work Programme	Land Management Achievements 2016-2017
<ul style="list-style-type: none"> Continue Schedule 1 Resource Management Act 1991 process for Lake Rotorua Nutrient Management rules being made operative. 	<ul style="list-style-type: none"> The Plan Change 10 hearings took place between 13 March and 4 May 2017.
<ul style="list-style-type: none"> Identify timeframes for rules to be developed for the 'Non-Rule 11' lakes. 	<ul style="list-style-type: none"> This work is now encompassed in the Rotorua Water Management Area work. Timeframes are still to be confirmed.
<ul style="list-style-type: none"> Continue working with lake owners to develop an action plan for Lake Rotokakahi. 	<ul style="list-style-type: none"> Action Plan discussions are progressing and are awaiting a response on monitoring requirements.
<ul style="list-style-type: none"> Develop action plan for Lake Rotomahana if needed. 	<ul style="list-style-type: none"> The Lake Rotomahana TLI has not triggered the Programme requirement for an Action Plan. The TLI remains within 0.2 units of the target.
<ul style="list-style-type: none"> Continue with the implementation of the Te Arawa Values Framework that was adopted by the Strategy Group in October 2015. 	<ul style="list-style-type: none"> Changes at the Te Arawa Lakes Trust have resulted in this initiative being delayed to the financial year 2017/2018.
<ul style="list-style-type: none"> Implement Communications Plan approved by the Programme, with focus on Integrated Framework, the Resource Management Act process in relation to the Lake Rotorua Nutrient Management package and raising the profile of the Programme. 	<ul style="list-style-type: none"> The main focus for Communications this year continued to be the Integrated Framework, in particular Proposed Plan Change 10 – Lake Rotorua Nutrient Management. A huge amount of support was required for the RMA process which took place throughout the year. This included media releases, media briefings, updates to affected parties, website updates, emails and letters to affected parties, information collateral. Key milestones achieved include a growing community on the RTALP Facebook page, an open rate of 50% for the Lakes e-newsletter, front page story for the Dairy News for the first Incentives Deal, positive stories and interview around the adoption of Plan Change 10, regular features in the lakeside community newsletters and the farmers collective newsletter.
<ul style="list-style-type: none"> Establish the Nutrient Discharge Management System for nutrient management across all lake catchments. 	<ul style="list-style-type: none"> This has been delayed and is due now to take place between July and December 2017

Sewerage shown in 2016-2017 Annual Work Programme	Sewerage Annual Achievements 2016-2017
<ul style="list-style-type: none"> Lodge resource consent application for Rotorua Wastewater Treatment Plant, alternative Disposal System and Rotoiti Sewerage Scheme. 	<ul style="list-style-type: none"> Prior to the lodging of the resource consent for the Rotorua Wastewater Treatment Plant, community consultation on the land contact bed design (as part of the alternative Disposal System) has been progressing. It is expected that the resource consent will be lodged by the end of 2017. The resource consent for the Rotoiti Sewerage Scheme was lodged but the hearings were not held until after the end of this financial year.
<ul style="list-style-type: none"> Complete detailed design of Rotomā/Rotoiti Wastewater Treatment Plant and Land Disposal System. 	<ul style="list-style-type: none"> The detailed design work is underway and will be completed in the financial year 2017/2018.
<ul style="list-style-type: none"> Continue community engagement at Rotoehu in relation to sewerage with the aim of agreeing on preferred option. 	<ul style="list-style-type: none"> Community engagement has continued and there is some interest in a reticulated solution.
<ul style="list-style-type: none"> Complete the remaining sewerage connections at Brunswick, Lake Rotorua 	<ul style="list-style-type: none"> This has not progressed in this financial year as a special consultative process is required, delaying the completion of this initiative until the financial year 2017/2018. In the meantime a report has been developed assessing whether the On-Site Effluent Treatment rules could help to encourage the remaining 55 households to connect to the sewerage reticulation.

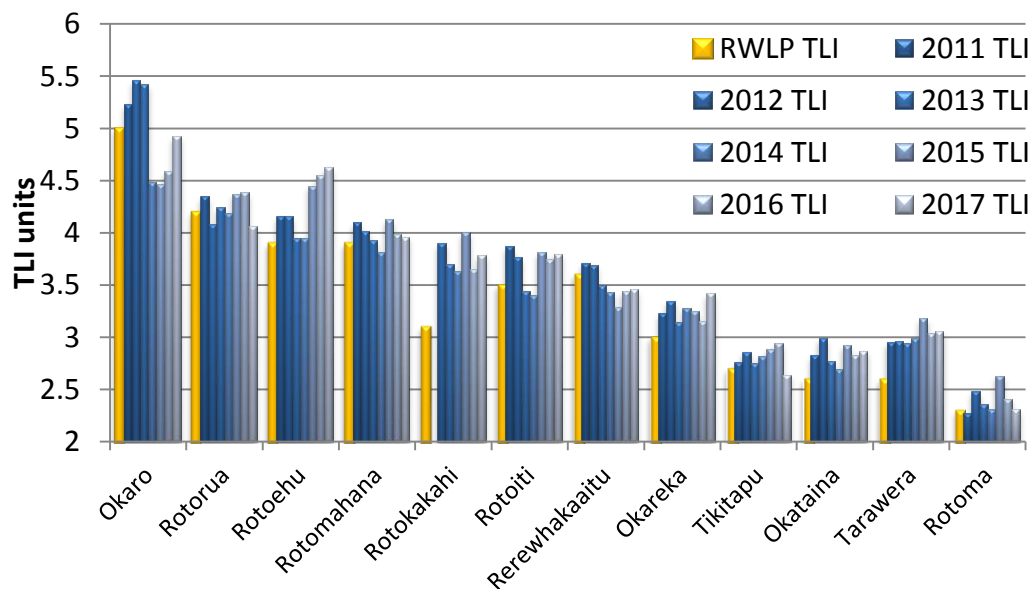
Rotorua Te Arawa Lakes Annual Water Quality Results

Currently five of the twelve Rotorua Te Arawa Lakes meet or are below the RWLP TLI objective. Lakes Rotorua, Okaro and Tikitapu have benefited from the results of restoration activities resulting in meeting community objectives for lake water quality as stated in Objective 11 of the RWLP. Lake Rotoehu and Lake Tarawera continue to show some declining water quality trends resulting in increasing trophic level indices.

Blue-green (cyanobacteria) blooms resulted in health warnings being issued by Toi Te Ora for Lakes Rotoehu and Ōkaro. Lakes Rotoiti, Tarawera and Rotorua reached amber alert levels for some sites over the 2016-2017 summer.

The chart below shows the Regional Water and Land Plan (RWLP) TLI objectives and average annual TLI results, 2011 to 2017.

Note: Lake Rotokakahi TLIs are based on Te Wairoa Stream monitoring and a three-parameter TLI (no Secchi).



The table below summarises the TLI data for the Rotorua Lakes for the period July 2016 to June 2017.

Three-yearly average TLI values, 2016-2017 annual TLI, trophic status and LakeSPI condition for the Rotorua Lakes.

Lake <i>Regional Water & Land Plan Objective</i> <i>TLI units</i>	3-yearly average TLI to 2015 <i>TLI units</i>	3-yearly average TLI to 2016 <i>TLI units</i>	3-yearly average TLI to 2017 <i>TLI units</i>	2014/15 Annual TLI <i>TLI units</i>	2015/16 Annual TLI <i>TLI units</i>	2016-17 Annual TLI	Comply with target TLI?	Lake Type <i>based on Trophic Status</i>	LakeSPI Condition 2014/2015 ¹
Ōkaro 5.0	4.8	4.6	4.7	4.6	4.6	4.9	YES	Eutrophic	Moderate
Rotorua 4.2	4.3	4.3	4.3	4.4	4.4	4.1	YES	Eutrophic	Moderate
Rotoehu 3.9	4.1	4.3	4.5	4.5	4.6	4.6	NO	Eutrophic	Poor
Rotomahana 3.9	3.9	3.9	4.0	4.0	4.0	4.0	NO	Mesotrophic	High
Rotoiti 3.5	3.5	3.8	3.8	3.7	3.8	3.8	NO	Mesotrophic	Poor
Rerewhakaaitu 3.6	3.4	3.4	3.4	3.3	3.4	3.5	YES	Mesotrophic	Moderate
Ōkareka 3.0	3.2	3.2	3.3	3.3	3.2	3.4	NO	Mesotrophic	High
Tikitapu 2.7	2.8	2.9	2.8	2.9	2.9	2.6	YES	Oligotrophic	Moderate
Ōkātina 2.6	2.8	2.8	2.8	2.8	2.8	2.9	NO	Oligotrophic	Moderate
Tarawera 2.6	3.0	3.0	3.1	3.1	3.0	3.1	NO	Oligotrophic	Moderate
Rotoma 2.3	2.4	2.4	2.4	2.5	2.4	2.3	YES	Oligotrophic	High
Rotokakahi* 3.1	3.8	3.8	3.8	4.0	3.7	3.8	NO	Mesotrophic	Moderate

*Italicised figures are based on Te Wairoa Stream monitoring and a three-parameter TLI (no Secchi disk).

Of the 12 Rotorua lakes in the programme, tracking of the water quality shows:

- Lake Ōkaro is at the target level but shows a recent decline
- Water quality continues to improve in Lake Rotorua with the lake reaching its RWLP objective. The lake still remains vulnerable to climatic conditions and a possible decline in water quality in response to longer duration of summer stratification
- Lake Rotoehu continues to decline after initially showing improvement over many years. Like Lake Rotorua it is vulnerable to climatic conditions and longer stratification events
- Lake Rotoiti had shown a long-term improvement in water quality since the peak TLI results of 2003 and also since the installation of the Ōhau Diversion Wall, however the TLI has declined in the past few years
- The water quality of Lake Ōkareka has shown a recent decline, although oxygen demand in the bottom waters is stable
- Lake Tikitapu showed a sudden improvement in water quality
- The water quality is stable in Lakes Ōkātina, Rerewhakaaitu and Rotomahana

¹ NIWA (2015). Assessment of the Rotorua Te Arawa lakes using LakeSPI – 2015.

- There is deteriorating water quality in Lake Tarawera
- After a rapid decline until 2010, Lake Rotokakahi has shown improvement but remains vulnerable and continues to exceed its TLI target

DRAFT

Lake Rotorua

To meet community expectations for Lake Rotorua, nitrogen inputs to the lake need to reduce to 435 tonne of nitrogen per year and approximately 30 tonne of phosphorus.

To achieve these water quality targets for Lake Rotorua, we are undertaking both short-term and long-term interventions. The short-term intervention of phosphorus locking (alum dosing) has resulted in the lake now having a lower annual average TLI than the target TLI. The long-term interventions will eventually bring the improvements needed, so that alum dosing can cease. The Integrated Framework provides for various long-term interventions that will eventually decrease the nitrogen entering the lake by a total of 320 tonne per year - the decrease required to reach the target of 435 tonne. The 320 tonne comprises 100 tonne from the Incentives Scheme and 30 tonne from the Gorse Scheme, both of which will run until 2022. Engineering interventions are expected to account for a decrease of 50 tonne and reductions in the farming community will in time total 140 tonne, driven by the Regional Council's Plan Change 10 rules regarding nutrient leaching.

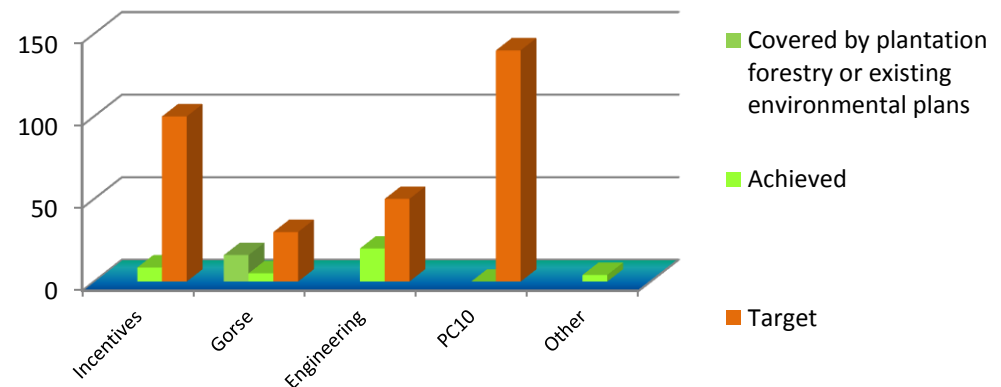
Water quality at a glance:





2017 TLI	4.1
2016 TLI	4.4
2015 TLI	4.4
Target	4.2







The annual average TLI for Lake Rotorua has now reached 4.1, which is below the target TLI of 4.2. Although total nitrogen concentrations were higher than the previous year, this was offset by a marked decrease in total phosphorus, a decrease in chlorophyll-a and improved in water clarity.


Cyanobacteria levels remained relatively low, which was similar to the previous summer. Amber alerts were in place in late January and early February, but no health warnings were required this year.

Progress towards nutrient reduction targets
Nitrogen - Lake Rotorua (tonnes)



Programme Update – Lake Rotorua						
Project	Deed Funded	Total Target	Annual Target	Annual Result	Update	Project Status
LAND USE CHANGE						
Lake Rotorua Regional Water and Land Plan - Proposed Plan Change 10 (including Advice and Support and Low Nitrogen Land Use Fund)	Yes	140 T N	0 T N	0 T N	Advice and Support and the Low Nitrogen Land Use Fund are progressing well, and the proposed Plan Change went through an independent hearing this year, with the panel's report received by BOPRC on the last day of the year. No benefits accruing to these initiatives will be counted until 2022, when the first targets must be met.	
Incentives	Yes	100 T N	No target set	8.44 T N	The Incentives Scheme is now starting to gain pace as more landowners are choosing to start negotiations with the staff. During the year, five agreements were signed, and several others are in the negotiation stage. Note – the annual result counts all the agreements that are committed, though some of the agreements are for land use change at a set future date.	
Gorse	Yes	30 T N	7.0 T N	2.5 T N	Whilst the annual target has not quite been met, an analysis of all agreements or land use changes that manage gorse has shown that we have already converted gorse equating to 16 T N in previous years of the Programme.	
Nutrient Agreements (non-incentives)	No	N/A	3.94 T N 0.08 T P	3.94 T N 0.08 T P	Secured in previous years. Subject to monitoring to ensure compliance.	
Total		270 T N	10.94 T N 0.08 T P	14.88 T N 0.08 T P		

Programme Update – Lake Rotorua						
Project	Deed Funded	Total Target	Annual Target	Annual Result	Update	Project Status
ENGINEERING SOLUTIONS						
Sewerage Reticulation (excluding Brunswick connections)	Yes	9.74 T N 0.80 T P	9.74 T N 0.80 T P	9.74 T N 0.80 T P	Completed in prior years	
Brunswick connections to reticulation	Yes	0.67 T N 0.06 T P	0.67 T N 0.06 T P	0 T N 0 T P	This has not progressed in this financial year as a special consultative process is required, delaying the completion of this initiative until the financial year 2017/2018.	
Tikitere Zeolite Plant	Yes	20-25 T N	N/A	N/A	This engineering project has reached the detailed design stage	
P-locking Utuhina and Puarenga (Alum Dosing)	Yes	As required	As required	8.96 T P	The alum dosing has continued on an as needed basis, with the dosage adjusted as necessary. This intervention is required to continue in the short term to ensure the TLI of the lake does not rise, and needs to continue until the longer term solutions start to show more benefits. Lake Rotorua has had no algal blooms during this year.	
Floating Wetlands	No	0 T N 0 T P	0 T N 0 T P	0.18 T N 0.03 T P	Completed in prior years.	
Detainment Bunds	No	0 T P	0 T P	0.02 T P	Completed in prior years.	

Programme Update – Lake Rotorua						
Project	Deed Funded	Total Target	Annual Target	Annual Result	Update	Project Status
Rotorua Wastewater Treatment Plant Alternative Disposal	No	0 T N 0 T P	0 T N 0 T P	0 T N 0 T P	Preparation for the resource consent application is underway and a matauranga mauri approach to the land contact beds is under consultation with the public	
Total		50 T N	10.41 T N 0.86 T P	9.92 T N 9.81 T P		
Grand Total		320 T N				

Project status: **Green** = on track, **Amber** = some delays, **Red** = major delays.

Lake Rotoehu

To meet community expectations for water quality in Lake Rotoehu, nitrogen inputs to the lake need to reduce by 8.8 tonne of nitrogen and 0.7 tonne of phosphorus on an annual basis. The short-term intervention of alum dosing continues and weed harvesting progresses when needed. The main long-term intervention on this lake has been land use change, and two land use change agreements were made previously that are expected to eventually cover the nitrogen reduction target. Monitoring of these land use changes continues.

Discussions are also underway with regard to including Lake Rotoehu residences in the sewage reticulation scheme for Lakes Rotoiti and Rotomā.

Water quality at a glance:

2017 TLI 4.6

2016 TLI 4.6

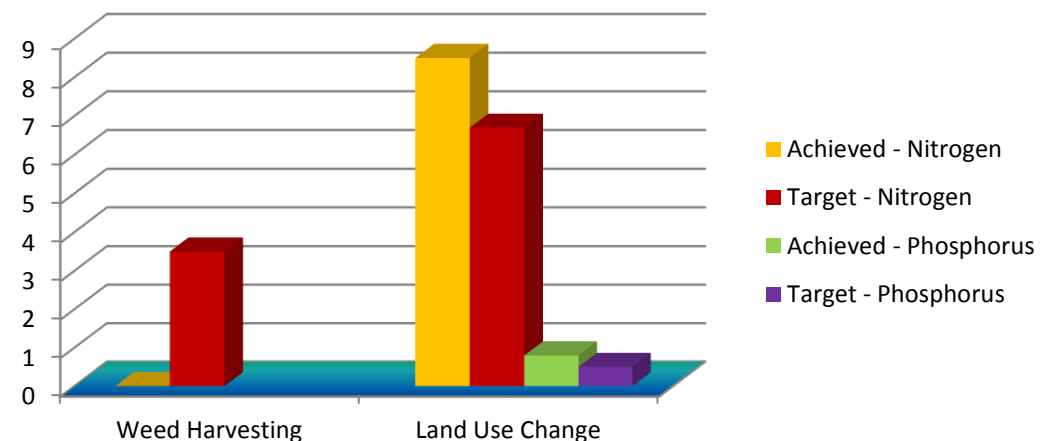
2015 TLI 4.5





Target 3.9

The annual average TLI for Lake Rotoehu remains 0.7 units above the target TLI for the second year running, and the three year average has now increased from a TLI of 4.3 last year to 4.5 this year. The average annual phosphorus concentrations decreased this year, but the water clarity decreased.

Cyanobacteria concentrations were at red alert levels for much of the summer and into the autumn. This resulted in a health warning being placed on the lake by Toi Te Ora from early summer to late April 2017.

Progress towards nutrient reduction targets
Nitrogen and phosphorus - Lake Rotoehu (tonnes)



Project	Deed funded	Total target	Annual Target	Annual Result	Update	Project Status
Land use and land management change	Yes	6.69 T N 0.46 T P	6.69 T N 0.46 T P	8.45 T N 0.81 T P	Existing nutrient agreements are being monitored. Figures shown here are reductions at the root zone, i.e. nutrient loss of the land use activity as measured by OVERSEER.	
Weed harvesting	Yes	3.5 T N 0 T P	3.5 T N 0 T P	0 T N 0 T P	No weed harvesting was possible this year as any weed was situated in inaccessible places.	
P-locking Soda Springs (Alum Dosing)	Yes	As required	As required	3.13 T P	This has been continuing on an as-needed basis, but despite the alum dosing this lake has had algal blooms during the year.	
Floating wetland	Yes	0 T N 0 T P	0 T N 0 T P	0.05 T N 0.01 T P	Completed in prior years.	
Total		10.19 T N 0.46 T N	10.19 T N 0.46 T N	8.50 T N 3.95 T P		

Project status: **Green** = on track, **Amber** = some delays, **Red** = major delays.

Lake Rotoiti

To meet community expectations for water quality, nitrogen inputs to Lake Rotoiti need to reduce by 130 tonne annually and phosphorus inputs by 19 tonne annually. The Ohau Diversion Wall was put in place in 2008 to protect Lake Rotoiti's water quality by diverting water from Lake Rotorua straight to the Kaituna River outlet. A maintenance plan is in place for the wall and repair of corrosion areas will be undertaken. The resource consent for the wall has been agreed for a further 35 years.

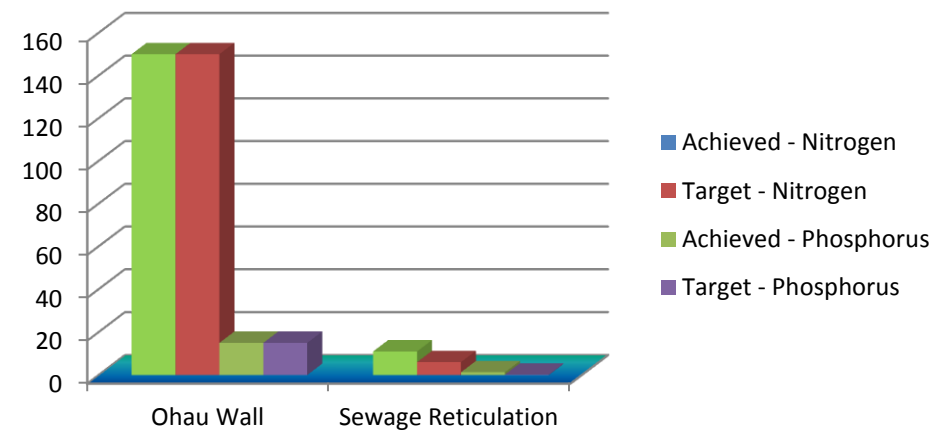
Water quality at a glance:




2017 TLI	3.8
2016 TLI	3.8
2015 TLI	3.8
Target	3.5

Lake Rotoiti's annual average TLI remains above the target TLI for the third year running, which has meant that the three year average dropped from 3.62 last year to 3.8 this year.

Whilst the total nitrogen marginally decreased, the total phosphorus increased. Water clarity decreased, but chlorophyll-a concentrations showed some improvement over previous years.

Progress towards nutrient reduction targets
Nitrogen and phosphorus - Lake Rotoiti (tonnes)



Project	Deed Funded	Total Target	Annual Target	Annual Result	Update	Project Status
Sewerage Scheme (including Curtis Road to Hinehopu)	Yes	4.9 T N 1.1 T P	0 T N 0 T P	0 T N 0 T P	The resource consent application was not heard until after the end of this financial year.	
Ohau Diversion Wall	Yes	150 T N 15 T P	150 T N 15 T P	150 T N 15 T P	The Ohau Diversion Wall was re-consented this year for a further 35 years. A maintenance programme is in place to ensure that that the wall does not deteriorate.	
Completed Rotoiti Reticulation: Okere, Otaramarae, Whangamarino, Mourea, Okawa Bay	Yes	5.9 T N .21 T P	5.9 T N .21 T P	5.9 T N .21 T P	No further works required in 2016-2017	
Total		160.8 T N 16.31 T N	155.9 T N 15.21 T P	155.9 T N 15.21 T P		

Project status: **Green** = on track, **Amber** = some delays, **Red** = major delays.

Lake Ōkareka

To meet community expectations for water quality annual nutrient reductions of 2.5 tonnes nitrogen and 80kg of phosphorus are required. Despite the work to complete the actions in the Lake Ōkareka Action Plan, the lake has remained above its target TLI and is now 0.4 units above that target.

A further land use change project has been initiated and initial investigation have been undertaken, but the main work to secure further land use change will progress in 2017/2018. Work to monitor the Rule 11 nutrient cap started in December 2016 and will continue into 2017-2018.

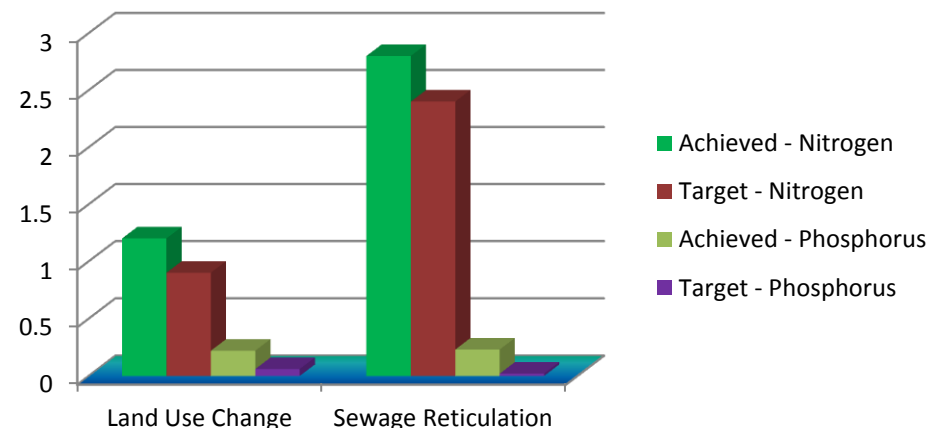
Water quality at a glance:



2017 TLI	3.4
2016 TLI	3.2
2015 TLI	3.3
Target	3.0

The annual average TLI for Lake Ōkareka has increased to 3.4 and so now sits at 0.4 units above the target TLI. All components of the TLI measure showed an increase this year.

The three year average TLI also shows a rise this year, from 3.15 last year to 3.3 this year.

Progress towards nutrient reduction targets
Nitrogen and phosphorus - Lake Okareka (tonnes)



Project	Deed Funded	Total Target	Annual Target	Annual Result	Comments	Project status
Sewerage Reticulation	Yes	2.40 T N 0.02 T P	2.40 T N 0.02 T P	2.83 T N 0.23 T P	Project complete.	
Land Use Change	Yes	0.90 T N 0.06 T P	0.90 T N 0.06 T P	1.18 T N 0.22 T P	Project complete.	
Total		3.30 T N 0.08 T P	3.30 T N 0.08 T P	4.01 T N 0.45 T P		

Actions and Outcomes for Non Deed Lakes

Lake Tikitapu

2017 TLI	2.6	The trend for Lake Tikitapu was showing a gradual but slight decline in the annual TLI results, but this year showed a significant improvement and the lake now exceeds its target TLI for the first time since 1996. An almost two metre increase in annual average water clarity was the main driver for the TLI improvement.
2016 TLI	2.9	
2015 TLI	2.9	The three year average TLI also dropped slightly, from 2.88 in 2015-2016 to 2.82 this year.
Target	2.7	

Lake Ōkātina

2017 TLI	2.9	Lake Ōkātina's annual average TLI increased slightly this year. A decrease in water clarity, which had improved by over a metre in 2015-2016, and an increase in chlorophyll-a were the main factors in the TLI increase. This lake is now 0.3 units above its target TLI and a watching brief will be kept on the lake
2016 TLI	2.8	
2015 TLI	2.8	The PhD study by the University of Waikato on the lake is complete and the final report is awaited.
Target	2.6	

Lake Ōkaro

2017 TLI	4.9	For the fourth year in succession the annual average TLI for Lake Ōkaro has remained below the target TLI, however the lake does show a marked decline this year. This was driven by a bloom event in September 2016 which saw an increase in nitrogen, phosphorus and chlorophyll-a. In addition, water clarity has been on average 40 centimetres less than the previous year.
2016 TLI	4.6	
2015 TLI	4.5	Cyanobacteria were present at amber alert levels when summer monitoring began in November 2016. Red level alerts were reached for a few weeks in December and January and again in February, resulting in a health warning being issued by Toi Te Ora. The blooms ceased in March 2017.
Target	5.0	

Lake Rotomā

2017 TLI	2.3	The only outstanding intervention for Lake Rotomā is sewage reticulation, which is progressing as outlined above. The lake reached its target TLI this year, and the drop in TLI was largely due to a decrease in phosphorus levels. Chlorophyll-a levels were the lowest observed since 1996.
2016 TLI	2.4	
2015 TLI	2.6	A four year study is continuing to understand the effects of forest harvesting on phosphorus in the lake.
Target	2.3	

Lake Rerewhakaaitu

2017 TLI	3.5	Lake Rerewhakaaitu remains below its target TLI with both the annual average TLI and the three year average TLI (3.4).
2016 TLI	3.4	The Programme has contracted a Project Manager to work with farmers to develop Farm Environmental Plans as one of the first actions as part of the Catchment Management Plan. The Lake Rerewhakaaitu Incorporated Society is encouraging the community to work with the Project Manager.
2015 TLI	3.3	
Target	3.6	Nitrogen levels in this lake continue to show a decline over the last nine years.

Lake Tarawera

2017 TLI	3.1	<p>Lake Tarawera's annual average TLI has deteriorated slightly since the previous year and is now 0.5 units above the target TLI. Annual average nitrogen concentrations increased to the highest in eight years, though the annual average water clarity has improved compared to the previous five years.</p> <p>Cyanobacteria levels triggered amber alerts at Hot Water beach in January through to March and an amber alert was also in place for Stoney Point for three weeks from the end of January into February, but no health warnings were necessary in the last season.</p> <p>Acacia control took place in the catchment this year as in previous years.</p>
2016 TLI	3.0	
2015 TLI	3.1	
Target	2.6	

Lake Rotokakahi

2017 TLI	3.8	<p>The annual average TLI for Lake Rotokakahi (measured at the outflow) remains considerably above its target TLI.</p> <p>No cyanobacteria blooms were observed over the summer months. Phosphorus concentrations remained stable but nitrogen showed an increase.</p> <p>Staff continue to work with the private lake owners to develop an action plan.</p>
2016 TLI	3.7	
2015 TLI	4.0	
Target	3.1	

Lake Rotomahana

2017 TLI	4.0	<p>Lake Rotomahana's annual average TLI remains just slightly above its target TLI. Phosphorus concentration increased slightly from the last year and water clarity decreased slightly.</p> <p>As yet the lake has not exceeded the trigger for the development of an action plan.</p>
2016 TLI	4.0	
2015 TLI	4.0	
Target	3.9	

Communications and stakeholder engagement update

The main focus for Communications this year continues to be the Integrated Framework. However, there has been a shift from letting people know about the rules to informing them of the other parts of the programme that are in place to achieve the aspirations of our community with regards to water quality.

Highlights of activity that occurred:

- **Media results** – media releases and pitches prepared generated good coverage from a combination of local and national media. Key stories were around the first Incentives deal which was on the cover of Dairy News Weekly and projects awarded funding under the Low Nitrogen Land Use Fund.
- **Plan Change 10** - development of materials, preparation of media releases, media briefings etc for the hearings process and Advice & Support available for affected landowners.
- **State of our Lakes** – this event attracted over 150 people as Professor David Hamilton presented his farewell lecture. It was a great way to share knowledge with the community. It was also filmed, posted on Facebook and shared by many.
- **Facebook** - ongoing activity on the Programme Facebook page. The page grew from 1,290 likes to 1,760 likes. The page has been a helpful tool to engage with an audience that isn't affected by the work that we do but benefit from the outcomes of clean water. We ran a #loveourlakes Rock Hunt which helped share some of the activities we carry out such as the Gorse Conversion Programme, Weed Harvesting and Koura Monitoring. We also ran a Winter Walks competition where followers could share photos of the lake while out for a walk.
- **Low Nitrogen Land Use Fund** - the Low Nitrogen Land Use Fund was launched in the past year and we received a huge amount of interest from applicants and also media around the successful projects such as dNITRO tool, the hazelnut project and good management practice videos. This will continue in to the next year as more projects are publicly launched.
- **Guide for lifestyle blocks** – this guide was developed to provide information on nutrient management best practices for smaller lifestyle block owners who will not need to make changes to their land use under PC10.
- **Community newsletters** – regular contributions are made and published by the Lake Rotoiti, Lake Ōkāreka and Collective e-newsletters as well as BOPRC e-newsletters Freshwater Flash and Komiti Māori panui. This is a helpful way to reach key stakeholders affected by our work.
- **E-newsletter** – our very own Lakes e-newsletter has around 500 subscribers and an average opening rate of 54% which is an excellent result. An open rate of 20% is generally considered good for government organisations.

Science update

The Rotorua Lakes Science Plan outlines the existing Science Programme, identifies information gaps and provides a clearer picture of the future research needs.

The Science Plan has a foundation of long-term monitoring managed by BOPRC staff as part of the NERMN² Monitoring Programme. The University of Waikato (UoW) along with other Crown Research Institutes and consultants are key service providers within the plan. They provide strategic direction for science research as well as undertaking the research needs.

The plan outlines current research, a method for identifying new restoration solutions and the direction for new research as our restoration work on the lakes progresses. One of the most significant changes signalled in the plan is the increased focus on long-term catchment land use and the need for science and economic advice in that area to support management decisions and Council policy formulation for rule development.

With the formation of the Land Technical Advisory Group, information gaps and research needs for land use to support policy and incentives have been developed.

Land Technical Advisory Group

To provide strategic and technical advice on land-based nutrient management solutions for water quality, a Land Technical Advisory Group (Land TAG) has been established.

The Land TAG provides independent technical science and economics advice on existing and new catchment land uses, their effects on water quality and how to mitigate them. The work of the Land TAG has been reviewed to identify better ways of identifying issues and finding alternative solutions. The Land TAG now operates on the basis of targeted workshops where specific expertise is brought in to address particular land management issues.

The direction, support and advice provided by the Land TAG have been instrumental for the implementation of the Lake Rotorua Incentives Scheme. Most recently Land TAG was engaged in a workshop on phosphorus management and loss from land use.

Water Quality Technical Advisory Group

The Water Quality Technical Advisory Group (WQTAG) continued to meet to review science aspects of the programme. The main work of the WQTAG over the past year included:

- Model updates for Lakes Rerewhakaaitu, Tarawera, Okareka and Rotoiti
- Review of alum efficacy from the alum dosing plants
- Management of the high frequency monitoring buoys, including additional buoys to lakes Rotokakahi and Rerewhakaaitu
- Catchment nitrogen modelling for Lake Rotorua, through the ROTAN³ model
- The impact of the Ohau diversion wall on Lake Rotoiti, as part of the re-consenting project
- Advice and support via the University of Waikato and NIWA to PC10 hearings

² National Environmental Regional Monitoring Network

³ Rotorua Taupō Nitrogen Model

- Design of phytoplankton nutrient limitation work on Lake Rotorua
- Commenced position paper on aquatic plants in the Rotorua Te Arawa Lakes as advice for the programme and community
- Commenced discussion on climate change impact for the Rotorua Lakes, with the objective of providing advice for the programme and community
- Commenced the science review required by PC10

Environmental modelling

Environmental modelling is an important part of the science supporting the programme. During 2016-2017, the modelling from the following projects was used to support PC10:

- Assessing the Effects of Alum Dosing two Inflows to Lake Rotorua against external nutrient load reductions: model simulations for 2001-2012
- Predicting nitrogen inputs to Lake Rotorua using ROTAN-Annual
- Updated Lake Rotorua nutrient budget based on updated OVERSEER files

Other projects included:

- Progressed catchment and lake modelling of Lake Ōkāreka
- Completed the groundwater model report for the greater Tarawera Catchment
- Progressed the Lake Rerewhakaaitu model

Action Plans and sewage reticulation

The programme continues to provide science input to Action Plan implementation and sewage treatment and reticulation projects. Implementation of actions includes the on-going approvals for operation such as the Ohau Diversion Wall and the three alum dosing plants. The Ohau wall has obtained resource consent for 35 years and this process was supported by the science team at UoW to establish the impact on water quality as well as fisheries of the diversion wall. The alum dosing plants as well as the dosing at Lake Ōkaro are reliant on science investigations to ensure effective and efficient application of alum as well as ensuring environmental safety from the dosing programme.

The science team also has an input into the sewage treatment and reticulation through the steering groups and technical advice.

Financials

DRAFT

Rotorua Te Arawa Lakes Programme - Report C

Draft - CFO Forum Financial Detailed Statement - Year End Report 2016/17 (July to June 2017)

	(A)	(B)	(C)	D = (B+C) 5.2.2 a Total actual + forecast Expenditure to year end 2016/17	E = (A-D) Forecast variance to Annual Plan 2016/17 over/(under) spend	Year end forecast under/overspend status	(F) Council funding 5.2.2 C (i) Council funding reserve	(G) Crown Funding 5.2.2 D Forecast Annual Work Programme Crown Funding 2016/17	Programme reserves MfE surplus / (deficit)	Reserve interest received	(H) Funding from any other sources	(I) Total funding required	(J) = (-A-I) Total Programme surplus (deficit)	5.4.2 (e) Forecast Funding committed to deferred works
Clause 5.2 / 5.4.2 (e) Interventions	Council Annual Plan Budget	Actual expenditure to date 2016/17	Remaining forecast expenditure to year end	Total actual + forecast Expenditure to year end 2016/17										
Lake Rotoehu	\$000	\$000	\$000	\$000	\$000		\$000 \$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Weed Harvesting	100	7	0	7	(93) Underspend		2 2	50	47	0	0	7	(93)	0
Land Management Change	0	0	0	0	0 -		0 0	0	0	0	0	0	0	0
Phosphorus Locking Soda Springs	136	207	0	207	71 Overspend		52 52	89	(15)	0	0	207	71	0
Aeration	0	0	0	0	0 -		0 0	0	0	0	0	0	0	0
Sediment capping	0	0	0	0	0 -		0 0	0	0	0	0	0	0	0
Wetlands	0	0	0	0	0 -		0 0	0	0	0	0	0	0	0
Total Lake Rotoehu	236	214	0	214	(22)		54 54	139	32	0	0	214	(22)	0
Lake Ōkāreka														
Sewerage Reticulation	0	0	0	0	0 -		0 0	0	0	0	0	0	0	0
Land Management Change	0	6	0	6	6 Overspend		2 2	0	(3)	0	0	6	6	0
Outlet Structure	0	0	0	0	0 -		0 0	0	0	0	0	0	0	0
Total Lake Ōkāreka	0	6	0	6	6		2 2	0	(3)	0	0	6	6	0
Lake Rotorua														
Advice and Support	501	176	0	176	(325) Underspend		44 44	250	162	0	0	176	(325)	0
Phosphorus Locking	750	631	0	631	(119) Underspend		158 158	375	59	0	0	631	(119)	0
Tikitere Diversions	150	353	0	353	203 Overspend		88 88	81	(95)	0	0	353	203	0
Gorse	547	139	0	139	(408) Underspend		35 35	225	156	0	0	139	(408)	0
Wetlands	0	0	0	0	0 -		0 0	0	0	0	0	0	0	0
Land Incentive Payments	4,000	2,509	0	2,509	(1,491) Underspend		627 627	1,250	(4)	0	0	2,509	(1,491)	1,664
Land Incentive Board Administration	500	449	0	449	(51) Underspend		112 112	250	26	0	0	449	(51)	0
Low Nitrogen Land Use Fund	501	349	0	349	(153) Underspend		87 87	250	76	0	0	349	(153)	0
Sewerage Reticulation	320	6	0	6	(314) Underspend		2 2	0	(3)	0	0	6	(314)	0
Total Lake Rotorua	7,270	4,612	0	4,612	(2,658)		1,153 1,153	2,681	375	0	0	4,612	(2,658)	1,664
Lake Rotoiti														
Sewerage Reticulation	870	779	0	779	(91) Underspend		195 195	0	(390)	0	0	779	(91)	3,954
Ohau Wall Reconsenting	514	69	0	69	(445) Underspend		17 17	260	225	0	0	69	(445)	0
Total Lake Rotorua	1,384	848	0	848	(536)		212 212	260	(164)	0	0	848	(536)	3,954
Rotorua District														
Treatment and Disposal	0	0	0	0	0 -		0 0	0	0	0	0	0	0	0
Total Rotorua District	0	0	0	0	0		0 0	0	0	0	0	0	0	0
Total Programme - Expenditure	8,890	5,680	0	5,680	(3,210)		1,420 1,420	3,080	240	0	0	5,680	(3,210)	5,617
Programme Expenditure by Council including interest														
Rotorua Lakes Council	1,190	785	0	785	(405) Underspend		196 196	0	(393)	83	0	785	(322)	3,954
Bay of Plenty Regional Council	7,700	4,895	0	4,895	(2,805) Underspend		1,224 1,224	3,080	632	31	0	4,895	(2,774)	1,664
Total Programme	8,890	5,680	0	5,680	(3,210)		1,420 1,420	3,080	240	114	0	5,680	(3,096)	5,617
Funding by Authority including interest														
MfE	4,445	2,840	0	2,840	(1,605)		0 0	3,080	0	114	0	125	0	
Rotorua Lakes Council	595	393	0	393	(203)		196 196	0	0	0	0	0	0	
Bay of Plenty Regional Council	3,850	2,448	0	2,448	(1,403)		1,224 1,224	0	0	0	0	0	0	
Total Funding by Authority	8,890	5,680	0	5,680	(3,210)		1,420 1,420	3,080	0	114	0	125	0	

Presentations

Reports Continued

Receives Only – No Decisions



Report To: Rotorua Te Arawa Lakes Strategy Group

Meeting Date: 08 September 2017

Report From: Chris Ingle, General Manager, Integrated Catchments

Rotorua Te Arawa Lakes Programme - Status Report

Executive Summary

The purpose of this report is to provide an update on progress made in the Rotorua Te Arawa Lakes Programme, as well as outlining any issues or actions which are not covered by other agenda items.

This report covers the period since the last Rotorua Te Arawa Lakes Strategy Group meeting, held on 27 June. It provides an update on key programme work and also provides an update on Plan Change 10.

Recommendations

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Rotorua Te Arawa Lakes Programme - Status Report;**

1 Programme Status

The programme status dashboard is attached as Appendix 1. This provides the simple visual summary of progress on key projects in the programme for the financial year and provides a summary of overall programme progress, planned activities and programme highlights as well as a summary of current risks in the programme.

The programme financial report is attached as Appendix 2 and covers the end of year as approved at the programme's CFO forum meeting on 22 August 2017. The financial report is pending audit signoff in September 2017. The report includes a financial summary by each Deed funded lake and indicates the funding provided by each Council and by the Ministry for the Environment.

2 Project Updates

2.1 Plan Change 10

The recommendations of the independent hearings panel for Proposed Plan Change 10 were released to Council on 30 June 2017 and accepted by Council's Regional

Direction and Delivery Committee on 2 August 2017. Proposed Plan Change 10 was publically notified on 15 August 2017 with a 30 day timeframe for the lodgment of any appeals to the Environment Court. The acceptance of the panel's recommendations has resulted in some reallocation of nitrogen discharge allocations (NDAs). The main impact relates to properties under 40 hectares that have not been benchmarked under Rule 11. These properties now have an NDA of 18kg of nitrogen per hectare, rather than the sector average of 24kg per hectare. This indicates that these properties can only be used for low intensity farming. This affects not only those landowners, but also larger farming enterprises that lease such smaller blocks for higher intensity farming.

In addition, owners of Te Ture Whenua land in plantation forestry or bush and scrub have the ability to undertake land use change and gain a higher nitrogen discharge allocation, allowing the landowners to turn their land into pasture if their land is suitable and if they can prove that potential for development has been previously been prevented.

To prepare for the implementation of Proposed Plan Change 10, a cross-team workgroup has been meeting on a weekly basis to develop the necessary documents and processes. The issuing of resource consents will start once farming enterprises have an up to date nutrient management plan (NMP).

2.2 Lake Rotorua Advice and Support

126 farming enterprises are engaged in Advice and Support and 20 of these have requested a resource consent. Since 1 July 2017, farming enterprises of over 40 hectares are required to obtain a resource consent unless they are low-intensity.

The Advice and Support service has been on hold since 30 June awaiting:

- The notification of Plan Change 10
- The revision of the NDAs. A list of priority properties has been drawn up and NDAs are progressively being reworked. A workaround for a bug in Overseer has been implemented and the requisite changes for this will be done alongside the changes required for Plan Change 10.
- The revision of the NMP template. The NMP template is being reworked to ensure that it meets the requirements of Schedule LR 6 of Plan Change 10.

In addition, all 55 NMPs that have been finalised to date will need to be re-worked because of the changes to NDAs.

The Advice and Support service will be able to progress resource consent applications as soon as the NMP template is finalised and the applicants have a revised NMP from their Land Use Advisor. Until the end of September 2017, resource consents in relation to Plan Change 10 will remain free of charge to farming enterprises over 40 hectares that request a consent by contacting Advice and Support.

2.3 Lake Rotorua Gorse Scheme

One trust with a large gorse block is currently considering its options, but other than that the Gorse Scheme has been very quiet, whilst landowners consider the implications of Plan Change 10.

With the Proposed Plan Change 10 reallocation of 11.9 tonne of nitrogen to Te Ture

Whenua land in plantation forestry or bush and scrub, there might be an impact on the Gorse Scheme achieving its target as eligible landowners can potentially convert suitable gorse areas to pasture, whereas the Gorse Scheme covers the conversion of gorse to forestry or native trees.

2.4 Lake Rotorua Incentives Scheme

The Lake Rotorua Incentives Committee has now signed a total of five agreements. Another two large properties are in the pipeline, together with four smaller properties. However progress on meaningful negotiations has stalled awaiting the revised NDAs and NMPs as indicated above.

2.5 Low Nitrogen Land Use Fund

The five projects that are underway are progressing well and are outlined below. The sixth project has still not yet started though agreement has now been reached with the new general manager of the farming enterprise to progress two of the tranches – the feasibility of free range egg production as an alternative land use, and also an investigation into whether dairy sheep farming is viable in the catchment as an option for dairy farmers to adopt. The third tranche, mānuka for oil, has been delayed whilst the farming enterprise locates a suitable site on one of its farms and also considers the risk of myrtle rust.

The dNITRO tool is proving invaluable in assisting landowners to see the potential of putting part or all of their properties into trees. This project is now finished apart from a final report.

The best practice videos produced by Landconnect have been launched and will be a useful resource for farmers. The filming is of high quality and the short videos feature local farmers discussing how they put the nutrient management best practices into effect. See <http://www.rotoruafarmers.org.nz/new-videos-showcase-rotorua-farming-practices-help-protect-water-quality/>

The project by Whenua Ora to take a group of farmers through potential changes to their farm systems is ongoing, but has been affected by the requirement for landowners to be provided with updated NDAs. Once this group has been provided with new NDAs, some reworking of previous analyses provided to the farmers will be required. The contract for this project will be suitably updated to ensure the project can still fulfil its aims.

The Land Resource Guide is now undergoing its final editing stage before release to the public. Discussions have taken place within the programme with regards to whether all the proposed land uses that have been researched by the Te Arawa Primary Sector project team should be included in the guide. Some proposed land uses have now been removed as they would involve excessive soil disturbance.

The hazelnut project is progressing now as the trees have been planted and the research project set up as agreed. Information on the trees' survival rates, their management requirements and their yields will be kept. A number of farmers and lifestyle block owners in the Lake Rotorua catchment have also taken between 10 and 30 trees to trial at their various properties. All involved attended a workshop on growing hazelnuts and will also attend a practical demonstration of pruning later in the year.

2.6 Tikitere Zeolite Plant

Work continues on the detailed design for the Zeolite plant at Tikitere. On completion of the detailed design, the full cost of the plant will be known.

2.7 Catfish

The catfish netting programme this year will continue to focus outside the Te Weta Bay cordoned area, where the majority of the catfish are contained. Surveillance will be undertaken in Lakes Rotorua, Okataina and Rotoehu. Acoustic tagging will be progressed with 30 catfish to gain a better understanding of catfish movements, and the research on stomach contents of catfish will be completed, giving a better understanding of the potential impacts on lake ecosystems.

The Lakes Water Quality Society Symposium this year features a session on the catfish incursion of Lake Rotoiti and a session on the potential effects of catfish on koura in the Rotorua Te Arawa Lakes.

2.8 Lakes Trophic Level Index Results

The annual average trophic level index (TLI) results for the lakes have been calculated, and this year five of the lakes have reached or exceeded their target TLI: Lakes Rotorua, Rerewhakaaitu, Rotoma, Tikitapu and Okaro. Although five lakes meeting their TLI is a positive improvement, looking at a single year in isolation does not give the full picture as weather patterns can have an influence. Looking at the three yearly average TLI, a measure that helps smooth out annual fluctuations, shows that just two of the lakes reached their target TLI – Lake Rerewhakaaitu and Lake Okaro, and Lake Rotomahana was close to its TLI being only 0.1 units above its target.

Linda Goldsmith
Rotorua Catchments Manager

for General Manager, Integrated Catchments

1 September 2017

APPENDIX 1

2017-16-08 Te Arawa Rotorua Lakes Programme Dashboard

Rotorua Te Arawa Lakes Programme - July 2017																	
Programme Manager		Linda Goldsmith		As of PSG meeting		Jul-17		Green		Programme Highlights - July 2017							
Project Sponsor		Chris Ingle		Previous RAG status				Green		<div><div><div><div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></d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APPENDIX 2

RTALP Year End Report 2016_17

Rotorua Te Arawa Lakes Programme - Report C

Draft - CFO Forum Financial Detailed Statement - Year End Report 2016/17 (July to June 2017)

	(A)	(B)	(C)	D = (B+C) 5.2.2 a	E = (A-D)		(F) Council funding 5.2.2 C (i)		(G) Crown Funding 5.2.2 D		(H)	(I)	(J) = (-A-I)	5.4.2 (e)	Clause 5.4.3:	
Clause 5.2 / 5.4.2 (e) Interventions	Council Annual Plan Budget	Actual expenditure to date 2016/17	Remaining forecast expenditure to year end	Total actual + forecast Expenditure to year end 2016/17	Forecast variance to Annual Plan 2016/17 over/(under) spend	Year end forecast under/overspend status	Council funding	Council reserve	Forecast Annual Work Programme Crown Funding 2016/17	Programme reserves MfE surplus / (deficit)	Reserve interest received	Funding from any other sources	Total funding required	Total Programme surplus (deficit)	Forecast Funding committed to deferred works	Comments and issues raised
Lake Rotoehu	\$000	\$000	\$000	\$000	\$000		\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
Weed Harvesting	100	7	0	7	(93)	Underspend	2	2	50	47	0	0	7	(93)	0	Additional materials costs and overspend off set by p.locking underspend against Lake Rotorua
Land Management Change	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	
Phosphorus Locking Soda Springs	136	207	0	207	71	Overspend	52	52	89	(15)	0	0	207	71	0	
Aeration	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	
Sediment capping	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	
Wetlands	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	
Total Lake Rotoehu	236	214	0	214	(22)		54	54	139	32	0	0	214	(22)	0	
Lake Ōkāreka																
Sewerage Reticulation	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	\$50k endorsed spend from Strategy Group of \$50k has been deferred.
Land Management Change	0	6	0	6	6	Overspend	2	2	0	(3)	0	0	6	6	0	
Outlet Structure	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	
Total Lake Ōkāreka	0	6	0	6	6		2	2	0	(3)	0	0	6	6	0	
Lake Rotorua																
Advice and Support	501	176	0	176	(325)	Underspend	44	44	250	162	0	0	176	(325)	0	Advice and supporting for instigating the rules around nutrient leaching, was underspent as farming enterprises have been reluctant to complete their nutrient management plans until the results of the plan change hearings are known.
Phosphorus Locking	750	631	0	631	(119)	Underspend	158	158	375	59	0	0	631	(119)	0	Done on an "as needed" basis, and there has been less requirement for alum dosing this year.
Tikitere Diversions	150	353	0	353	203	Overspend	88	88	81	(95)	0	0	353	203	0	Project has advanced quicker than expected. CR for \$150k overspend agreed.
Gorse	547	139	0	139	(408)	Underspend	35	35	225	156	0	0	139	(408)	0	Various agreements in progress but delays experienced in obtaining encumbrances on deeds.
Wetlands	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	
Land Incentive Payments	4,000	2,509	0	2,509	(1,491)	Underspend	627	627	1,250	(4)	0	0	2,509	(1,491)	1,664	Reforecasting year end position in March. Funding of \$750k reduce from MfE as reserves funds to be applied. Underspend of \$1 million forecast 2016/17
Land Incentive Board Administration	500	449	0	449	(51)	Underspend	112	112	250	26	0	0	449	(51)	0	
Low Nitrogen Land Use Fund	501	349	0	349	(153)	Underspend	87	87	250	76	0	0	349	(153)	0	Underspend as the largest of the 6 agreed projects has not yet been contractually agreed due to a change in the business's GM.
Sewerage Reticulation	320	6	0	6	(314)	Underspend	2	2	0	(3)	0	0	6	(314)	0	The final sewerage connections at Brunswick have not progressed due to the need for a special consultative process. CR approved.
Total Lake Rotorua	7,270	4,612	0	4,612	(2,658)		1,153	1,153	2,681	375	0	0	4,612	(2,658)	1,664	
Lake Rotoiti																
Sewerage Reticulation	870	779	0	779	(91)	Underspend	195	195	0	(390)	0	0	779	(91)	3,954	Consenting process has not resulted in additional consultative or mediation process as was originally budgeted. Result in a forecast underspend. CR pending.
Ohau Wall Reconsenting	514	69	0	69	(445)	Underspend	17	17	260	225	0	0	69	(445)	0	
Total Lake Rotorua	1,384	848	0	848	(536)		212	212	260	(164)	0	0	848	(536)	3,954	
Rotorua District																
Treatment and Disposal	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	
Total Rotorua District	0	0	0	0	0		0	0	0	0	0	0	0	0	0	
Total Programme - Expenditure	8,890	5,680	0	5,680	(3,210)		1,420	1,420	3,080	240	0	0	5,680	(3,210)	5,617	
Programme Expenditure by Council including interest																
Rotorua Lakes Council	1,190	785	0	785	(405)	Underspend	196	196	0	(393)	83	0	785	(322)	3,954	
Bay of Plenty Regional Council	7,700	4,895	0	4,895	(2,805)	Underspend	1,224	1,224	3,080	632	31	0	4,895	(2,774)	1,664	
Total Programme	8,890	5,680	0	5,680	(3,210)		1,420	1,420	3,080	240	114	0	5,680	(3,096)	5,617	
Funding by Authority including interest																
MfE	4,445	2,840	0	2,840	(1,605)		0	0	3,080	0	114	0	125	0		
Rotorua Lakes Council	595	393	0	393	(203)		196	196	0	0	0	0	0	0		
Bay of Plenty Regional Council	3,850	2,448	0	2,448	(1,403)		1,224	1,224	0	0	0	0	0	0		
Total Funding by Authority	8,890	5,680	0	5,680	(3,210)		1,420	1,420	3,080	0	114	0	125	0		

Report movement summary comments:	Opening Reserve Balance 2016/17	1st Qtr Report - Forecast Year End Movement (expenditure & revenue)	Six Month Report - Forecast Year End Movement (expenditure & revenue)	Qtr 3 Month Report - Forecast Year End Movement (expenditure & revenue)	Year End Movement (expenditure & revenue)	Year end reserves balance	
By Intervention							
Lake Rotoehu	0	(21)	(12)	3	(32)	32	
Lake Ōkāreka	0	0	0	25	3	(3)	
Lake Rotorua	1,160	1,304	822	212	(375)	1,535	Committed reserve funds BoPRC against Land Incentive payments
Lake Rotoiti	4,103	432	314	229	164	3,939	Committed reserve funds RLC against Rotoiti sewerage reticulation
Rotorua District	0	0	0	0	0	0	
	5,263	1,715	1,124	469	(240)	5,503	
By Council							
Rotorua Lakes Council	4,263	595	596	351	393	3,871	
Bay of Plenty Regional Council	1,000	1,120	528	118	(632)	1,632	
	5,263	1,715	1,124	469	(240)	5,503	
Est accrued interest	0	(149)	(143)	(151)	(114)	(114)	
Forecast reservse balance	5,263	1,566	981	318	(354)	5,617	

Receives Only – No Decisions



Report To: Rotorua Te Arawa Lakes Strategy Group

Meeting Date: 08 September 2017

Report From: Chris Ingle, General Manager, Integrated Catchments

Lake Rotorua Incentives Scheme - Update Report

Executive Summary

As at the end of the 2016/17 financial year, the Lake Rotorua Incentives Board secured 5 Incentive agreements totalling 8.5 tonnes in-lake nitrogen with a financial commitment of \$3.8million.

There are a further 8 landowners registered with the Incentives scheme willing to negotiate, with 4 of these landowners expressing an interest via the small landowner's expressions of interest programme (<1 tonne).

Negotiations with landowners currently in the pipeline were stalled over the July/August period due to a "bug" in OVERSEER. Nutrient management plans are being reworked including reassessment of the nitrogen available for sale to the Incentives Board.

The target for the end of this current calendar year (including the 8.5 tonnes already achieved) is 20 tonnes. This will now be challenging given the delays and the need to rework NMPs. However with the current deals in the pipeline this is still potentially achievable and remains the target.

The "dNITRO" project (www.dnitro.co.nz) under the low nitrogen fund initiative has effectively been concluded and has proven itself to be a very useful tool, for Maori landowners in the first instance. Over 30 Maori landowner groups have attended presentations on the use of this tool and to date 10 groups have expressed a desire to progress discussions, 4 of which are currently in the pipeline. Extension of the tool to the pastoral sector generally will be the next phase for dNITRO.

Recommendations

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Lake Rotorua Incentives Scheme - Update Report;**

1 Purpose

The purpose of this report is to provide an update to the Rotorua Te Arawa Lakes Strategy Group on progress made by Lake Rotorua Incentives Board towards achieving its nitrogen reduction targets within its terms of reference and within approved budgets.

2 Background

The objective of the Incentives programme is to permanently reduce the level of nitrogen entering Lake Rotorua by 100 tonnes per year within a budget of \$40 million by purchasing rights to discharge nitrogen below the level established by the assigned nitrogen discharge allowance. The timeline for this to be completed is December 2022.

The decision to proceed before the Rules for nitrogen discharge took effect has been challenging in terms of facilitating and negotiating deals. However, following the BOPRC's recent decision to adopt the recommendations around PC10, it is anticipated that increased certainty that results from this decision will assist landowner decision-making and create an enhanced negotiation environment.

3 Activities

Key focus continues to be on engaging with landowners, developing a pipeline of opportunities and negotiating and concluding deals.

5 deals have been settled in the 2016/17 financial year totalling 8.5 tonnes of in-lake nitrogen. Total funds committed amounts to \$3.8million.

There are currently 8 further landowners registered in the Incentives pipeline, 4 of which have come through the expressions of interest process for landowners with less than 1 tonne of in-lake nitrogen for sale.

The dNITRO tool project is one of the low nitrogen fund projects. It has been presented to over 30 landowner groups. 10 of these groups have requested follow-up discussions. 4 of the groups who have used dNITRO are in the current pipeline and it is expected that more will follow. It has been a highly useful addition to the Incentives toolkit and while its initial focus has been on Maori landowners, the intent is to extend its use to the pastoral sector generally

4 Issues

Through the July/August period, engagement and negotiations with landowners was stalled due to a "bug" being found in OVERSEER. This has since been fixed but required Nitrogen Discharge Allowances to be reassessed, Nutrient Management Plans to be reworked and the amount of nitrogen available for sale to be re-determined. The Advice and Support Land Management team have agreed to give those landowners currently in the pipeline priority for these reassessments.

An ongoing issue for the Incentives Board has been around the uncertainty created by proceeding before the nitrogen discharge rules (PC10) have been concluded and the general reluctance of many landowners in the pastoral sector to engage with the Incentives programme as a result. The recent adoption by the BOPRC of the Environmental Commissioner's recommendations hopefully will give clearer direction for landowners to engage with the Incentives opportunity

5 Financial Implications

There are no financial implications to report.

6 Conclusions

The delay caused by the OVERSEER “bug” is a temporary setback. The target of achieving 20 tonnes of in-lake nitrogen by the end of this calendar year, while more challenging, remains in place. Deals currently in the pipeline should get us close to meeting this target, but much will depend on the reassessed NDAs and NMPs.

In the meantime 8.5 tonnes of in-lake nitrogen has been secured in perpetuity and momentum is being maintained towards achieving the 2022 end of year target of 100 tonnes of in-lake nitrogen.

On current projections, if the 20 tonnes end of calendar year target is achieved, then this will require the Incentives Board to achieve an average of 16 tonnes per year for the next 5 calendar years.

Te Taru White
Incentives Programme Director

for General Manager, Integrated Catchments

28 August 2017

ROTORUA LAKES COUNCIL

Chairperson and Members
ROTORUA TE ARAWA LAKES STRATEGY GROUP

UPDATE REPORT FROM ROTORUA LAKES COUNCIL

Report prepared by: Jean-Paul Gaston, Group Manager Strategy and Partnerships

Report approved by: Geoff Williams, Chief Executive

1. PURPOSE

To provide a short update on Rotorua Lakes Council (RLC) activity that relates to lake water quality.

2. EXECUTIVE SUMMARY

RLC activity currently underway that impacts the Lakes Programme includes:

- *Wastewater treatment and stormwater projects*
- *Planning Policy*

This report provides a brief update against each of these areas.

3. RECOMMENDATIONS:

- 1. That the report 'Update Report from Rotorua Lakes Council' be received.**

4. WASTEWATER TREATMENT AND STORMWATER PROJECTS**Rotoma / Rotoiti Sewerage Scheme and Rotorua WWTP:**

- The resource consent application for the scheme has been concluded. The design of the WWTP and the Rotoma reticulation system is underway. Awaiting the resource consent result.
- Resource consent for Rotorua WWTP discharge is being prepared and extensive consultation with iwi is underway on the proposed land contact system.

Tarawera Sewerage Scheme:

- Central government (MfE) has confirmed the proposal to contribute to the Tarawera waste water scheme with a fixed level of funding of \$6.5 million over three years (2019/20-22).
- The MfE proposed funding is subject to securing the remaining estimated cost for the scheme from local and regional funding sources.

5. PLANNING POLICY AND STRATEGY

Bay of Plenty Regional Council - Plan Change 10: *Lake Rotorua Nutrient Management (PC10)*:

- RLC and partners (Te Arawa Lakes Trust, CNI Iwi Holdings Ltd, Te Tumu Paeroa, Timberlands Ltd, Hancock Forest Management) sent a letter to BOPRC requesting that PC10 in its current form be reconsidered.
- RLC is now working with these partners to consider an appeal of the PC10 decision and to protect provisions around the WWTP.

Vision 2030 – The Rotorua Way and the Rotorua Spatial Plan:

- RLC is looking to release the draft Spatial Plan on 24 August, for consultation using the special consultative procedure during September. The Spatial Plan is intended to be a high level blue print for development over the next 30 years. Lake water quality will be a key issue influencing the Spatial Plan.

6. CONCLUSION

Rotorua Lakes Council continues to work across multiple areas towards improved lake water quality as a partner in the Rotorua Te Arawa Lakes Programme.

Report To: Rotorua Te Arawa Lakes Strategy Group

Meeting Date: 08 September 2017

Report From: Chris Ingle, General Manager, Integrated Catchments

Lake Rotoehu Sewage Reticulation

Executive Summary

This report is to request support in principle for the reticulation of Lake Rotoehu sewage. The Rotoehu community is located close to the Rotomā and Rotoiti communities currently earmarked for sewage reticulation and it would seem appropriate to consider whether the Rotoehu community could also be linked into the community scheme. Although the communities of Rotoiti and Rotomā have funding available for the planned reticulation, Rotoehu does not.

Members of the local community are pushing for support to join into the sewage reticulation scheme. This seems a logical step as a sewage scheme is likely to provide a better environmental outcome than individual OSET systems.

This request is the first step in moving towards a sewage scheme for Rotoehu. Additional steps will be to confirm community support and find the necessary funding to support the implementation.

Recommendations

That the Rotorua Te Arawa Lakes Strategy Group under its delegated authority:

- 1 Receives the report, Lake Rotoehu Sewage Reticulation;**
- 2 Supports in principle the reticulation of sewage from the Lake Rotoehu community to the Rotomā – Eastern Rotoiti sewage scheme subject to appropriate funding being available;**
- 3 Confirms that the decision has a medium level of significance as determined by the Council's Significance and Engagement Policy. Council has identified and assessed different options and considered community views as part of making the decision, in proportion to the level of significance.**

1 Introduction

The Rotorua Lakes Programme is responsible for the development and implementation of each lake action plan. The development of action plans for each lake has been subject to close engagement with the local community during the development phase, to identify key sources of nutrients and explore actions that can be implemented to address these nutrient sources. The basis of each action plan is to identify catchment nutrient sources, evaluate the sustainable nutrient load to each lake and to identify viable actions that will help achieve the lake's sustainable nutrient load.

Generally, action plans for all lakes that have been developed have focussed on sewage reticulation as a key action. For a number of lakes, the reticulation of sewage has either contributed the total nitrogen and phosphorus reduction required for the catchment nutrient inputs to meet the sustainable load, or have provided a really significant part of the load reduction target and as required for the lake to be at its sustainable load. In these instances, the business case for sewage reticulation has been straightforward as a main contributor to the particular lake meeting its Water and Land Plan target TLI. The two most obvious examples of this are Lakes Ōkāreka and Rotomā where sewage reticulation will contribute 95%N, 25%P target and 192%N, 100%P targets respectively.

In contrast, for Lakes Rotoiti and Rotoehu, seepage from septic tank discharges is not the primary source of nutrient input to each of these lakes (1.6%N, 0.7%P and 1.1%N, 1.2%P respectively.) For Lake Rotoiti, sewage reticulation has been identified as a key action to help address attaining sustainable nutrient loads. However for Lake Rotoehu, it has not been identified as a key action. Lake Rotoehu's Action Plan was developed in 2007 using housing numbers based on 2003 information. A reassessment of both numbers of houses and occupancy has taken place since then and these indicate the levels of nitrogen and phosphorus loss from septic tanks could be between 40 and 250% higher than the Action Plan estimates.

The local Rotoehu community has pointed out this inconsistency and is requesting both councils to consider reticulation of sewage. As a result, a Rotoehu Sewerage Steering Committee has been set up to lead discussion on this within the community and to help navigate the community view on supporting a scheme.

In addition, and through the process of obtaining resource consent for the reticulation and treatment of sewage for Lake Rotomā and the southern and eastern parts of Lake Rotoiti, Rotorua Lakes Council has included the Lake Rotoehu community in the resource consent application. This does not guarantee that Lake Rotoehu sewage will be reticulated but it creates the necessary preconditions for that outcome.

The 2007 action plan for Lake Rotoehu is due for review. However, the process of review is yet to be established and could be linked in with the Bay of Plenty Regional Council development of the water quality standards under the NPS-FM process. As a result, any review that is reliant on the development of water quality standards under the implementation of the NPS-FM could create some delays in getting the action plan reviewed. Rather than travel this route, it is proposed that the views of the PSG and the RTALSG are sought in respect of sewage reticulation and that the community view is sought via the Rotoehu Sewerage Steering Group that is already in operation.

2 Sewage Treatment at Lake Rotoehu

There are 160 subdivided lots with 132 houses at Lake Rotoehu. Including the two communities of Kennedy and Otautu Bays, which have 94 lots with 77 houses. Houses in these two bays are not included in any funded sewage reticulation scheme, although, as already mentioned, they are included in the resource consent application being sought for Rotoiti and Rotomā sewage.

There are also houses at Morehu Loop Road, Manawahe Road, including the Rotoma School and Waitangi Soda Springs and on SH30 which will be reticulated with Lake Rotomā sewage

If sewage reticulation is not commissioned at Rotoehu, these communities will be required to upgrade their septic tanks to an advanced treatment system or obtain resource consent for some other system. This is a requirement of the Bay of Plenty Regional Council On-site Effluent Treatment Plan (OSET.) The approximate cost of upgrading is \$16,000 per property.

The use of the advanced systems has some potential and location specific problems:

- Not all sections at Lake Rotoehu are large enough to provide for the required disposal area.
- While the advanced systems typically address nitrogen, the treatment of P is not addressed to any particular standard with these systems.

Although the advanced treatment systems will improve effluent quality, local disposal of OSET treated waste water will still result in residual N and P reaching the lake.

Staff from both Bay of Plenty Regional Council and Rotorua Lakes Council consider that the reticulation of sewage for the Lake Rotoehu communities is the most logical and equitable option.

There are a number of points that support this:

- There is a level of nutrient loads coming from the community. Whilst calculations to estimate the amount of N and P coming from houses in the catchment are readily available these can be subject to a level of uncertainty in terms of actual occupancy and behaviours within this community. It is highly likely that the loads, as stated in the 2007 Action Plan are understated. As this area is a lake holiday area, it is more likely that there are very high occupancy rates at times that septic tanks and even advanced treatment systems are not capable of treating satisfactorily. Councils have no practical control on occupancy, and homes that have been holiday baches can easily be rented out as full time residences simply due to an event such as the Edgecumbe flooding where a local community has been displaced.
- It is uncertain what the future loads coming from sewage will be, if for example additional subdivision in the area takes place, without a sewage reticulation system, this will add additional nutrient load to the lake.
- Septic tanks and OSET systems can have a localised effect on water quality. This has been most recently experienced in Okawa Bay of Lake Rotoiti, where reticulation of this community rapidly improved the water quality of the bay. There is likely to be a similar effect for Ōtautū Bay where a number of houses are concentrated. Reticulating lakeside communities takes this source of N and P away from lake side disposal where it naturally and rapidly leaches to the lake causing eutrophication.
- Even upgrading to an advanced treatment system can have residual impacts. It is more likely that a reticulated sewage system will provide a better level of treatment, will cater for fluctuating loads and will be subject to technological advances as they emerge, than the OSET systems that each house holder would be responsible for.

- There is a raft of other benefits to sewage reticulation such as better public health without treatment and disposal on the house section, reducing bacteria discharge to the environment and potentially to the lake, management of the system lies with the council not individual ratepayers with no knowledge of the system, section area available for other activities.
- To date, sewage reticulation systems in the Rotorua Lakes Programme have attracted substantial subsidy support. OSET systems typically do not attract any support and must be funded completely by the rate payer.
- The availability of connection to a well-designed and established reticulation provides easier development of new homes and subdivisions.

Note that estimates of sewage impact on the receiving environment are subject to various assumptions, which creates some uncertainty. Frequently this leads to an underestimate of the impact of septic tanks and OSET systems as it is very challenging to gather definitive data from these applications.

3 Analysis of Options

The only other feasible options are the application of the advanced treatment system or obtain resource consent for some other system. The implications of this have been presented at section 2 above.

4 Community Views

Some sections of the community are requesting council support for sewage reticulation. Additional consultation will be undertaken to confirm this support across the community as the project progresses.

4.1 Long Term Plan Alignment

This work is not planned within the long term plan. This report is not requesting funding it is requesting support in principle to progress on sewage investigation for this community, including getting a clear indication from the community that the majority support it.

Current Budget Implications

This work is outside the current budget for the Sustainable Water Activity in the Long Term Plan 2015/25.

Andy Bruere
Lakes Operations Manager

for General Manager, Integrated Catchments

1 September 2017

