

The Chairman and Members

# 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 **CR2, Rotorua District Council Civic Administration Building, 1061 Haupapa Street, Rotorua** on:

**EMBARGOED**

Until 2 working days before meeting on:

**Friday, 23 July 2010**

**commencing at 10.00 a.m.**

Bill Bayfield  
Chief Executive  
Environment Bay of Plenty  
Joint Committee Administering Authority

16 July 2010





# **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 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.

## **Functions**

The Group will initially have the following functions:

- (a) 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.
- (b) The identification of significant existing and emerging issues affecting the Rotorua Lakes.
- (c) The preparation, approval, monitoring, evaluation and review of agreements, policies and strategies to achieve integrated outcomes for the Rotorua Lakes.
- (d) The identification, monitoring and evaluation of necessary actions by the organisations and other relevant organisations.
- (e) The receiving of reports on activities being undertaken by the organisations and other relevant organisations.
- (f) Involvement during the preparation of statutory plans in relation to significant issues. Such plans include but are not limited to iwi and hapu 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.



## Committee Membership

<b>Chairman:</b>	Mayor K Winters (Mayor, Rotorua District Council)
<b>Deputy Chairman:</b>	T Curtis (Chairman, Te Arawa Lakes Trust)
<b>Members:</b>	Chairman J Cronin and Councillor N Oppatt (Bay of Plenty Regional Council), Deputy Chairman W Emery (Te Arawa Lakes Trust), Councillor G Searancke (Rotorua District Council)
<b>Appointees:</b>	M Pinckard (Ministry for the Environment)
<b>Secretary:</b>	S Cubbon

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

## Agenda

- 1 **Apologies**
- 2 **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.
- 3 **Reports**
  - 3.1 **Presentation and Annual Plan Submission from Lakes Water Quality Society** **9**

(Don Atkinson, Lakes Water Quality Society will present)
  - 3.2 **Analysis of the Land Use Futures Board Position Paper** **11**

(Anne Nicholas from Sigma Consulting will present)
  - 3.3 **Land Use Futures Board Advice to Rotorua Te Arawa Lakes Strategy Group on Maori Land Utilisation** **13**

Advice to Rotorua Te Arawa Lakes Strategy Group on Maori Land Utilisation  
(Land Use Futures Board Chairman, Bill Cleghorn will present)

3.4	<b>Aeration investigation work to treat nutrient releases from lake sediments</b>	<b>15</b>
3.5	<b>Vehicles for Land Use Change</b>	<b>19</b>
	(Deryck Shaw, APR Consultants, will present)	
3.6	<b>Group Manager's Report</b>	<b>21</b>
4	<b>Consideration of General Business</b>	

## Reports



**File Reference:** 2.00034

**Report To:** Rotorua Te Arawa Lakes Strategy Group

**Meeting Date:** 23 July 2010

**Report From:** Nigel Wharton, Director Environmental Services (RDC)

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## **Presentation and Annual Plan Submission from Lakes Water Quality Society**

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### **Executive Summary**

On 19 May 2010 at its Annual Plan hearings the Rotorua District Council received a submission and heard a presentation on lake water quality matters from the Lakes Water Quality Society.

The District Council resolved that the submission and presentation be referred for the information and consideration of the Rotorua Te Arawa Lakes Strategy Group. A copy of the submission and the presentation is attached.

Don Atkinson from Lakes Water Quality Society will be in attendance to deliver a presentation to the Rotorua Te Arawa Lakes Strategy Group.

### **1 Recommendations**

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

- 1 Receives the report, Presentation and Annual Plan Submission from Lakes Water Quality Society .**

Nigel Wharton  
**Director Environmental Services (RDC)**

**14 July 2010**



# Appendix



## SUBMISSION NO. 44

## SUBMISSION NO: 44

Name: Ann Green  
Secretary

Daytime phone: 3624204  
Email:

Organisation (if any): Lakes Water Quality Society

Postal Address: 53 Te Akau Road, R D 4, Rotorua 3074

I WISH TO speak to the mayor and councillors regarding my submission.

### **Introduction:**

Lakes Water Quality Society Inc. has actively participated in the Submission process over a number of years. It has 406 members and has been active for some 40 years. The Society has run six symposiums and gained national recognition.

### **Recognition of the Importance of our District Lakes:**

- We are pleased Council recognises the importance of restoring our lakes.
- We commend Council for the sewerage schemes already constructed or in the process of construction.

### **Land Use Change:**

- The Draft Regional Policy Statement and most of your own policy statements all require the restoration of the lakes and recognise the requirements of land use change. We are surprised that given the importance of land use change around all our lakes, and in particular Lakes Rotorua and Okareka, the Annual Plan has not given due emphasis to this very important strategic initiative and how it will be achieved. The significance of this land use change from an environmental, social and economic perspective can not be understated.
- Our Society believes that Lake Rotorua can be restored while most farming continues and the economy of the District significantly improves. Knowledge to achieve this is already available. Wise leadership is required from RDC.
- We assume appropriate funding is in place under Planning and Implementation Policy. We seek assurance that adequate funding is available in the 2010/2011 Year.
- A presentation dealing with this issue is attached.

### **Consented Farming Activity:**

- The Draft RPS gives particular emphasis to achieving nutrient discharges from land so that the target lake TLIs are achieved. Our analysis is that most farming can be retained providing nutrient discharges are reduced to what is already being easily achieved without inducement on a number of Waikato farms.

- Under the District Scheme currently under review, Council has the authority to permit activities or require them to be controlled or consented. In the Rotorua Catchment farming should be a consented activity to ensure “best farming practices” are adopted.

**Lake Front Development:**

- The Draft Annual Plan indicates that the Council is progressing with Stage 1 of the proposed Rotorua Lakeside redevelopment. We commend Council for this initiative but continue to emphasise to Council the risk associated with deteriorating water quality and associated blue green algae blooms.
- The most rapid improvement to lake water quality will be achieved by in-stream and lake treatments. While these responsibilities, in the main, rest with EBOP, RDC needs to proactively pursue these policies.
- The Council, in association with its strategic partners needs to improve the quality of the lakes and fresh water. In so doing, Council will minimise the risk to business and assist in ensuring the success of the Lake Front development!

**Conclusion:**

- Many of the keys for the restoration of the lakes are your responsibilities, these are -
  1. Continue to implement all planned sewerage schemes around all lake settlements. The Lake Tarawera sewerage scheme should be commenced and completed within the next five years
  2. Within the Lake Rotorua Caldera allow the creation of rural residential properties, these subdivisions enabled by a commitment to reduce nutrients discharged from the land
  3. Require all farming to be a consented activity within the lake catchments, utilising best farming practices to minimise nutrient leaching and runoff
  4. Ensure that Lake Action Plans are completed and adopted by 2010/11 for all twelve lakes and are dynamic working documents which the community can use as its benchmark and guidance for Council action
  5. Encourage and promote the Rotorua Te Arawa Lakes District as a unique pristine environment to live and recreate in

We again acknowledge the work and achievements of RDC in their actions to date to improve the Rotorua Te Arawa Lakes' water quality. Rotorua is undoubtedly the great challenge to restore and we encourage RDC to take the hard decisions and leadership necessary to “clean” it up.

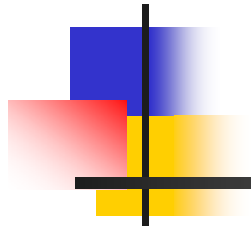
We wish to be heard in support of our submission.

John Green  
**CHAIRMAN**

# Appendix



# Lake Rotorua Catchment - Forward to a Better Future



Lakes **WATER**  
**QUALITY** Society

# Lake Rotorua

## Our Challenge



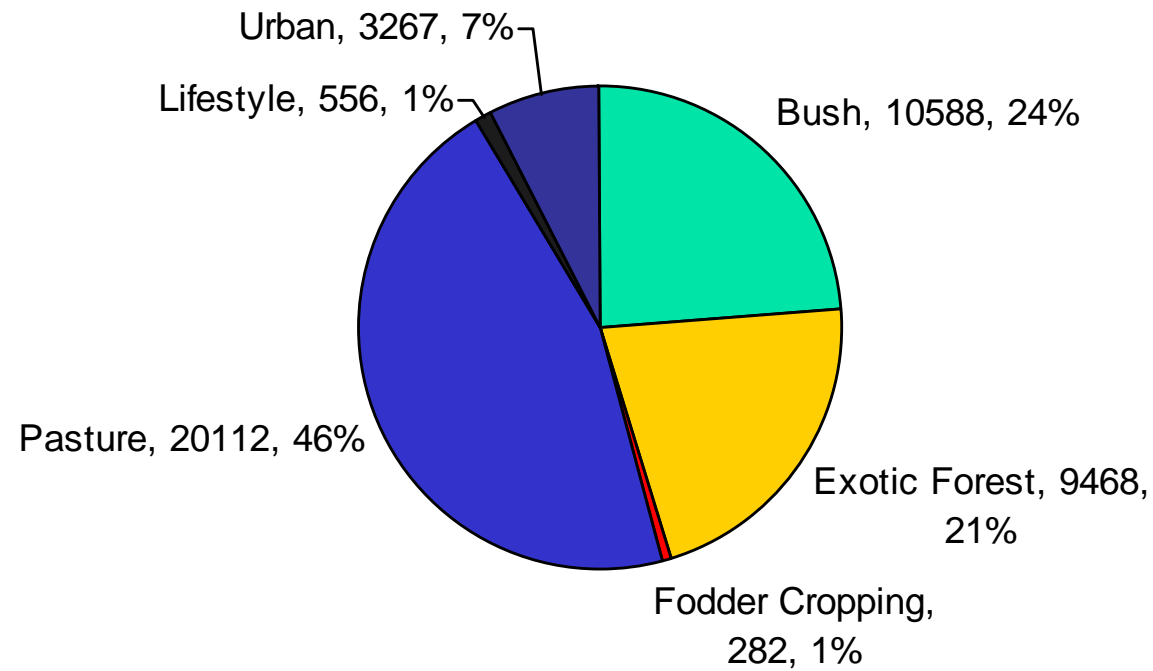
# Overview of Challenge -

Task is large but the rewards are huge

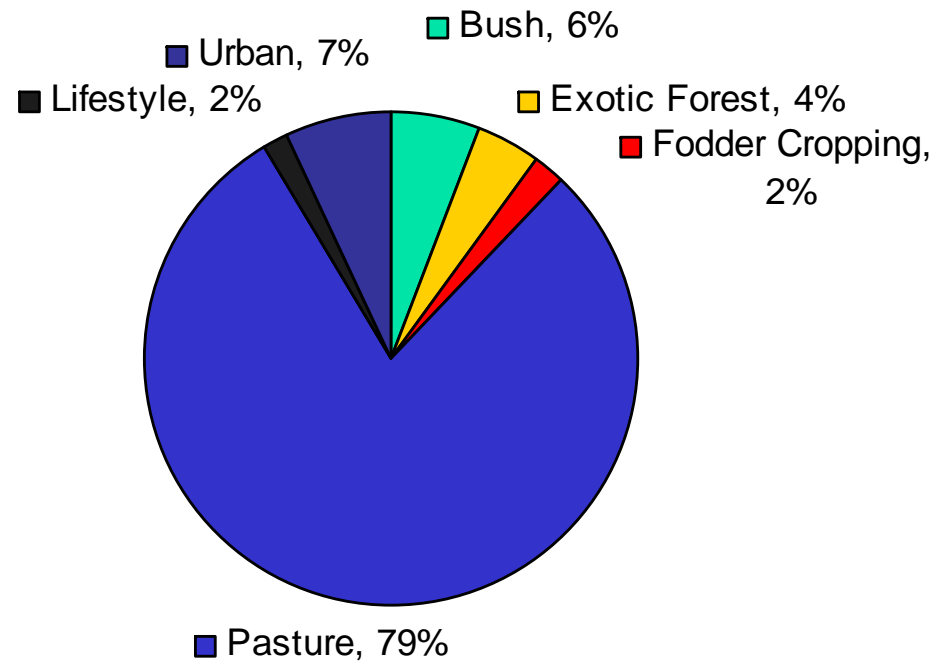
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- Achieve the required reductions in nutrients exports from the catchment by 2019
- A better lake with improved water quality
- A wealthy community and a greater population
- A more diverse catchment with 30% retired from farming
- Sustainable dairy and sheep & beef farming
- Farming carbon

# Land Use in Catchment - Hectares



# Nutrient Losses from the Land

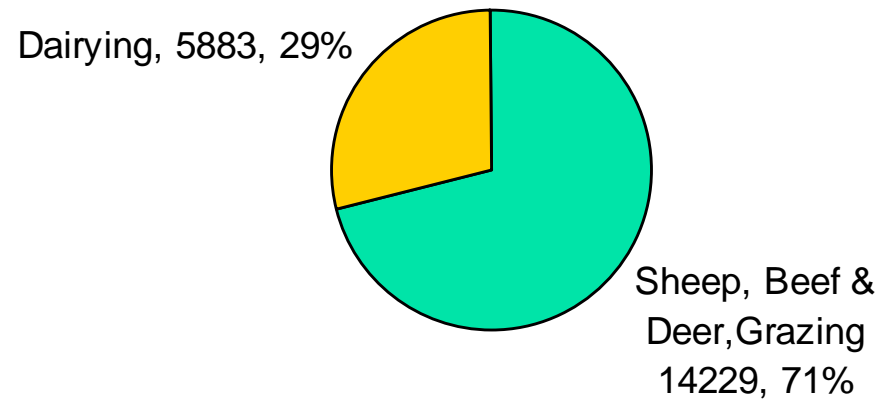


■ Bush ■ Exotic Forest ■ Fodder Cropping ■ Pasture ■ Lifestyle ■ Urban



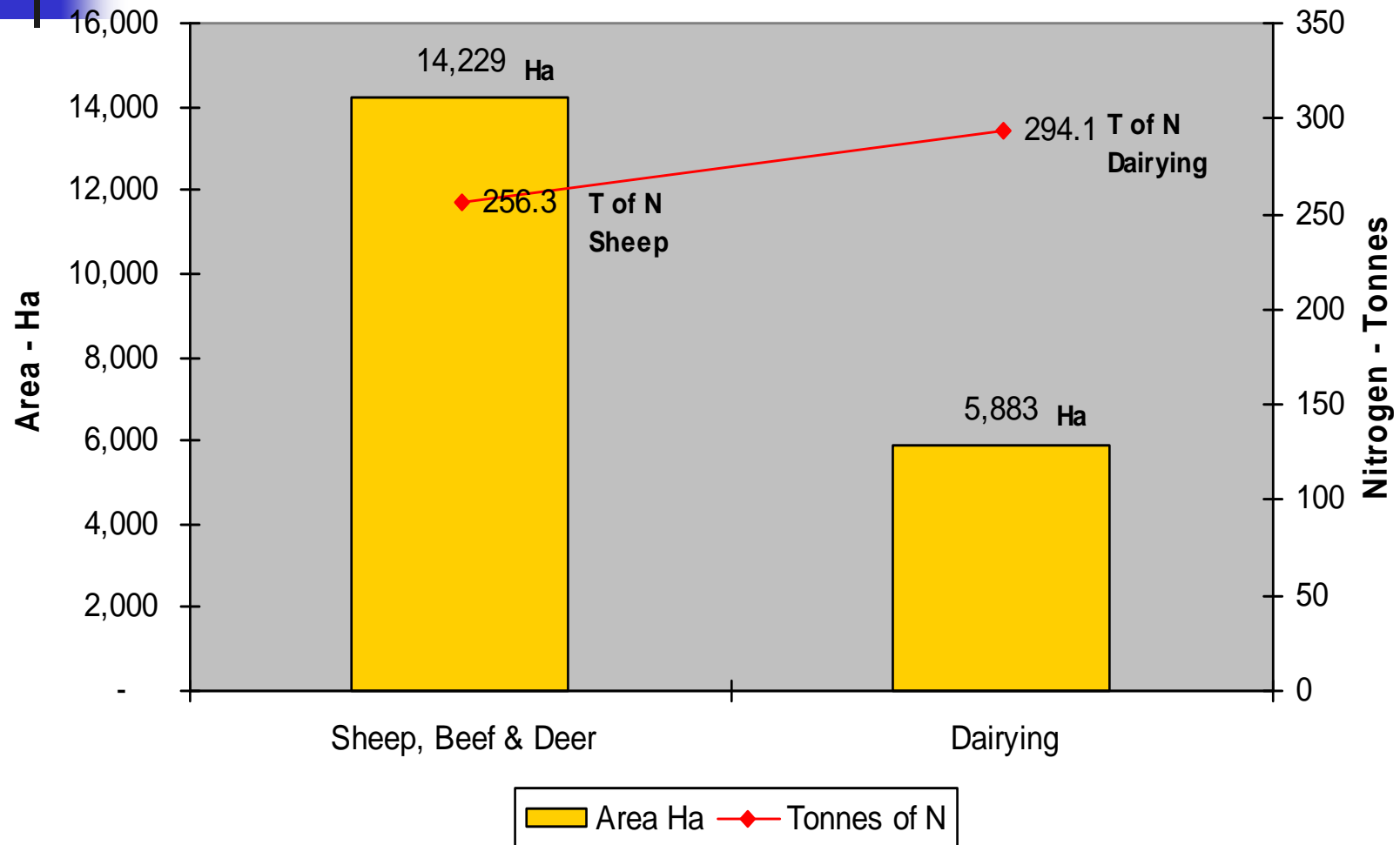
# Farming Area in Hectares

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■ Sheep, Beef & Deer ■ Dairying

# Farming - Area and Nutrient Losses





# Catchment Nutrient Targets t/N/y

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	Current exports	746
<i>Less</i>	Sustainable load	435
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	Required target	311
<i>Less</i>	Non-farming targets	80
		-----
	Catchment Nitrogen Reduction Target	231
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This reduction equates to 41% of the nutrients from farming  
(Taupo 20%)

(All information derived from the Lakes Rotorua and Rotoiti Action Plan)



# Non-Farming Reductions - 80t N reduction

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- Current
  - Sewerage reticulation and upgrade
  - Stormwater Treatment
  - Flocculation of Phosphorus
  - Diversion of Tikitere
- Options
  - Sediment Capping
  - Aeration
  - Attenuation through weed beds
  - Harvesting of Lake weed
  - Diversion of Hamurana Stream



# Delaying is Costly

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- The lake continues to deteriorate
  - Impacts on Okere Arm and the Kaituna
  - Negative Impacts on
    - Tourism
    - Residential property
    - Wealth of District
- Investment in Changing of Land Use delayed
  - Farming needs certainty
  - Opportunities for rural subdivision restricted
  - Funding initiatives to stimulate change not in place



# By itself land use change is too expensive

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- Removal of Dairying
  - Even if all removed insufficient to meet target
  - Significant reduction in GDP
  - Unlikely to be politically acceptable
  - Cost Estimated at \$136m
- Large scale planting of Forestry
  - Would require the equivalent planting of all farm land excluding dairying land
  - Cost Estimated at \$142m



# The Bucket

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- Only achieved by a combination of choices
  - Optimum outcome
    - Best farm practices – 70% of land
      - Dairying 20% Sheep, beef, deer 10%= 59t N
    - Assisted Farming Practices
      - Dairying and establishment forestry = 63t N
    - Retired farm land – 30% of land
      - Subdivisional Rights granted = 109t N
- Total 231t N



# Best Farming Practices

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- **Required Best Farming Practices**
  - Moderate stocking levels
  - No wintering of dairy stock in the Catchment unless in association with a herd home
  - The use of stand off pads
  - Large effluent storage capacity
  - Application of fertiliser in limited amounts and when not vulnerable to leaching
  - Use of nitrogen inhibitors.
  
- **Assisted nutrient reductions**
  - Establishment of herd homes
  - Building of wetlands
  - Providing filters within streams
  - Other??



# Forestry and Bio Mass

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- Emission Trading Scheme passed into law this year.
- Currently the largest driver for change in Taupo
- Taupo trust currently purchasing N at \$400/kg , capital cost for N in perpetuity
- Secured against title by multiple agreements at varying levels
- Carbon is providing farmers an annual return of
  - \$20 to \$25/t @ 30t/ha = \$600 – 750/ha
- Strong economic case for change
- Well suited to Maori Land
- Will need to be facilitated to maximise outcome



# Rural Subdivision for N reduction

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- To achieve the desired outcome this is the most significant contributor in the kit
- **30% of all pastoral land needs changing**
- Retired land defined as all land contributing < 8kg/ha N
- Low intensity organic type lifestyle farming would be permitted
- On retirement of 180kg of N one residential property can be subdivided as of right
- No public financial contribution to be payable
  - (Continued)



## (Continued)

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- Consideration to be given to not requiring any payment to RDC reserve or infrastructure
- 30% of catchment to be retired to achieve objective
- Initially land within the Rotorua Caldera should be targeted as this will give the most rapid response
- To meet target need
  - 603 lots @180kg / lot = 108.5 t N removed
- Over 10 years this would be 60 houses per year



# Cost of the Bucket

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- Best farming practices - Nil, requirement of farming, most are profitable.
- Retirement of land through subdivision – Nil, community accept a change in landscape values and RDC don't collect any development levies
- Assisted farming practices and forestry under ETS
  - (Based on Taupo current cost)

63t at \$400/kg = \$25.2m



# The District Economy

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- 70% of all farming retained
- 30% lost from all classes

Dairying 1765ha @ Gross income of \$7,000/ha = \$12.354m  
Other farming 4269ha @ \$2,500/ha = \$ 10.672m

**Lost from Economy - Total \$23.026m**

- Offset by Change in Land Use

603 Residential Properties @70,000/ household= \$42.210m  
Cost of developing say 60 residential properties / year  
@500,000 / property = \$30.000m

Forestry under ETS – 2250ha@ \$600/ha = \$1.350m

**Gained by the Economy - Total \$73.560m**

- Plus any increase in tourism from improving water
- All numbers need to have appropriate multipliers applied



# What LWQS asks for

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- In the Review of the District Scheme allow subdivision of rural property as a conditional use, a requirement being the reduction in Nitrogen leached of say 180kg per lot
- Subdivision and nutrient reduction be allowed any where within the Rotorua Caldera
- Make farming a consented activity requiring the adoption of Best Farming Practices
- Encourage and promote the Rotorua Te Arawa Lakes District as a unique pristine environment to live and recreate in



# Conclusions

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- Lake Rotorua can be restored while:
  - Most dairy farming continues
  - Economy of District is improved
- Knowledge to achieve this is already available
- Wise leadership required from RDC and EBOP and strong Counsel by Te Arawa

**File Reference:** 2.00034  
4.01128  
**Significance of Decision:** Receives Only - No Decisions



**Report To:** Rotorua Te Arawa Lakes Strategy Group  
**Meeting Date:** 23 July 2010  
**Report From:** Warwick Murray, Group Manager Land Management

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## **Analysis of the Land Use Future Board Postion Paper**

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### **Executive Summary**

The purpose of this report is to provide analysis of the Land Use Futures Board (LUFB) papers as requested by the Rotorua Te Arawa Lakes Strategy Group in March 2010. The attached report has been prepared in consultation with the partners' staff and presents their collective comments.

Key Recommendations from the LUFB report relate to the achievement of future reductions being reliant on public funding, the need for changes to the regulatory framework (especially Rule 11), and the development of an extension service.

Staff have provided comment in the report below on the LUFBs recommendations and have suggested areas of future work for the Board.

### **1 Recommendations**

**That the Comittee under its delegated authority:**

- 1 Receives the report, Analysis of the Land Use Future Board Postion Paper.**

### **2 Purpose**

The purpose of this report is to provide analysis of the Land Use Futures Board (LUFB) papers as requested by the Rotorua Te Arawa Lakes Strategy Group in March 2010. The attached report has been prepared in consultation with the partners' staff and presents their collective comments.

### **3 Key Recommendations**

Staff note that the next Regional Policy Statement will give clearer direction for Rule 11 and other regulatory mechanisms. With the review of the Rotorua District Plan in the next six months also, these RMA documents will be vital for landowners, in enabling and guiding conscious decisions about land use. It is also important that the Te Arawa Lakes Settlement Act is reflected in documents and actions by the LUFB, the Strategy Group and the partners in relation to the Lakes.

Staff consider that it is not appropriate to rely totally on public funding to meet future targets. Staff note that constraints and timeframes apply to public funding under the LGA and that there may be ways to apply existing range of public and private funds

effectively to new initiatives, where funding assistance is required. Some outcomes of new technology may be applied collectively by industry and individual land owners, through best management practices (BMPs) and other mechanisms.

The development of an extension service is strongly promoted by LUFB but staff require more detail to be understand the intended form and purpose of the suggested service. There is a need to avoid duplication with existing services and make best use of resources.

The partners' staff note the high level of value which the LUFB provides as a sounding board and potential source of pragmatic advice. They note that the policy set out in the papers is not inconsistent with policy direction of the partners and to an extent provides constructive recommendations.

## **4 Future Action**

The partners' staff consider that the LUFB could usefully provide visionary and preferred options for land how land use change is to be achieved, based on pragmatic measures to be included in a land use change toolkit.

Staff consider that the next step for the Board should be to prepare a paper which sets out clearly the support and assistance that will help landowners and managers achieve the nutrient reduction targets, and timelines for these measures.

The report attached sets out the analysis of the papers in detail.

## **5 Financial Implications**

### **Current Budget**

There are no implications for the Environment Bay of Plenty Annual Plan arising from this report.

### **Future Implications**

There are no future implications from this report.

### **Ten Year / Annual Plan Implications**

There are no implications for Environment Bay of Plenty's Ten Year Plan arising from this report.

Anna Grayling  
**Rotorua Lakes Project Manager**

**for Group Manager Land Management**

**14 July 2010**

# Appendix



# ROTORUA TE ARAWA LAKES STRATEGY GROUP

## ANALYSIS OF THE LAND USE FUTURES BOARD STRATEGY AND POSITION PAPER

### 1. INTRODUCTION

- 1.1 This report has been prepared in response to the request by the Strategy Group in March 2010:

*“That partners’ staff cooperate and prepare an analysis of the papers from the Land Use Futures Board for subsequent reporting to the Strategy Group”.*

- 1.2 The Land Use Futures Board (“LUFB”) (previously known as the Sustainable Land Use Implementation Board) was established in 2007 as an advisory body to the Rotorua Te Arawa Lakes Strategy Group (“RTALSG”). The Board’s primary purpose is to:

*“give leadership to and advise on implementing sustainable land use management and change in the Rotorua Lakes Catchments that will achieve the land based component of nutrient reduction targets defined through the various action plans”.*

The Board reports to the Rotorua Te Arawa Lakes Strategy Group (“RTALSG”), consisting of Te Arawa Lakes Trust, Rotorua District Council and Bay of Plenty Regional Council. It also gives *“updates on target achievement to the appropriate action plan working parties.”*

- 1.3 In November and December 2009, LUFB produced two papers, as follows:

- A Strategy was prepared in November 2009 and is “A Plan for Achieving its Purpose”.
- A Position Paper was prepared in December 2009 and relates to “Achieving nutrient reductions from land use in the Rotorua catchment”. It outlines the current position of the Board on land use practices and mitigation options available to achieve the nutrient reduction target from land use.

- 1.4 This report provides an analysis of these two papers, with a primary focus on the Position Paper. Brief comment is also made on the Strategy as the Terms of Reference are separately under review.

- 1.5 A preliminary review of the papers was undertaken in June 2010 and circulated to the three partners in the RTALSG. A workshop was then held with staff<sup>1</sup> from the three partners. This paper presents the outcome of the workshop and subsequent feedback.

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<sup>1</sup> Te Arawa Lakes Trust was represented by Hera Smith, Executive Officer; Rotorua District Council by Liam Dagg, Team Leader Policy and Anabella Vidal Environmental Planner/ State of Environment Monitor; Bay of Plenty regional Council by Martin Butler, Regional Planner and Anna Grayling Rotorua Lakes Project Manager; all with input from other staff in the organisations.

## 2. RTALSG PARTNERS' FEEDBACK

- 2.1 As a general comment, staff highly value LUFB as a sounding board and potential source of pragmatic advice. They note that the policy set out in the papers is not inconsistent with policy direction of the partners and to this extent provides constructive recommendations. However, the papers lack specific details of practical measures that can be put into effect. Therefore, a report focussed on specific measures is identified as the next step required.
- 2.2 The partners' staff consider that LUFB needs to provide visionary and preferred options for land use change, based on pragmatic measures which can be included in a land use change "toolkit" (where partners' staff seek direction) rather than the current focus on a higher "policy" level (where partners staff do have more expertise available).
- 2.3 It would be helpful for LUFB to identify what is not working at present and what could be achieved through to 2019 under different land use scenarios using current technology and research. From there, the following ten years could be discussed more specifically.
- 2.4 The key recommendations in the papers relate to the achievement of future reductions being reliant on public funding, the need for changes to the regulatory framework (especially Rule 11), and the development of an extension service.
- 2.5 Staff consider that it is not appropriate to rely totally on public funding to meet future targets (future technology). Staff note that constraints and timeframes apply to public funding under the LGA and that there may be ways to apply existing range of public and private funds effectively to new initiatives, where funding assistance is required. Some outcomes of new technology may be applied collectively by industry and individual land owners, through best management practises (BMPs) and other mechanisms, and not require public funding.
- 2.6 The development of an extension service is strongly promoted by LUFB but staff require more detail to be able to understand the intended form and purpose of the suggested extension service. It is important to avoid duplication with existing services and make best use of resources.
- 2.7 The next Regional Policy Statement will give clearer direction for Rule 11 and other regulatory mechanisms. With the review of the Rotorua District Plan in the next six months also, these RMA documents will be vital for landowners, in enabling and guiding conscious decisions about land use. It is important that the Te Arawa Lakes Settlement Act is given effect to and reflected in LUFB, the Strategy Group and the partners in documents and actions relating to the Lakes.
- 2.8 Staff consider that the next step should be a paper setting out clearly the BMPs and assistance that will help landowners and managers achieve the nutrient reduction targets. Timeframes for different measures should be considered. This would inform the development of policy and plan provisions. At present, these have not been set out in sufficient detail.
- 2.9 Once a range of specific measures has been developed, staff see a vital role for LUFB as champions for the regional and district council tool kits.

### 3. BACKGROUND

3.1 In reviewing the papers, the Terms of Reference for LUFB have been considered. These require the Board to consider and advise on a list of seven matters, as follows:

- *“The development and regular review of an implementation plan to achieve reduced nutrient loss from land use activity. The initial plan to be prepared by March 2008 outlining mitigation options and timing.*
- *Relevant nutrient mitigation research, both current work and potential i.e. gap analysis.*
- *Evaluate and recommend land management options, including incentives that may assist in achieving land use management change.*
- *Actual or potential impediments to achieving nutrient reduction targets, including planning regimes implemented by Regional and District Council.*
- *Advise on the development of a Communication Plan to communicate with and receive feedback from the range of landowners. Environment Bay of Plenty (“EBOP”) and Rotorua District Council (“RDC”) will support and integrate the Plan into its overall programme for the Protection and Restoration of the Rotorua Lakes.*
- *Advise on the development of regulations and Statutory Planning Policy of EBOP and RDC including possible changes to these regimes.*
- *Any other matters that the board considers necessary to achieve nutrient reduction targets in a sustainable manner.”*

3.2 LUFB is made up of representatives of primary industries, landowners and other stakeholders, and this is consistent with the primary purpose of the Board, which gives a strong emphasis on *implementing* sustainable land use management and change in the Rotorua Lakes Catchments. The terms of reference widen the focus to include not only an implementation plan and land management options, but also consideration of relevant research, impediments to achieving nutrient reduction targets (including planning regimes), communication plan development advice on regulations and planning policy and “any other matters”.

3.3 Given the current review of the Board’s Terms of Reference (TOR) it is not within the brief of this document to comment on the TOR, except to note that the TOR are very broad and the strength of LUFB is seen as the ability to provide pragmatic “hands on” advice on effective policies, incentives, and mechanisms. Staff consider this practical advice and feedback to be of high value.

### 4. STRATEGY

4.1 The Strategy has been developed to assist LUFB achieve its purpose. It sets out:

- The primary purpose under the terms of reference
- Goals
- Guiding Principles
- Challenges for the Board
- Planning Actions, with sub-headings of Challenges, Responses and Success factors.

- 4.2 Given the review of the TOR, the staff reviewers have considered the Strategy only briefly. In general, the Strategy focuses on policy and internal issues rather than developing and implementing actions and pragmatic measures and providing leadership. Staff acknowledge the work to date and continue to support the intent and purpose of LUFB. They place a high value on LUFB and view it as a vital source of practical advice on specific measures that will work from the land manager's viewpoint and which assist partners in developing policy and plan provisions.
- 4.3 Staff note that the wording tends to be rather inwardly focussed (what the Board wants to be) and less about achieving its purpose. Most of the actions under the Goals need to be explained further and refined into specifics e.g. what are the most effective forums for advocacy, what are the gaps in research, how will gaps in practices and options be assessed, how can the research that we have to date best assist and guide us in developing plans and policies?

## **5. POSITION PAPER: ACHIEVING NUTRIENT REDUCTIONS FROM LAND USE IN THE ROTORUA CATCHMENT DECEMBER 2009 (FINAL)**

- 5.1 This Paper identifies five purposes:
- To outline the current position of LUFB on land use practices and mitigation options to achieve the 2029 nutrient reduction target
  - To provide guidance and advice to RTALSG on the evolving policy framework
  - To provide guidance and advice on current mitigation options available.
  - To identify areas for further investigation and research.
  - To highlight outstanding issues to be addressed.
- 5.2 In general, the Paper does summarise its position in relation to the policy framework and interventions framework, but it provides limited positive guidance and direction on land use practices and mitigation options, or clearly identifies areas for further research. Most of the focus is too high level and broad to provide specific assistance to partner staff in developing and reviewing policy and plan provisions.
- 5.3 The following sections review each section in the Position Paper.

### **Section 2 - Summary of Position**

Section 2 provides a brief summary of the LUFB position on actions required to achieve land use reduction targets defined in the LRRAP. These are set out four bullet points under Policy Framework and seven bullet points under Interventions Framework. Most of these points are recommendations set out in the body of the Paper.

Section 2 in Future LUFB Actions then refers to a series of actions to focus on for the next 6 -12 months (set out in Section 6: LUFB Strategy for further refinement of options). These points are broadly based and again staff identify a need for detailed consideration of mechanisms rather than policy.

### Section 3 - Nutrient Targets by 2029

Section 3 highlights three points:

1. *Targeted reductions based on applying future technology are uncertain and carry a high level of associated risk. Landowners do not want to be the carriers of this uncertainty and risk in the future*
2. *Future improvements in science and understanding of the lake may change the emphasis of these targets. Any changes should be equitably applied*
3. *The target of 84T N/yr reduction to be achieved through future technology is vague and needs more clarity around how it will be achieved*

The focus of the document thus appears to be on the challenge of meeting the 2019 to 2029 period rather than the next 10 years, with an assumption that future technology is not likely to be effective and that land owners (and particularly farm managers) will have to pay the cost of meeting the targets. This is where a clear evaluation of the “intervention options” would assist.

### Section 4 - Policy Framework

Section 4 considers current policy processes and issues under five headings.

#### Section 4.1 - Evaluation of Policy and Intervention Options

LUFB Recommendation	Staff Response
<p><i>That other agencies involved in the lake management utilise these or similar criteria<sup>2</sup> in their decision making.</i></p>	<ul style="list-style-type: none"> <li>▪ Sixteen criteria are set out for guiding and evaluating policy and intervention options. Some are consistent with RMA or LGA and are already addressed through statutory and non-statutory processes and thus in policy documents.</li> <li>▪ However, some are not appropriate criteria for evaluating statutory provisions for the following reasons.             <ul style="list-style-type: none"> <li>- They are broad in their scope and the intent is not always clear: e.g. the timescale intended (9, 13); intent (14); the</li> </ul> </li> </ul>

<sup>2</sup> LUFB has developed 16 key criteria:

1. *Property and ownership rights are respected.*
2. *Polluter should pay, but recognize current versus historic contributions*
3. *All options should have a benefit cost analysis*
4. *Based on current and proven science*
5. *Social, cultural, economic and environmental aspects are to be taken into account and it improves the aggregate bottom line*
6. *Enhances economic growth and opportunity*
7. *Land use flexibility is optimized*
8. *It makes a measurable contribution to improving lake health*
9. *Longevity and resilience of solution*
10. *Solution of policy is be equitable across all landowners*
11. *Policies or actions are acceptable to the majority of affected stakeholders*
12. *Supported/ promoted by sectors/ industry (i.e. EMS, benchmarks, BMP)*
13. *Timeframe is rational and effective*
14. *Provides incentive for positive outcome*
15. *Encourages innovation*
16. *Enhances collaborative project/ ideas*

LUFB Recommendation	Staff Response
	<p>intended level for enhanced economic growth and opportunity, and for whom (6)</p> <ul style="list-style-type: none"> <li>- There are potential conflicts in the criteria e.g. 2 (the polluter pays) in relation to 10 (equitable across all landowners); 1 (property rights to be respected) in relation to 11 (acceptable to the majority of stakeholders) and 12 (supported or promoted by sectors/industry)</li> <li>- 4 refers to proven and current science, but innovation is sought by 15. (and the need to be able to respond to new science)</li> </ul> <ul style="list-style-type: none"> <li>▪ As no weighting is assigned or guidance given for applying the criteria, this is problematic for their application.</li> <li>▪ Some refinement and weighting of the criteria would make them a useful tool for understanding the values assigned by LUFB to different policy and intervention options.</li> </ul>

### Section 4.2 - Policy Options

LUFB identifies three mainly policy options for managing nutrient loss within a lake catchment:

- Cap - Allocate
- Cap – Allocate - Reduce
- Reduce – Allocate - Cap

LUFB Recommendation	Staff Response
<p>LUFB makes no recommendation. However, elsewhere the Cap - Allocate – Reduce option is discussed (4.3, p6). LUFB notes the incentive provided by nutrient trading but the challenge of making this work where reduction is voluntary.</p>	<ul style="list-style-type: none"> <li>▪ Staff note that Rule 11 provides a cap and allocate mechanism. Reductions were sought through non-regulatory mechanisms. Staff expected that LUFB would play the main role in developing and promoting such mechanisms but this expectation has not yet been met.</li> <li>▪ Rule 11 currently provides for nutrient trading but this has not been used to date by landowners/ land managers. Staff would like feedback from LUFB as to why this has not been accessed.</li> <li>▪ RDC staff advise that the District Plan is able support regional policy through the resource consent process, e.g. requiring consent for certain land use activities, or where land use activities result in increased nutrients entering</li> </ul>

	water bodies, or where nutrient discharge is higher than a set threshold.
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### Section 4.3 - Regional Water and Land Plan

LUFB Recommendations	Staff Response
<p><i>That Rule 11 needs to be replaced with a new regulatory framework within the Land and Water Plan that:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Provides more certainty to landowners (30+ years to reflect the investment certainty required) by being clear about proposed interventions and the requirements that will be placed on land owners</i></li> <li>▪ <i>Is flexible and allows for innovation.</i></li> <li>▪ <i>Provides for “equity equalisation” (movement from “grandparent” allocation to “land capability”) over time and optimises the land use potential in catchments and the community.</i></li> <li>▪ <i>Re-evaluates the allocation of nutrient discharge rights that have been created by Rule 11, and establishes an allocation outcome that is consistent with the principles<sup>3</sup> described above</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ BOPRC reviewed Rule 11 and decided to retain it. The next RPS will provide direction for any changes to the Water and Land Plan.</li> <li>▪ More detail is required from LUFB to understand what is intended in the new regulatory framework to be considered and the outcomes sought by LUFB to be understood.</li> <li>▪ The need for certainty over a 30 year period is noted, but different timeframes may be imposed by RMA and LGA processes. For example there is a ten year strategic planning timeframe, whereas RDC’s structure planning has a 50 year horizon, and the LRRAP sets targets for 2029 and 2250.</li> <li>▪ In a wider context than the RWLP, both the RPS and RDP are due within 6 months and will enable landowners to consciously review land uses with more certainty.</li> </ul>
<p><i>That the development of this new regulatory framework is advanced with urgency, as it is seen as the catalyst to advancing the whole lake management issue.</i></p>	<ul style="list-style-type: none"> <li>▪ The recommendation is for urgent action. Rather than rely on a mix of regulatory and non-regulatory mechanisms, LUFB appears to consider that regulatory mechanisms are the only effective way to achieve reductions.</li> <li>▪ Given the lack of details and the breadth of the criteria discussed under Section 4.1 above, more guidance and direction is needed.</li> </ul>

<sup>3</sup> The principles are not specified but are presumed to refer to “important principles” being:

- Equity should be achieved across land uses
- Certainty on the regulatory framework is provided to support decision making
- Gains already made are recognized
- Promote a system, that in the longer term recognises land capability (ecological carrying capacity), but recognizes a starting point may be close to a “grandparent” approach.

### Section 4.4 - Regional Policy Statement (RPS)

LUFB Recommendations	Staff Response
<p>No specific recommendation is made. LUFB refers to a previous summary of recommendations on the RPS made to RTALSG in June 2009<sup>4</sup>.</p>	<ul style="list-style-type: none"> <li>▪ In general the recommendations by LUFB are accepted by staff. However, they are at a high level, rather than informing the development of specific mechanisms.</li> <li>▪ RDC staff has noted support for the development of supportive and complementary District Plans.</li> <li>▪ Staff recognise that clearer guidance and direction is also required in the RPS and District Plan in terms of land use and development to better inform decision making and develop policy within the lake catchment.</li> </ul>

### Section 4.5 Rotorua District Plan

LUFB Recommendations	Staff Response
<p><i>That the District Plan focuses on being enabling and provides a clear vision. Further consideration in the District Plan review should be given to:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Minimise goals that are inconsistent with nutrient reduction objectives- (i.e. visual landscape rule discouraging tree planting).</i></li> <li>▪ <i>Ensure a common focus between councils, and</i></li> <li>▪ <i>Enables land use change that achieve nutrient reductions (i.e. less prescriptive, enables innovation and supportive subdivision rules and zoning).</i></li> </ul> <p>The recommendations made in June 2009<sup>5</sup> are also referenced.</p>	<ul style="list-style-type: none"> <li>▪ RDC staff agree in general to the recommendation regarding the district plan (enabling land use change and being less prescriptive), although it is not specific enough to comment on further.</li> <li>▪ RDC has been working with BOPRC and agree the district plan should have an incentives approach to encourage and direct land use change in areas where it is most needed, such as the Lake Rotorua catchment. This approach is being looked at with the structure plan project for a holistic planning approach to subdivision and development, including considerations such as servicing, population growth and possible ecological corridors, as well as water quality benefits and incentives.</li> <li>▪ The recommendations listed in the June 2009 summary are in general accepted. Most are addressed through s32 requirements of efficiency and effectiveness, and the guiding principles and critical success factors of the district plan review. The new district plan will be assessed against all of</li> </ul>

<sup>4</sup> Summary of Recommendations from the Land Use Futures Board to the Rotorua Lakes Strategy Group", June 2009

<sup>5</sup> Summary of Recommendations from the Land Use Futures Board to the Rotorua Lakes Strategy Group", June 2009

	<p>these.</p> <ul style="list-style-type: none"> <li>▪ In their recommendations, LUFB seeks in (k) a catchment wide vision which should not be to the “detriment of individuals”. However, in achieving that vision, at the individual property level, there will be some who will gain opportunities more than others. (e) seeks recognition of land not in productive use or retired. Staff seek more direction on how LUFB sees these equity issues being addressed or prioritised.</li> </ul>
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## Section 5 Interventions Framework – Assessment Of Nutrient Reduction Options

LUFB supports the development of the Interventions Framework and sets out its position and recommendations under five headings.

### 5.1 Support for Land Use Change and Nutrient Mitigation

<b>LUFB Recommendations</b>	<b>Staff Response</b>
<p><i>That the current allocation of public funds to support land management change required for nutrient reduction is insufficient. Adequate funding should be allocated to achieve the reductions that can not be reasonably achieved through use of appropriate existing technology.</i></p>	<ul style="list-style-type: none"> <li>▪ Staff are aware and agree that more funding will be required. However, this does not have to come from public funding and public funding should not be relied on 100%.</li> <li>▪ Funding may come from existing funds managed by the partners but equally from parent industry and landowner groups such as FOMA, Dairy New Zealand as well as other existing or future sources. This would be at high level engagement, however, between the RTALSG and those parent bodies. It will be vital to make most effective use of existing funds by avoiding duplication and making best use of services.</li> <li>▪ There is a need to be aware of the constraints on council funding through the LGA</li> <li>▪ An overview from staff to LUFB on what and how funding is currently allocated may assist in managing these expectations as well as greater awareness of future funds allocation.</li> </ul>
<p><i>That these additional nutrient reduction requirements, over and above good practice and existing technology should be achieved through the use of public</i></p>	<ul style="list-style-type: none"> <li>▪ As with existing science and technology, future technology may be applied through a range of industry best practice and land owner initiatives,</li> </ul>

<p><i>funds.</i></p> <p><i>To create a fairer outcome it is therefore recommended that in achieving the land use targets the following approach is adopted as part of the framework:</i></p> <ol style="list-style-type: none"> <li><i>1. Landowners develop a whole farm management plan that identifies suitable BMP's and mitigation options for their activities/location. These are implemented at the cost of the land owner.</i></li> <li><i>2. Farm management planning and other mitigation implementation is supported by a specific Lakes Area extension service.</i></li> <li><i>3. The uptake of known and evolving research technologies are incentivised through support from public funding, including case studies and ongoing extension.</i></li> <li><i>4. Any additional reductions required in addition to those achieved via the above points are achieved through public funding.</i></li> </ol>	<p>more than reliant on external funding. A blanket assumption that public funding will be required is premature.</p> <ul style="list-style-type: none"> <li>▪ Staff recognise the extensive research and information collated and presented to LUFB. It is important to now focus on how to utilise that information in actions to achieve nutrient reduction requirements, interventions frameworks and policies.</li> <li>▪ There could be an opportunity for RDC to partner with BOPRC and provide some financial assistance after 2014 when current Environmental Programmes (run by BOPRC) cease. The funding for the EPs from RDC was originally motivated by political will to back a project to help lake water quality.</li> <li>▪ Partly funding farm management plans or an extension service may also be an alternative for Council to consider. These programmes help individual land owners and facilitate 'on the ground' work. However, more details are needed.</li> <li>▪ The request for a specific extension service needs more details: the form and scope of the service as staff consider that existing services may be adapted to meet any changed needs. See also comments at section 5.5 Extension Services, below.</li> </ul>
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## Section 5.2 - Intervention Approaches Being Considered

<b>LUFB Recommendations</b>	<b>Staff Comment</b>
<p>LUFB makes no recommendation in relation to Intervention Approaches.</p> <p>The Susie Greenhaigh report (2009) is referenced.</p> <p>Approaches reviewed are:</p> <ul style="list-style-type: none"> <li>▪ Nutrient trading</li> <li>▪ Cost share</li> <li>▪ Reverse auctions and tenders</li> <li>▪ Stewardship approaches</li> <li>▪ Land retirement.</li> </ul> <p>Further evaluation is proposed</p>	<ul style="list-style-type: none"> <li>▪ These approaches have been reviewed as part of the Draft Regional Special Projects Position Paper on Lake Rotorua (April 2010).</li> <li>▪ Staff also acknowledge the Helen Ritchie Report which provided a stock take of management practices and relevant research in the catchment. This could contribute to a strategy that identifies knowledge gaps and economic analysis before practices can be recommended to land users. It is not evident that this has been fully utilised by LUFB.</li> <li>▪ LUFB review of the approaches would</li> </ul>

	<p>use the Board's strengths and provide a complementary landowner perspective. This is recommended by staff as a vital task to be undertaken.</p> <ul style="list-style-type: none"> <li>▪ In 2 Summary of Position (8<sup>th</sup> bullet point) evaluation of the options against the criteria in 4.1 is recommended. However, this is not explicit in section 5.2. This could be used to demonstrate the application of the criteria.</li> </ul>
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***[Note: there is no Section 5.3 in the Position Paper]***

#### **Section 5.4 - Application of Best Practice**

<b>LUFB Recommendations</b>	<b>Staff Comment</b>
<p>LUFB makes no recommendation in relation to the application of best practice. LUFB advocates specific farm planning and extension service. No further action is proposed</p>	<ul style="list-style-type: none"> <li>▪ More details would be helpful, once LUFB has reviewed intervention approaches.</li> <li>▪ The comments on the extension service under 5.1 and 5.5 apply.</li> </ul>

#### **Section 5.5 - Extension Services**

<b>LUFB Recommendations</b>	<b>Staff Comment</b>
<p><i>That an extension service is a key part of the interventions framework to encourage uptake of technology and assist in implementation of any regulatory framework.</i></p>	<ul style="list-style-type: none"> <li>▪ The request for a specific extension service needs more details: the form, scope and role of the service envisaged.</li> <li>▪ Staff consider that existing services may be adapted to meet any changed needs without the need to duplicate services.</li> <li>▪ The role of the Communications Strategy under development is complementary and may address some of the issues to technology transfer and uptake.</li> <li>▪ Staff identify a key role for LUFB as a champion of the toolkit developed by LUFB and the RTALSG.</li> </ul>

## Section 6 LUFB Strategy for further refinement of options

LUFB Recommendations	Staff Comment
<p>LUFB makes no recommendation in this section.</p> <p>LUFB sets out nine actions to be undertaken in the following 6 to 12 months to advance its understanding of existing and potential options.</p>	<ul style="list-style-type: none"> <li>▪ Staff support the provision of details of the extension service envisaged by LUFB and intervention approaches set out in 5.2 above. These are core functions for LUFB and pragmatic solutions would be of vital assistance to staff in developing policy responses.</li> <li>▪ Staff encourage priority to be given to these two functions.</li> <li>▪ In addition, the next RPS and the RDP review will require input from LUFB.</li> </ul>

## 6. CONCLUSIONS

6.1 In conclusion, staff from the partner organizations note:

- The important role and perspective of LUFB in informing their work and in the development of policies and plans;
- The general consistency of the policy direction with partner organisations in many areas;
- The need to consider further the emphasis LUFB places on reliance on public funding, whereas future responses are likely to continue to require inputs from public and private sources, as well as the land owners and other stakeholders as well as the three partner organizations in RTALSG. It is considered that LUFB may be assisted by an overview of funding sources and how they are allocated, as well as how changes may be responded to;
- The need for a clearer understanding of the Extension Service;
- The next focus being on a visionary and practical report setting out preferred options for practical measures to achieve land use change.

Ann Nicholas  
SIGMA CONSULTANTS LTD

15 July 2010

**File Reference:** 4.01128  
**Significance of Decision:** Low



**Report To:** Rotorua Te Arawa Lakes Strategy Group

**Meeting Date:** 23 July 2010

**Report From:** Greg Corbett, Manager Land Resources (Rotorua)

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## **Land Use Futures Board Advice to Rotorua Te Arawa Lakes Strategy Group on Maori Land Utilisation**

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### **Executive Summary**

The Land Use Futures Board has been considering the constraints Rule 11 has placed on under-developed Maori land. They have also considered how partner agencies can improve their engagement with Maori land owners on nutrient management matters. The Board's considerations have been summarised in the attached paper titled "Advice to Rotorua Te Arawa Lakes Strategy Group on Maori land utilisation".

The paper contains five recommendations and four advisory notes for the Strategy Group to consider under headings of Governance, block size and funding.

Board Chairman, Bill Cleghorn will be present to highlight the key points of the paper and respond to any questions the Strategy Group may have.

### **1 Recommendations**

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

- 1 Receives the report, Land Use Futures Board Advice to Rotorua Te Arawa Lakes Strategy Group on Maori Land Utilisation.**
- 2 Confirms that the significance of the decision has been assessed as LOW, and under Section 79 of the Local Government Act 2002 (LGA) confirms that in light of the level of significance of the decision it does not require: (a) Further identification and assessment of different options under section 77 LGA; (b) Further investigation or consideration of community views under section 78 LGA; (c) Any further written record of the manner in which section 77 and section 78 matters have been addressed.**

### **2 Financial Implications**

#### **Current Budget**

There are no implications to current budgets.

#### **Future Implications**

There are no future budget implications

### **Ten Year / Annual Plan Implications**

There are no implications to the Ten Year Plan or Annual Plan.

Greg Corbett  
**Manager Land Resources (Rotorua)**

**7 July 2010**

# Appendix





## **Advice to Rotorua Te Arawa Lakes Strategy Group on Māori land utilisation**

**June 2010**

### **Purpose of this paper**

This paper summarises constraints around the utilisation and development of Māori land generally and within the “Rule 11” catchments. It also provides advice and recommendations to Rotorua Te Arawa Lakes Strategy Group (RTALSG) on how partner agencies can better work within key constraints.

The utilisation of under-developed Māori land that is currently constrained by “Rule 11” was discussed by The Land Use Futures Board (LUFB) following a field trip held on 14 April and during its meetings on 12 May and 9 June 2010. The LUFB considered constraints and opportunities and rationalised these into three groups: Governance, block size and funding.

### **Constraints for Māori land**

#### **Governance/Tenure**

- Te Ture Whenua Māori Act 1993 – This Act dictates the constitution of the Māori Land Court and the obligations and responsibilities in the governance and management of Māori land.
- Can involve large numbers of shareholders which makes communications and decision making difficult.
- A minority of shareholders can prevent a change in land use.
- Apathy of shareholders to attend meetings and make decisions to effect change.
- Councils’ current RMA consultation processes focus on Hapū Iwi and do not always engage with Māori land owners and Trusts.

#### **Block size**

- The small size of many Māori land blocks limits the ability to generate income and deal with issues such as high overhead costs.

#### **Funding**

- Māori land owners have a limited ability to raise funds to pursue new business options for their land because it is more difficult for the land to be used as security against loans.
- Owners are often motivated by cash returns rather than capital gains.
- Rule 11 can limit the potential to develop the land for its’ highest and best use.
- Councils have wanted funding secured with covenants (covenants seen as an alienation of land). This issue has been addressed by the Regional Council.
- Inadequacy of Rotorua Lakes Deed funding for land use change limits opportunities (refer further recommendations of Section 5.1 of the LUFB Position Paper (December 2009)).

## Recommendations and Advice

### Governance

- **Advice:** Councils ensure that staff are aware of the cultural linkages between Māori and whenua including the objectives of land owners and Trusts' for their land and people.
- **Advice:** Te Ture Whenua Māori Act 1993 – Councils ensure that staff are knowledgeable about the constraints imposed by this Act prior to negotiating with Māori Land owners.
- **Advice:** Councils ensure that adequate timeframes are allowed for when negotiating with Māori land owners.

### Block size

- **Recommendation:** That RTALSG actively encourage a collective approach in identifying opportunities for smaller landholdings to achieve a reduction in nutrient export, eg. joint landowner meetings, dedicated liaison person.

### Funding

- **Recommendation:** Where covenanting land is an issue, Councils pursue funding agreements for land use change using alternative legal mechanisms e.g. Memorandum of Understanding's and/or partnership agreements.
- **Recommendation:** That the Bay of Plenty Regional Council engages with Māori land owners to raise awareness of trading options under Rule 11.
- **Recommendation:** That Councils' explore options (eg. leases or partnerships) with Māori land owners to develop and fund recreational amenities and environmental enhancement on Māori land around Rotorua's lakes in the interest of public good.
- **Recommendation:** That Councils support land use change on Māori land by providing flexible and negotiable development options.
- **Advice:** When negotiating for land use change with Māori land owners, Councils must also recognise the need for the land to generate benefits for the owners.

**File Reference:** 4.00844  
**Significance of Decision:** Receives Only - No Decisions



**Report To:** Rotorua Te Arawa Lakes Strategy Group  
**Meeting Date:** 23 July 2010  
**Report From:** Warwick Murray, Group Manager Land Management

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## **Aeration investigation work to treat nutrient releases from lake sediments**

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### **Executive Summary**

Science undertaken on Lake Rotorua's nutrient pollution issue has shown that in order to achieve improvements in water quality the internal sources of nutrients (in-lake sources) need to be addressed in parallel with the external sources (catchment sources).

Regional Council has been working in conjunction with the University of Waikato and other Crown Research Institutes to address sediment releases of nutrients. This has resulted in the treatment of sediment in Lakes Ōkāreka and Ōkaro, with flocculent agents. This is developing research to scale up to possible treatment of Lake Rotorua.

Work has also been undertaken to assess the potential for other techniques to control sediment nutrient releases. One such technique, aeration/mixing, has been used successfully in other locations overseas. Staff believe that this has potential advantages over the flocculants already tested and that a large scale trial could be undertaken to compare with the flocculent research for future lake operations, and are currently undertaking initial modelling work to identify application. Professor Hamilton will provide a presentation on the modelling work he has been doing on this technique to date.

### **1 Recommendations**

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

- 1 Receives the report, Aeration investigation work to treat nutrient releases from lake sediments.**

**That the Rotorua Te Arawa Lakes Strategy Group recommend that the Regional Council:**

- 1 Receives the report, Aeration investigation work to treat nutrient releases from lake sediments.**

## 1 Introduction

Lakes sediments accumulate nutrient containing material from dead algae and other biomass. In eutrophic lakes at times of the year the lake bottom waters can become anoxic (low oxygen levels). At this time the sediments then release nutrients into the water column. The nutrients of concern within our programme are nitrogen and phosphorus, which drive algal blooms in the lake.

Regional Council has a programme of research around sediment treatment to address this problem in eutrophic lakes. So far we have used flocculants in Lakes Ōkāreka and Ōkaro. The ultimate objective is to test technologies that could be applied to Lake Rotorua to limit the release of nutrients from the sediment. Advice from the Water Quality Technical Advisory Group (TAG) is that the work on Lake Ōkaro should be scaled up to an intermediate sized lake such as Rotoehu, before being applied to Lake Rotorua. Although this programme is proving successful aeration of lake bottom waters can also achieve reductions in nutrient releases.

There are certain advantages to using aeration as a method for preventing nutrient releases. These include:

- No chemicals are added to the water, with potential side effects on the ecology,
- Aeration can be turned on and off as required and the time of application can be extended if necessary,
- Most flocculants are aimed at locking up phosphorus and have very minor impact on controlling nitrogen, where aeration can address both nutrients,
- The process is more acceptable to lay people as it appears to be more natural,
- Any effects from aeration can be reversed simply by turning the machinery off.

Staff have recently had consultants undertake an assessment of the costs associated with use of flocculants and aeration. Although the costs vary widely depending upon what material is used, for flocculants the costs vary between about \$7M to more than \$20M for a single operation in Lake Rotorua. A lower cost can be achieved using alum (aluminium sulphate) alone but additional chemicals are required to buffer the application to prevent toxicity.

In comparison, predicted aeration costs for Lake Rotorua are between \$3M to \$5M over a ten year period. This includes capital and operational costs.

## 2 Aeration Proposal

As already stated the advice from the TAG is to scale up the results of the sediment capping (flocculation) work on Lake Ōkaro to an intermediate sized lake such as Rotoehu, before transferring the technique to Lake Rotorua. There are a number of reasons for this step;

- Lake Ōkaro is 30Ha lake, Rotorua is 8,000 Ha, with a potential area to be treated of 3,000 Ha (more than 100 times the Ōkaro exercise),
- Lake Ōkaro is a deep monomictic lake, and so behaves in a different way with respect to summer stratification. Ōkaro stratifies at the beginning of the summer and does not mix again until winter. In comparison Lake Rotorua is a shallow polymictic lake, which intermittently stratifies over summer as warmer temperatures and low winds allow. Lake Rotoehu behaves in the same way as

Lake Rotorua and is about 800 Ha. So it is a moderate scale up of techniques to resolve sediment nutrient releases and provide a more reliable test of the expected results of any intervention on Lake Rotorua.

Staff suggest aeration could be tested on Lake Rotoehu as a precursor to application to Lake Rotorua. If that proves successful then consideration will be given to scaling that up for application to Lake Rotorua. If the technique is unsuccessful then the plant can be turned off and removed and Rotoehu will still be a suitable candidate for ongoing testing and scaling up of sediment capping products.

Modelling work is currently being undertaken by Professor Hamilton to assess the following

- Effect of aeration on Lake Rotorua, and
- Effect of aeration on Lake Rotoehu.

If the modelling for Rotorua and Rotoehu shows worthwhile benefits then staff will develop a proposal to apply an aerator to Lake Rotoehu as a large scale test. Testing would need to take place for at least 12 months to provide information on the value to Lake Rotorua. The trial would cover testing the mechanical aspects of the operation including water mixing capabilities as well as the water quality improvements and ecological effects.

Professor Hamilton will be in attendance at the meeting to present modelling info on the aeration potential.

### **3 Indicative Cost**

As noted above preliminary estimates of the cost of aeration in Rotorua is between \$3M and \$5M (capital and operating) over a ten year period.

Some preliminary costing work has been done for an aeration trial in Rotoehu. For aeration some costing work has been done. These include a capital cost of \$230,000 and operating and monitoring costs of \$160,000.

As this proposal is not included within the 10 year plan budget additional funding will be sought to undertake the trial if the modelling work currently being undertaken by Waikato University shows that a trial will deliver worthwhile benefits.

### **4 Other Matters**

Aeration as a technique does not preclude the option of doing similar tests using capping agents at its conclusion. It can simply be turned off to allow the capping agent to be applied and to take effect.

The design of the machinery is such that it will not be visible on the lake surface. The water flow and mixing action are driven by air injected at the bottom of the machine. The air supply is based on land and pumped to the machine by pipes located on the lake bed. A bubble collection device will prevent air reaching the water surface resulting in no surface bubble plume to detract from the lake amenity values. A buoy marking the machine will be moored at the surface.

The project would need to be commissioned before the beginning of summer stratification events. It will need to be turned on intermittently as monitoring determines, to prevent the intermittent stratification events that release nitrogen and phosphorus.

To get approval for installation Regional Council will need:

- Access to land for the aeration equipment,
- Community and affected party support for the proposal,
- Resource consent approval for all plant in the lake and possibly on land, and
- Navigation and Safety approval for the machine in its lake location.

## **5 Financial Implications**

### **Current Budget**

Report is for committee information only. Any funding considerations will need to be taken to Regional Council.

### **Future Implications**

Report for information only. Future implications could be a reduction in sediment treatment costs for Regional Council.

### **Ten Year / Annual Plan Implications**

Application of this proposal is not covered in the 10 year plan.

Andy Bruere  
**Lake Operations Manager**

**for Group Manager Land Management**

**14 July 2010**

**File Reference:** 1.00250  
**Significance of Decision:** Receives Only - No Decisions



**Report To:** Rotorua Te Arawa Lakes Strategy Group  
**Meeting Date:** 23 July 2010  
**Report From:** Warwick Murray, Group Manager Land Management

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## Vehicles for Land Use Change

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### Executive Summary

In approving the Regional Special Projects position paper on 22 April 2010, Council has directed that staff investigate delivery mechanisms for Council to implement assistance programmes for achieving land use change in the Rotorua catchment (Recommendation XII).

APR Consultants have been retained to provide advice on potential business and agency models which could be used to facilitate/enable direct market intervention to effect land use change.

They will provide a presentation at this committee meeting which will set out a range of business models or "vehicles" and their relative strengths with a view to gaining some steer from the committee on their preferences prior to completing their formal report.

### 1 Recommendations

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

- 1 Receives the report, Vehicles for Land Use Change by APR Consultants on potential agency models.**

### 2 Comments

APR Director Deryck Shaw will be providing the presentation.

While a range of models will be explored, some attention will be given to evaluating the Taupō Trust model as a potential model for Lake Rotorua.

### 3 Financial Implications

#### Current Budget

The work is funded for within the current Rotorua Lakes budget.

#### Future Implications

Should the recommendations from the APR Consultant's report be adopted by the Regional Council, the funding implications will be addressed in the next Regional Council Annual Plan and Ten Year Plan processes.

**Ten Year / Annual Plan Implications**

This report was prepared within the current budget.

Anna Grayling  
**Rotorua Lakes Project Manager**  
**for Group Manager Land Management**

**12 July 2010**

# Appendix



# ***Lake Rotorua Catchment Land Use Change Interventions:***

## **Presentation of Potential Agency Models**



**Presented by APR Consultants Ltd  
to Rotorua Te Arawa Lakes Strategy Group  
23 July 2010**

# Presentation Overview

- The project brief
- Models/scenarios for land use change
- Attributes of a successful model
- Lake Taupo Protection Trust
- Governance/management options for Rotorua
- Where to from here...

# The project brief

- Evaluate financial models around N and P purchase and land purchase and/or leasing
- Identify appropriate legal structures to deliver the outcomes required (eg, trading trust, company, contractor, agent or tender)
- Profile the attributes of a successful model
- Formulate a Business Plan based on the above information

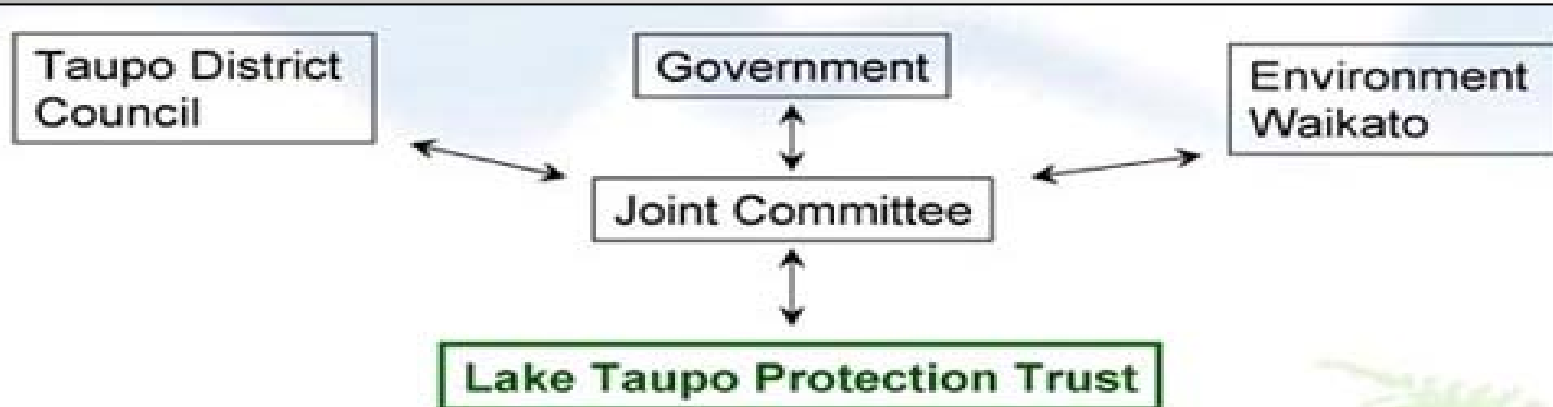
# Models/scenarios

- Scenario 1: Land Use Transactions – two options:  
Option A – Passive market transactions – purchase of property and sale with covenants around land use.  
Option B – Active market transactions - purchase of property and redevelopment and sale following change of land use (eg from dairy/ sheep and beef to lifestyle and/or forestry blocks).
- Scenario 2: Long-term land lease and forestation of Maori agricultural land
- Scenario 3: Purchase nutrients (primarily N)

# Attributes of a successful model

- Ability to work with land owners on an ongoing basis, and keep all stakeholders informed
- To undertake research into other market incentives such as carbon trading and profiling of other land uses (eg, eco-tourism)
- To have independence so not as to potentially blur regulatory and commercial functions
- To be able to leverage off the learning of existing models, including catering for both Maori and freehold land tenure
- To ensure that there are consistent messages in the market about the price of N and P for nutrient reduction purposes
- Ensure 'watertight' legal agreements and active enforcement of any nutrient breaches
- An ability to make rapid decisions and act on them (in response to market opportunities)
- To have political, iwi and community support at a local, regional and central government level
- To have a clear strategic direction with developed business plans and targets
- To be efficient in its formation, operations and accountabilities

# Lake Taupo Protection Trust



## Joint Committee

2 representatives from Government, Ngati Tuwharetoa, Taupo District Council, Environment Waikato

## Lake Taupo Protection Trust

Up to 8 people appointed by Joint Committee

Responsible for implementing strategies to reduce manageable N by 20%

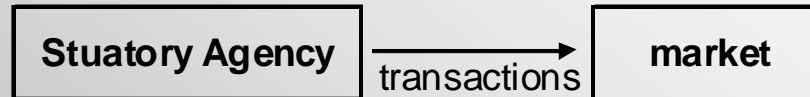
# Lake Taupo Protection Trust

- Trust established as a Council Controlled Organisation (CCO) in early 2007
- No less than 6 and no more than 8 trustees
- Trustees are appointed by Trust Settlor (Crown, EW and TDC) and are appointed on basis of skills, experience to meet all of the dimensions of expertise required for effective work of trust.
- Administering an \$81.5m public fund – 15 yr timeframe
- Aiming to reduce manageable N by 20% (approx 153 t) Note no specific P reduction target
- Key goal is permanent transfer of pastoral land to lower N
- Direct purchasing of farms – six to date (1,600 ha), of which four have been on-sold
- Direct purchasing of N with a landowner has also been completed
- In purchasing farms, the Trust uses independent professional valuations

# Governance/management options

- Option A: Statutory Agency (eg, EBOP, RDC or MFE) direct intervention in market
- Option B: Sub-contract the Lake Taupo Protection Trust (LTPT)
- Option C: Establishment of a separate legal entity (eg, 'Rotorua Lakes Protection Trust') with direct market activity
- Option D: Establishment of separate legal entity, overseeing a sub-contract to the LTPT (ie, a hybrid of options B and C)
- Option E: Creating a legal structure and amended Terms of Reference for Rotorua Te Arawa Lakes Strategy Group (RTALSG) or Land Use Futures Board (LUF) (or other existing entity)
- Option F: Contracted service provider – tender agent

# Option A: Purchase/lease directly



Strengths	Limitations
<ul style="list-style-type: none"><li>■ Statutory Agency has direct engagement in market.</li><li>■ Greater efficiency (no contracted requirements).</li><li>■ Direct accountability.</li></ul>	<ul style="list-style-type: none"><li>■ Potential conflict of roles (ie, Statutory Agency as a regulator being seen to restrict land use and value and also involved in market trading).</li><li>■ Limited track record in market-based activities and not a core function of Statutory Agency.</li><li>■ Public role may influence market and make trading difficult.</li></ul>

# Option B: Sub-contract to LTPT



## Strengths

- Ability to leverage off track record of LTPT including areas such as public relations, information and transaction processes.
- Direct contract with no setup costs and therefore early activity.

## Limitations

- LTPT was set up for one purpose – Issues if it were to be applied in a different jurisdiction?
- Potential to be seen as not connected to Rotorua lakes from a governance perspective.
- LTPT may not necessarily appreciate issues that are more specific to the Rotorua lakes (eg P nutrient loads).
- Budget allocations for Rotorua catchment much lower based on \$ per kg of N.

# Option C: Establishment of a new entity

(eg, CCO, Trust, Company)



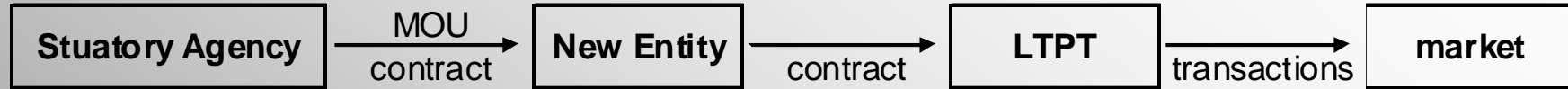
## Strengths

- Provide separate accountability with appropriate governance controls (ie, at arms length from Statutory Agency).
- Can be tax effective.
- Provides an entity specifically formed to reduce nutrient loads in Rotorua lakes.

## Limitations

- Creates a separate structure with additional servicing requirements around the entity (eg, accounting, legal and other overheads).
- Entity has to establish relationships, formulate strategic plans and establish operational delivery, which can create a significant time lag.
- Potential time delays in establishing entity (eg agreement by Council, formulation of legal structure, establishment of governance and management, strategic and business planning and appointment of staff).

# Option D: New entity sub-contracts LTPT



## Strengths

- In addition to the advantages in Option C, this option is informed by the operating history of LTPT and provides proven market transaction models.
- Reduces initial delivery risk by contracting delivery to meet agreed targets.

## Limitations

- There may be limitations based on preconceived ideas from LTPT and dimensions to Rotorua lakes that are either more complex or have not been contemplated (eg, P nutrient, broader range of land use options).
- Still some time delays in establishing entity (eg agreement by Council, formulation of legal structure, establishment of governance and management, strategic and business planning).

# Option E: Incorporation of LUF Board



## Strengths

- Less of a learning curve, given RTALSG or LUF Board members' awareness of Rotorua lakes issues.

## Limitations

- RTALSG or LUF (or other entity) was set up for one purpose and therefore there may be issues if it were to be given quite a different role.
- There may be issues around the skills sets of RTALSG or LUF Board members relative to the requirements of the Trust.
- Potential public and market confusion over the changed role of RTALSG or LUF Board.
- Still have to create a new legal entity to meet accountability requirements.

# Option F: Contracted service provider

(eg, Statutory Agency tenders/contracts to service agent(s))



## Strengths

- Opportunity to provide clear contractual accountability and other working relationships around desired outcomes.
- Potential efficiencies in delivery (ie, lower overhead costs).
- Relatively straightforward to set up.

## Limitations

- Potential for reputational risks through accountability to stakeholders and public (eg, Statutory Agency seen as both regulator and market player).
- Contract will likely be multi dimensional (ie, land purchase/lease, N and P purchase and possible research) – may be difficult to get appropriate service agreements.
- Given the contract will be for a number of years and will likely evolve over time, contractual issues may arise.

# Summary of Models

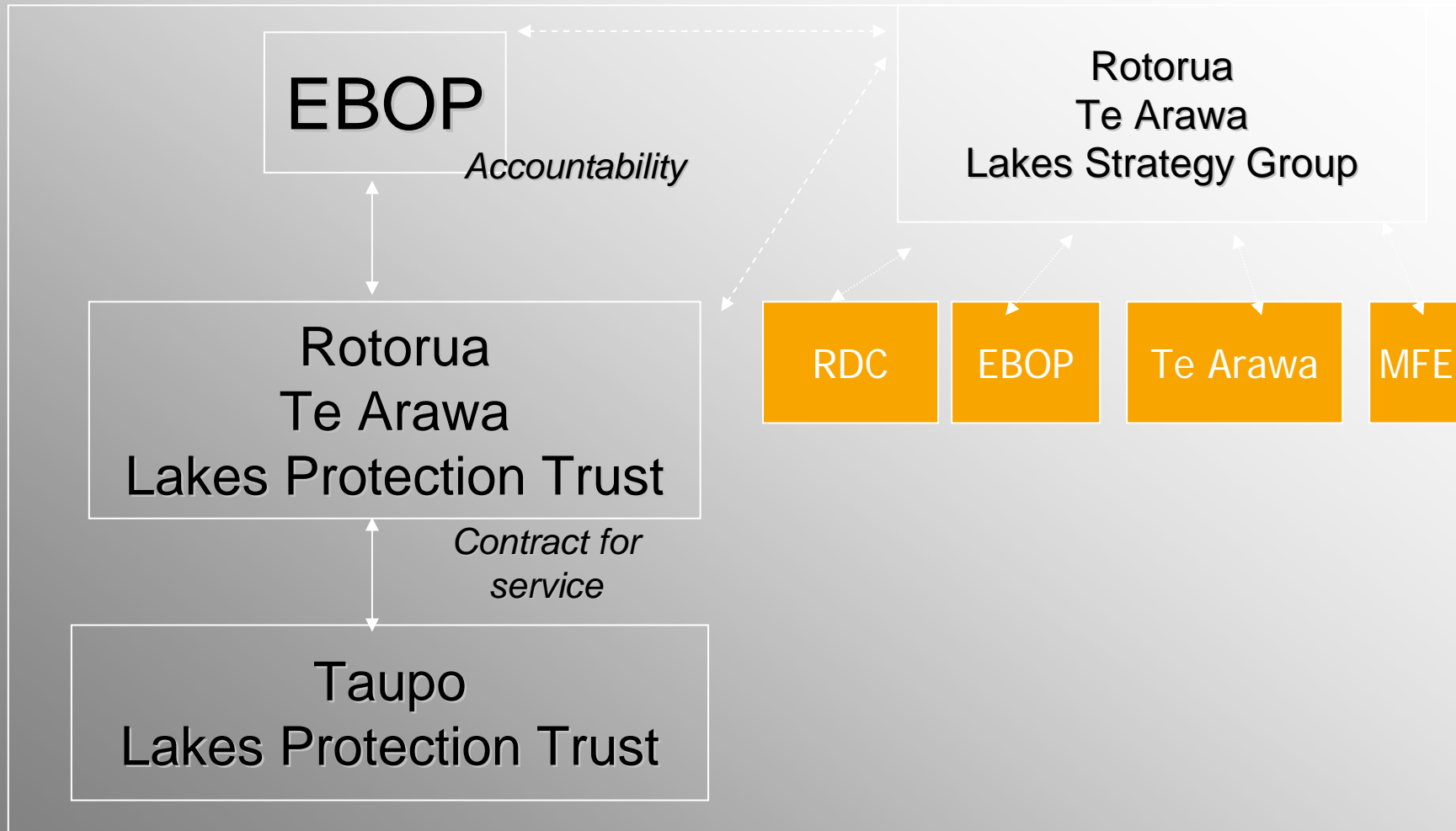
Model	Independence	Role Focus	Efficiency	Build and retain knowledge	Leverage off existing models	Overall rating	rank
<b>A: Purchase/lease directly?</b>	✓	✓✓	✓✓✓	✓✓✓	✓✓	11	3=
<b>B: Sub-contract LTPT?</b>	✓✓	✓✓	✓✓	✓✓	✓✓✓	11	3=
<b>C: Establish a Rotorua Lakes Protection Trust?</b>	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓	13	1=
<b>D: Establish a local Trust that would sub-contract LTPT?</b>	✓✓✓	✓✓	✓✓✓	✓✓	✓✓✓	13	1=
<b>E: Incorporation of RTALSG or LUF Board?</b>	✓	✓✓	✓✓	✓✓	✓✓	9	6
<b>F: Contracted service provider?</b>	✓✓✓	✓✓	✓✓✓	✓✓	✓	11	3=

Rating	✓	Low	1
	✓✓	Medium	2
	✓✓✓	High	3

# Where to from here...

- What is the Committee's preferred option(s) (for further investigation)?.....
  
- A: Purchase/lease directly?
- B: Sub-contract LTPT?
- C: Establish a Rotorua Lakes Protection Trust?
- D: Establish a local Trust that would sub-contract LTPT?
- E: Incorporation of RTALSG or LUF Board?
- F: Contracted service provider?
  
- What key attributes need to be included in the model (eg, independence? Mgt/governance competencies? Lines of accountability?)
  
- Final report and recommendations

# A Conceptual Model



# Key Areas of focus...

- Further development of preferred model
- Development of project plan around model (eg activities, timeframes)
- Discussion with EBOP, MFE, RDC and Te Arawa
- Formulation of draft business plan





**File Reference:** 2.00034  
**Significance of Decision:** Receives Only - No Decisions



**Report To:** Rotorua Te Arawa Lakes Strategy Group  
**Meeting Date:** 23 July 2010  
**Report From:** Warwick Murray, Group Manager Land Management

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## Group Manager's Report

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### Executive Summary

The purpose of this report is to provide the Rotorua Te Arawa Lakes Strategy Group with a briefing on key issues and actions associated with the implementation of the Strategy for the Lakes of Rotorua District, not otherwise covered in the agenda.

## 1 Recommendations

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

**1 Receives the report, Group Manager's Report.**

## 2 Working for Lake Rerewhakaaitu

“Working for Lake Rerewhakaaitu” is a package of stories that records initiatives that the Rerewhakaaitu community had been undertaking to manage nutrient leaching from farms into the lake. The six case studies have recently been completed and are presented as interesting and approachable real-life stories. This work has been developed to capture what Rerewhakaaitu farmers are doing, to maintain or improve lake water quality, and why they have been motivated to do so. Three of five farmer interviews have also been filmed as short videos. Our main aim is to promote Lake Rerewhakaaitu farmers’ experiences to other dairy farmers in lake catchments. We intend to work with industry partners (i.e. Fed Farmers, DairyNZ) to do this. Copies of the case studies will be available at this meeting of the Group.

## 3 Operational Update

### 3.1 Lake Rotorua

The P locking plant for the Awahou Stream continues to be delayed. This is due to lack of engagement with Ngati Rangiwewehi. Staff have made a number of approaches to Rangiwewehi and on 16 June held a meeting with representatives of Ngāti Rangiwewehi, Te Rangitaeorere and Tapuika. This was a good starting point to engagement. Carry forward of funding has been necessary. Staff are now identifying further options to address the phosphorus removal opportunities caused by a delaying in commissioning this plant.

The construction of Tikitere De-nitrification Plant (opposite Hell’s Gate) is now proceeding. The site was previously occupied by some unused glass houses which

have now been removed to make way for the pilot plant. The plant will run for 18 months providing design and control info before work commences for the full scale plant.

The trial algae harvest project for Ōhau Channel will continue until about the end of July. Then the partners will reassess the need to continue or finish the trial work. The plant has been operating since mid- May. It has attracted a numerous enquiries as well as a visit from Melbourne Water Staff interested in the use of the technology at the Melbourne Waste Water Plant for removal of nutrients from pond effluent. Monitoring results will be analysed at the end of the trial period and assessed by Regional Council scientists.

### 3.2 Sediment Treatment Work

In response to concerns about algae problems and effects in the Okere Arm of Lake Rotoiti and the Kaituna River, staff have been meeting with key members of the Sediment Technical Advisory Group to discuss possible options for addressing the drivers for algae blooms. Investigations are progressing to see if dosing of the lake bottom waters can be treated as short term response lock further phosphorus and curtail the emerging pattern of algal blooms that has occurred in Rotorua over the past 2 autumns.

Staff are progressing with resource consent application to enable the sediment capping trials to take place on Lake Rotorua in November 2010. These are designed as "plot" trials where up to 5 different products will be tested in application trials in water greater than 15m deep north of Mokoia Island. Plots will be about 30 X 30 m square. The objective of this work is to determine how the alternative materials perform during application and in particular how accurately they reach the target area. They will then be tested for performance at locking up nutrients and in particular phosphorus on the lake bed. This work is done by using benthic chambers on the lake bed that are about 1m in diameter. The conditions within these chambers can be altered to simulate changes in natural lake conditions on the lake bed.

Aeration as an alternative to sediment capping is continuing to be investigated. The University of Waikato is undertaking initial modelling work on both Lakes Rotorua and Rotoehu to test feasibility of such an approach. If the modelling shows that aeration could be a feasible and practical alternative, staff will initiate design of a machine for Lake Rotoehu and commence resource consent application for application to that lake. This proposal is not budgeted in the 10 year plan and so staff will need Regional Council approval to implement this budget expenditure.

### 3.3 Lake Rotoehu

The annual weed harvesting work has now been completed. More than 2700 T of weed was harvested this year which compares well with the 3000 T harvested last season.

The floating wetland trials for Rotoehu are continuing and will be reported in August 2010.

The construction of the Rotoehu P locking plant has commenced. It is expected that the plant will be completed within the next 3 to 4 months. It is expected that this plant will remove about 700kg of P from the Waitangi Soda Springs Stream.

Staff have made application for the resource consent for the biological treatment of Ōtautū Bay. This is a small scale, low cost project to aimed at reducing nutrients and breaking down sediment in the bay. It was initiated at the request of the community working party, but I not expected to be scaled up to the rest of the lake. Consultation

and engagement to date has been positive and a number of approvals from affected parties and organisations with statutory responsibilities have been received. It is now programmed to undertake the first application in February 2011.

### 3.4 Lake Okaro

No algae blooms were reported on Lake Ōkaro this season. This is unusual for Okaro where the algae typically bloom early in the summer season. We await the results of water quality monitoring completed in June to determine whether the actions taken on Lake Ōkaro have resulted in any significant improvement in water quality and in particular progress towards meeting the objective TLi.

## 4 Bench Marking Progress

Benchmarking work continues for Lake Rotorua. Staff are now working in the sub-catchments of Utuhina, Waiowhero, Ngongotaha and Waititi. The focus for Lake Rotorua is to benchmark properties with an area of greater than 70 Ha. So far 16 properties have been completed and staff are working with another 12 property owners through the process. It has been determined that there are about 100 properties that will need to be benchmarked to meet this objective.

## 5 Algae Monitoring

The algae monitoring for 2009/10 summer and autumn has indicated reasonable water quality of most of our Rotorua lakes. The following is a brief summary of the algae monitoring over the season. Lake Rotoehu has had health warnings re algae in late December. These continued through to early February. Occasionally high algae numbers were recorded in March also. For Lake Rotorua numbers started to increase in early March, and occasionally in April and May. These higher numbers influenced algae numbers in the Ōhau Channel and Okere Arm of Rotoiti. Although there is concern around the algae blooms in Rotorua, the extent was less severe than for late summer and autumn 2009/2010. Notably, no algae blooms were recorded on Lake Ōkaro this season.

More recently unusual algae proliferations have been identified in the form of large green/blue algal clumps up to 30 cm in diameter. This has been referred to the University of Waikato for investigation. They have identified the algae species present and have commented that this is an interesting phenomenon which they have not seen in our lakes before.

## 6 Science Update and Modelling Work

Modelling work around the land use impacts of the Rotorua catchment are continuing. This is the practical application of the ROTAN model developed by NIWA to determine the impact of various land use change scenarios, and the time that these changes will take before they have an impact on the water from the catchment reaching Lake Rotorua. This will be available for council when making decisions on various options for land use change to determine the optimal changes to get best value for proposed changes.

This Land use modelling work is being linked into the Lake Rotorua D-C model which will incorporate all in-lake and in-stream interventions as well as the proposed effects of land use change. The output will be the proposed impact of all interventions and the expected time frame. It is expected that the output from this work will be available in August 2010, and will form a basis for determining the best options for lake improvement and the time frame around that.

The Lake Rotoiti model has been completed and has now been used to determine the impact of changing the level and operating regime of Lake Rotoiti associated with the resource consent application for the Okere control gates. Rotorua Lakes staff are satisfied that a wider operating regime will allow marginally less Lake Rotorua water to bypass the diversion wall into Lake Rotoiti. This will assist in any consent hearing process or environment court process that may occur as a result of the application. Staff are now asking Professor Hamilton to apply the Rotoiti model to assist in predicting the progress for restoration in Rotoiti and the need for any further restoration interventions.

Further ground water monitoring work around Lake Tarawera has commenced. 3 monitoring bores will be installed in the catchment over the next few months to assist in determining ground water flows and consequent nutrient interactions between ground water and the lake. This work is key to determining sustainable loads for protection of Lake Tarawera.

## 7 **Financial Implications**

### **Current Budget**

There are no implications for the Bay of Plenty Regional Council arising from this report.

### **Future Implications**

There are no future implications from this report.

### **Ten Year / Annual Plan Implications**

There are no implications for the Bay of Plenty Regional Council's Ten Year Plan arising from this report.

Warwick Murray  
**Group Manager Land Management**

**6 July 2010**

