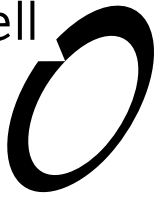


Boffa Miskell



Plan Change 2 – Nutrient Management

Background Report

Prepared for Rotorua Lakes Council

19 August 2020

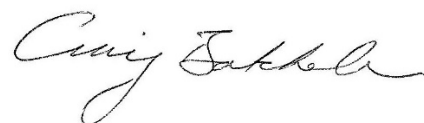


Bibliographic reference for citation:

Boffa Miskell Limited 2020. *Plan Change 2 — Nutrient Management: Background Report*. Report prepared by Boffa Miskell Limited for Rotorua Lakes Council.

Prepared by:

Craig Batchelar
Planner/Partner
Boffa Miskell Limited



Status: Final

Revision / version: 1

Issue date: 19 August 2020

Use and Reliance

This report has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Boffa Miskell does not accept any liability or responsibility in relation to the use of this report contrary to the above, or to any person other than the Client. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate, without independent verification, unless otherwise indicated. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.

CONTENTS

Summary	2
1.0 Purpose	1
2.0 Scope	1
3.0 Vision and Strategy for the Lakes of the Rotorua District	1
4.0 Regional Policy Statement (RPS)	1
5.0 Rotorua Te Arawa Lakes Programme Integrated Framework	3
6.0 Regional Natural Resources Plan – Plan Change 10 - Lake Rotorua Nutrient Management	4
7.0 Non-Regulatory District Strategies	5
7.1 Vision 2030 The Rotorua Way (2016)	5
7.2 Rotorua Sustainable Living Strategy	5
7.3 Rotorua Spatial Plan 2018-2048	5
7.4 30 Year Infrastructure Strategy 2018-2048	6
7.5 Long Term Plan 2018-2028	6
7.6 Annual Plan 2020/2021	8
8.0 Operative District Plan	8
9.0 Memorandum of Understanding - Nitrogen Accounting Approach for Rotorua Wastewater Treatment Plant Discharge (MoU)	14
10.0 Rotorua Wastewater Treatment Plant Upgrade (WWTP)	16
10.1 Background	16
10.2 Proposal	16
10.3 Resource Consent Application	17
11.0 Nitrogen Offsetting	19
11.1 Wastewater Collection and Management - Nitrogen Offsetting	19
11.2 Possible Long Term Requirements for Nitrogen Offsetting	19
11.3 Measures for Nitrogen Offsetting	21
11.4 Funding Options	21

Summary

The purpose of this report is to support the further evaluation and response to submissions on Plan Change 2 (Pukehangi Heights) that relate to nutrient management for urban development in the Lake Rotorua Catchment.

The effect of discharges of nitrogen and phosphorus on water quality of the Rotorua Te Arawa Lakes is identified as a regionally significant water quality and land use policy issue.

Nitrogen enters the lake through natural and human-induced processes. Natural processes account for 18% of nitrogen to the lake and include rainfall, geothermal activity, and leaching from below forestry and native bush. Human-induced processes contribute the majority of nitrogen to the lake, including 70% from pastoral sources (dairy, sheep, beef, deer and grazed lifestyle blocks), 8% from sewage and septic tanks, and 4% from the urban area¹.

Nitrogen from natural processes cannot be reduced, so policy focuses on those from human activities.

Water quality objectives and policies for Lake Rotorua are included in the Regional Policy Statement which sets a limit on the total amount of nitrogen that enters the lake to enable enhancement of water quality.

An Integrated Framework has been developed to direct how reductions in nitrogen will be achieved, whether by regulated reductions, engineering solutions, incentives and gorse conversion.

Plan Change 10 to the Regional Plan addresses the reduction of discharges from pastoral farming. Plan Change 10 also contains policies that have direct relevance to nutrient management for urban land use, with a clear expectation that nitrogen losses from urban land use change (subdivision) are appropriately managed.

The District Plan recognises the reduction in nutrient losses as an issue of strategic importance for the Lake Rotorua catchment. Objectives and policies seek land use change which will result in significant reductions in nutrient losses.

This is clearly reflected in rural zone subdivision rules that enable additional lifestyle lots to be created as an incentive to reduce nutrient losses.

More general water quality criteria apply to all rural subdivision. Provisions in urban zones also require effects on water quality to be managed but to the general plan user this may not be apparent. District Plan provisions for water quality and nutrient management in urban areas could be made more effective and efficient with specific policies and assessment criteria.

An MoU developed in 2017 describes an agreed nutrient accounting approach to integrate the potential WWTP nitrogen mass discharge limit with catchment nitrogen accounting when rural land changes to urban use or when any existing discharges to Lake Rotorua become discharges to sewer. It is based on there being no net increase in nitrogen entering Lake Rotorua.

The MoU includes an intention to undertake a plan change to the Rotorua District Plan. This District Plan Change would impose a requirement on developers to transfer N from a parent Lot

¹ 4.1 Issue statement Section 32 Evaluation Report Lake Rotorua Nutrient Management Rules Plan Change 10

to offset losses from urban land use change and to establish a financial contribution regime to fund N offsets where a parent lot allocation is not available or is insufficient. Only limited progress has been made on a Plan Change and provision and funding of Nitrogen offsets.

The WWTP upgrade is in the planning stages and a resource consent application has been made. The consent conditions are likely to include a requirement for a Nitrogen Allocation Transfer Plan to be developed consistent with the MoU Nitrogen accounting approach.

Nitrogen offsetting is expected to be required in the following circumstances:

- In greenfield situations when rural land is subdivided for urban use and reticulated, but there is insufficient NDA to cover the N losses from the proposed development;
- In brownfield situations (residential, commercial and industrial) where land use is intensified;
- Where wastewater from other catchments is reticulated to the Rotorua WWTP.

To implement nitrogen offsetting, the long term need for N offsetting needs to be estimated, costs identified, and proposals included in the Infrastructure Strategy and Long Term Plan.

1.0 Purpose

The purpose of this report is to support the further evaluation and appropriate response to submissions on Plan Change 2 (Pukehangi Heights) that relate to nutrient management for urban development in the Lake Rotorua Catchment.

Proposed Plan Change 2 as notified relies on the operative District Plan water quality provisions and complementary implementation of the Regional Plan (Plan Change 10- Lake Rotorua Nutrient Management) and a Memorandum of Understanding on nitrogen accounting for the Rotorua Wastewater Treatment Plant discharge.

The submissions seek specific policies and rules for nutrient management in proposed Plan Change 2.

2.0 Scope

The report reviews relevant background of policy and strategy documents to inform consideration of the submissions on nutrient management from urban development.

3.0 Vision and Strategy for the Lakes of the Rotorua District

The area that the Strategy applies to is the Rotorua lakes catchment. The catchment area includes the rivers, streams, tributaries and land area that feed into the 12 lake catchments, and downstream effects (Kaituna River, Maketū Estuary and Tarawera River). The Strategy acknowledges the concept “Mai i nga maunga ki te moana”: from the mountains to the sea.

The Strategy connects all the partner agencies and guides how they will manage the Rotorua lakes catchment. Although water quality is a key consideration, the Strategy supports a holistic approach and considers how best to achieve all aspects of the vision.

4.0 Regional Policy Statement (RPS)

The effect of nutrient discharges from agricultural discharges of nitrogen and phosphorus on water quality of the Rotorua Te Arawa Lakes is identified as a regionally significant water quality and land use issue².

The primary objectives in the RPS are:

² RPS 2.9.3 Regionally significant water quality and land use issues

Regional Water and Land Plan Objective 11:

The water quality in the Rotorua lakes is maintained or improved to meet the Trophic Level Index of 4.2 for Lake Rotorua.

Objective 28

Enhance the water quality in the lakes of the Rotorua district and other catchments at risk

Related policies are:

Policy WL 2B: Defining catchments at risk

Policy WL 4B: Requiring consent for increased discharges in catchments at risk

Policy WL 5B: Allocating the capacity to assimilate contaminants

Policies of particular relevance to nutrient management issues for Plan Change 2 are:

Policy WL 3B: Establishing limits for contaminants entering catchments at risk

Establish limits for the total amount of specified contaminants that enter the receiving waters within a catchment at risk including:

- (a) Contaminants to be managed to avoid compromising public health and each catchment's ecology, mauri, fishability, swimmability and aesthetics;*
- (b) For the Rotorua Te Arawa Lakes the amount of nitrogen and phosphorus that can enter each lake in order to achieve its target trophic level index; and*
- (c) For Lake Rotorua the total amount of nitrogen that enters the lake shall not exceed 435 tonnes per annum.*

Policy WL 5B: Allocating the capacity to assimilate contaminants

Allocate among land use activities the capacity of Rotorua Te Arawa lakes and other water bodies in catchments at risk to assimilate contaminants within the limits established in accordance with Policy WL 3B having regard to the following principles and considerations:

- (a) Equity/Fairness, including intergenerational equity;*
- (b) Extent of the immediate impact;*
- (c) Public and private benefits and costs;*
- (d) Iwi land ownership and its status including any Crown obligation;*
- (e) Cultural values;*
- (f) Resource use efficiency;*
- (g) Existing land use;*
- (h) Existing on farm capital investment; and*
- (i) Ease of transfer of the allocation.*

In the context of Lake Rotorua, the Policy WL 5B explanation states that amount of nitrogen that the lake can assimilate without adverse effect comes from the "whole of the catchment" which must include rural and urban areas. How that amount of nitrogen is to be distributed within the catchment presents management issues requiring policy guidance. Consequently, allocation

decisions are required to be undertaken in consultation with the affected community, particularly landowners directly affected by the allocation.

Policy WL 6B: Managing the reduction of nutrient losses

Require, including by way of rules, the managed reduction of any nutrient losses that are in excess of the limits established under Policy WL 3B by ensuring that:

(a) Rural production land use activities minimise their loss of nutrients as far as is reasonably practicable by implementing on-farm best management practices;

(b) Any land use change that is required within the Rotorua Te Arawa lakes catchments to achieve the limits takes into account an equitable balancing of public and private costs and benefits; and

(c) No discharges shall be authorised beyond 2032 that result in the limit for Lake Rotorua being exceeded. A catchment intermediate target for the managed reduction of nitrogen loss is to be set to achieve 70% of the required reduction from 746 t/yr to 435 t/yr by 2022.

While Policy WL 6B refers to *Rural production land use activities* in subclause (a), the reduction targets in subclauses (b) and (c) are applicable to all activities within the catchment.

In catchments at risk, the RPS sets overall target levels to which specific contaminants are to be reduced, including nitrogen into Lake Rotorua, but does not dictate how the reduction is to be achieved³.

Under Method 2, the Regional Water and Land Plan (now called the “Natural Resources Regional Plan”) must manage the reduction of discharges until each at-risk catchment’s target level is met.

Method 3 refers to District Plan consents and plan change processes. The District Plan is required to give effect to the RPS.

5.0 Rotorua Te Arawa Lakes Programme Integrated Framework

The strategy to reduce the nitrogen load to Lake Rotorua is to be achieved through an “Integrated Framework” of:

- regulated land use nitrogen reductions (Nitrogen Discharge Allocations);
- incentives; and
- gorse conversion.

The Integrated Framework was developed in 2013 after the results of analysis of a ‘Rules Only’ approach.

The Integrated Framework is supported by engineering solutions that are designed to remove 50 tonnes of nitrogen/year from entering the lake⁴.

³ RPS 2.9.1 Water quality and land use

⁴ 1.4 Lake Rotorua water quality: Rules as part of the solution, Section 32 Evaluation: Lake Rotorua Nutrient Management Rules Plan Change 10

6.0 Regional Natural Resources Plan – Plan Change 10 - Lake Rotorua Nutrient Management⁵

Proposed policies, rules and methods in Plan Change 10 regulate nutrient losses in the Lake Rotorua groundwater catchment, centred on the reduction of discharges from pastoral farming.

Policy LR P1 sets the overall policy approach:

“Reduce nitrogen losses from farming activity to Lake Rotorua to assist to achieve the 2032 435 tonne sustainable annual nitrogen load for Lake Rotorua as required by Policy WL 3B(c) of the Regional Policy Statement while providing an adaptive management approach.”

Policy LR P3 also recognises the 435 tonne sustainable annual nitrogen load for Lake Rotorua from the operative Regional Policy Statement Policy WL 3B(c).

While much of Plan Change 10 addresses the reduction of discharges from pastoral farming the following policies on “Implementation Matters” have direct relevance to urban land use, and urbanisation of rural land:

LR P18

Acknowledge the 435 tonne sustainable annual nitrogen load for Lake Rotorua set in Policy WL 3B of the Regional Policy Statement provides for nitrogen losses from both rural and urban land located within the Lake Rotorua groundwater catchment

LR P19

Acknowledge the increased demand on infrastructure located within the Lake Rotorua Groundwater Catchment resulting from land use change as a consequence of urban growth (and the consequential shift of losses between sectors) and reticulation of communities.

Related Method LR M5 (g) undertakes that the Regional Council will:

“implement an accounting methodology for the shift in nitrogen losses between rural and urban land uses (including for the purposes of recognising changes to wastewater discharge loads). The accounting methodology should recognise that:

- 2001-04 is the baseline for accounting purposes*
- Reticulation should not result in a net increase in nitrogen discharge to Lake Rotorua*
- Land use change (subdivision) requires a nitrogen allocation*
- Offsets within the groundwater catchment may provide opportunities for the reticulation of out-of-catchment communities, or urban infrastructure development.”*

⁵ <https://cdn.boprc.govt.nz/media/657170/appendix-4-panel-recommendations-on-plan-change-10-clean-copy-version-dated-29-june-2017-pdf.pdf>

7.0 Non-Regulatory District Strategies

7.1 Vision 2030 The Rotorua Way (2016)

Vision 2030 establishes seven 2030 goals which includes *Tiakina to Taiao Enhanced environment*⁶. Crater lakes are seen as a key strength within an active volcanic environment.

7.2 Rotorua Sustainable Living Strategy

The Sustainable Living Strategy is one of a suite of non-regulatory strategies based on Rotorua 2030 goals and the portfolios set up to address them. Water quality is the long term outcome sought from sustainable management of land and water⁶.

The Strategy identifies the environmental quality of the 14 natural lakes in Rotorua as a key issue. Many of the Rotorua Te Arawa Lakes have undergone significant change over the long-term and continue to be vulnerable to further changes from invasive plants and water quality deterioration. Current measures to protect future lake quality include nitrogen rules, land use change proposals and incentives.

The Rotorua wastewater treatment system is identified as “*one of the pre-eminent nutrient plants in the world*” with an aim to further improve the end product and to move the discharge location out of the Whakarewarewa Forest.

7.3 Rotorua Spatial Plan 2018-2048

The Rotorua Spatial Plan is a non-regulatory policy instrument that helps plan how the city and district will grow, develop and change over a time horizon of 30+ years to deliver on Rotorua’s 2030 vision and goals⁷. The spatial plan provides the blueprint for how Rotorua should look in future, where development should occur, what type and how much⁸.

The Rotorua Spatial Plan recognises water quality of the Districts lakes as the “*top environmental priority*”⁹.

The partnership between Te Arawa Lakes Trust (TALT) and the regional and local council to improve lake water quality and to promote other environmental action to ensure the sustainable use and improvement in water quality is specifically recognised in the Spatial Plan¹⁰.

The Spatial Plan feedback process confirmed there is significant support for highlighting the importance of the lakes and the improvement of water quality and the opportunity for recreational use¹¹.

⁶ Objective 4

⁷ Vision 2030 The Rotorua Way

⁸ Mayors Message

⁹ Objective Three: Enhance our environment

¹⁰ Objective Four: Support Iwi Aspirations

¹¹ Your Feedback: What you said.

The planned upgrade of Rotorua's wastewater treatment plant will provide sufficient capacity for the 17,000 additional homes anticipated within the Lake Rotorua caldera with the planning horizon of the Spatial Plan¹².

7.4 30 Year Infrastructure Strategy 2018-2048

The infrastructure Strategy (IS) sets the strategic direction for Rotorua Lakes Council's (RLC) management of its infrastructure assets, as required in the Local Government Act (LGA) Section 101B.

The IS identifies growth projects to meet demand on infrastructure that is primarily derived from population and tourism growth, based on Spatial Plan growth projections.

Additional treatment capacity enhancement projects are incorporated in the IS that includes the Rotorua Wastewater Treatment Plant and several reticulation schemes. The Infrastructure Strategy assumed there would be transfers of N associated with the MoU¹³.

The growth enabling cost for these enhancement projects over 30 years is estimated at \$3.6M.

7.5 Long Term Plan 2018-2028

7.5.1 LTP Goals

The Long Term Plan takes forward Vision 2030 and the Spatial Plan to implementation, including goal seven:

"Enhanced Environment Tiakina to taiao...we are known globally for our clean, natural environment, air quality and healthy lakes"

The focus of the Long-term Plan for environmental sustainability is lakes water quality and waste management.

7.5.2 Water Quality Enhancement Actions

Council is committed to improving water quality in lakes in partnership with Te Arawa Lakes Trust and Bay of Plenty Regional Council through the Rotorua Te Arawa Lakes Programme. Council contributes to this through the provision of reticulated sewerage schemes and disposal methods to protect public health and improve water quality while respecting traditional cultural values and meeting broader community expectations.

Committed projects include the upgrade to the central wastewater treatment plant and the East Rotoiti/Rotomā/Rotoehu sewerage scheme¹⁴.

The planned upgrading of the central wastewater treatment plant to a higher level of treatment will significantly reduce nitrogen, phosphorus and pathogens entering streams that feed into Lake

¹² Objective Seven: Building Supporting Infrastructure

¹³ Pers Comm Alison Lowe Email 3 June 2020

¹⁴ Environmental sustainability, p23

Rotorua, improving the environment and lake quality. The increased capacity of the treatment plant will also cater for demand even during heavy rain events, thus mitigating overflows.¹⁵.

The LTP recognises the WWTP project is strongly supported by the community¹⁶.

Capital expenditure of \$35M is proposed for “Rotorua Wastewater Treatment Plant Enhancements”¹⁷.

The Long Term Plan recognises that growth in accordance with the draft Spatial Plan will require the ‘water supply’¹⁸ network to be extended and will increase demand.

Projects identified include seismic network upgrades and miscellaneous network upgrades. Capital expenditure of \$3.6M is proposed for these projects over 30 years.

The LTP does not identify a growth component for the \$35M WWTP enhancements even though it is described as providing capacity for growth.

Of the planned 30 year capital expenditure of \$145M for sewage and sewerage, less than 1% is attributed to meeting additional demand, being almost fully attributed to improving levels of service and replacing assets¹⁹.

7.5.3 Funding for Lake Water Quality Enhancement

Wastewater Treatment capital costs, including the growth component, are funded by subsidies and targeted rates (funded debt).

Council also has a targeted rate for “lakes enhancement” as a fixed amount of \$17.58 per rating unit on all rateable land in the district, excluding rating units within the Waikato region. The rate is to “*contribute to lakes enhancement by way of improving water quality*”. No other detail is provided on lakes enhancement projects. The amount to be collected for 2018/19 is \$470,000.

7.5.4 Development Contributions Policy

The Long Term Plan proposes the development of a Development Contributions Policy to ensure the costs of providing the growth component of infrastructure is repaid by those who benefit from it or create it²⁰. The LTP forecasts development contributions providing a capital funding source from 2021 onwards.

Initial ideas for the DC framework include:

- Policy to apply only to projects where growth requires expansion of water supplies, wastewater systems and stormwater;
- Policy to apply only to new developments (for example for new subdivisions) and exclude subdividing an existing property as capacity exists for some infill;

¹⁵ 6.3 Wastewater – Public Health and Environment

¹⁶ 6.3 Wastewater - Asset Resilience

¹⁷ Council's major projects, p42

¹⁸ Assumed to be an error – should be “wastewater network”

¹⁹ Capital Spend: Sewerage + Sewage

²⁰ Framework for a Development Contributions Policy

- Detail at what stage the contribution is charged. Is it charged at the time subdivision consent is granted or at the time a building is completed? (Developer pays or the owner of a new house within a subdivision pays?);
- The contribution could be approximately \$4,000 per property.

7.6 Annual Plan 2020/2021

An Annual Plan is only required to include significant or material differences from the content of the long-term plan for the financial year to which the proposed annual plan relates.

The Annual Plan maintains the direction set in the LTP, while recognising and focusing on cushioning the impact of COVID-19 and implement an economic recovery strategy.

The Council submitted a package of shovel ready projects to support the construction industry and help provide economic stimulus. The package includes the Rotorua Urban WWTP upgrade as a significant upgrade and providing growth capacity for Rotorua city and lake water quality.

8.0 Operative District Plan

8.1.1 Issues, Objectives and Policies

Water quality²¹, and more specifically nutrient discharges to lakes, is identified as one of the Matters of National and Strategic Importance in the District Plan.

“The degradation of water quality within the Rotorua waterbodies and the restoration, protection and enhancement of the health and well-being of the Rotorua waterbodies, the Waikato River and their margins is an important issue for the district to address. The District Plan has a role in this through managing the effects of land use. This role is complementary to the regional councils’ role of controlling nutrient discharge from land use activities and undertaking remedial works. Through the implementation of each of these roles, subsequent biodiversity, habitat and ecological functions of the waterbodies will also be maintained, helping to enhance the natural character managed under Part 2 – Section 6 Matters.”

...

Te Arawa Lakes Trust, Rotorua District Council, and the Bay of Plenty Regional Council work collaboratively to ensure the on-going management, restoration, and rehabilitation of the health of the Rotorua waterbodies. Joint Management Agreements have also been established under the Waikato Tainui Raupatu Claims (Waikato River) Settlement Act 2010. These cover the Waikato River and intend to implement the Waikato River Vision and Strategy (Te Ture Whaimana o Te Awa o Waikato). Similar mechanisms are being developed for the Kaituna River.

Our district’s lakes, rivers and streams are of great cultural, historic and heritage value. Rotorua District Council, Bay of Plenty Regional Council, and Te Arawa Lakes Trust are working with other partners on a range of initiatives such as the Oturoa Agreement to mitigate the effects of nutrient runoff from pastoral farming, sewage leachate from

²¹ 1.2 Key Environmental Issues 1.2.1 Water Quality and the Amenity of Lakeside Environments

residential areas and other inputs from the commercial and industrial sectors. There is a focus on the Lake Rotorua Catchment.

The District Plan has a role in contributing to the enhancement of water quality through managing the effects of land use and enabling land use change.

Water quality is recognised as a “key environmental issue” in the subdivision chapter of the District Plan²².

“Primary agriculture” is identified as a significant source of nutrient discharges that affect the lakes. While controlling discharge to water is recognised primarily as a regional council function the district plan controls land use and subdivision. Incentives to encourage land use change from high nutrient output agriculture to lower nutrient output activities are encouraged by District Plan objectives and policies. Additional rural subdivision rights are given where it can be demonstrated there will be land use change that will result in sustainable positive effects on lake water quality.

Water quality is recognised as a “key environmental issue” when considering the location and design of infrastructure²³.

District Plan objectives and policies that give specific effect to the District Plan strategy of reducing nutrient losses in the Lake Rotorua catchment are:

Objective 1.3.1

The enhancement of water quality and management of Rotorua’s water bodies and the lake and riverside environments to improve the environmental, cultural, social and economic well-being of Rotorua.

Policy 1.3.1.2

Enable the continued use and development within lake and river side settlements whilst maintaining amenity values and enhancing water quality of water bodies and their margins.

Policy 1.3.1.3

Manage subdivision, use and development where the proposal will contribute to the improvement of lake water quality within Lake Rotorua.

Objective 13.3.1

Subdivision enables definitive land use change which results in significant reductions in nutrient losses, thereby contributing to water quality improvements in the lakes, rivers, streams, wetlands and other water bodies within the District.

Policy 13.3.1.1

Provide additional subdivision opportunities to incentivise definitive land use changes which result in significant reductions in nutrient losses in the Lake Rotorua groundwater catchment²⁴.

Objective 13.3.2

Subdivision layout and design contributes to improvements in water quality through the management of riparian margins, stormwater treatment, and wastewater treatment.

²² 13.2.1 Subdivision and Water Quality

²³ 15.2 Key Environmental Issue 15.2.1 Location and Design of Infrastructure

²⁴ Policy 13.3.1.1 is effectively repeated in Policy 13.3.1.3

Policy 13.3.2.1

Ensure subdivision design avoids remedies or mitigates the adverse cumulative effects on water quality from storm water and on site wastewater treatment systems including through the use of low impact design.

Other objectives and policies in other District Plan chapter that are generally relevant to the strategy of reducing nutrient losses in the Lake Rotorua catchment are:

Objective 13.3.5

Adequate infrastructure and services are provided to each site to accommodate the potential development.

Policy 13.3.5.1

Require that connections to the public reticulated water supply, stormwater and sanitary sewerage systems are made at time of subdivision wherever a reticulated system is available.

Objective 13.3.8

Maintain and enhance the district's productive capacity of rural land, amenity, biodiversity, landscape, ecological values and character through subdivision and development.

Policy 13.3.8.1

Subdivision layout and design retains natural landforms and processes on the site and surrounding land and avoids or mitigates alterations to landform, waterways and ecosystems.

Policy 13.3.8.6

Subdivision and subsequent development minimise adverse effects on vegetation that contribute to amenity and enhance the landscape of the surrounding area by promoting the revegetation of areas with appropriate indigenous vegetation where positive benefits can be achieved for the purpose of:

...

- *Assisting in improving the quality of water by reducing nutrients that eventually enter the streams, rivers, wetlands and lakes*

...

Objective 13.3.15

Subdivision occurs in a manner that integrates safely and efficiently with existing strategic infrastructure.

Policy 13.3.15.1

Avoid subdivision which results in significant adverse effects on established strategic infrastructure.

Objective 15.3.1

Infrastructure that provides for the economic, cultural, social and environmental wellbeing of the Rotorua district, the region and New Zealand.

Policy 15.3.1.1

Enable the research, exploration, development, operation, maintenance and upgrading of infrastructure that avoid, remedy or mitigate adverse effects on the environment.

Policy 15.3.1.3

Where adverse environmental effects cannot be avoided, remedied or mitigated, regard shall be given to offsetting measures and/or environmental compensation to benefit the local environment and community.

Improved water and habitat, quality of streams, rivers and lakes and their associated ecosystems is an anticipated strategic outcome of the District Plan²⁵.

Several key environmental outcomes²⁶ for subdivision are directly relevant to reducing nutrient losses in the Lake Rotorua catchment:

...

2. An increase in subdivisions that supports the improvement of water quality by:

- a. Decreasing the area of vegetation that is removed in association with subdivisions.*
- b. Reducing nutrient losses from rural land.*
- c. Increasing the area retired from grazing.*
- d. Increasing the area of land that is revegetated.*

...

4. An increase of the area of land that has undergone a permanent definitive land use change to achieve significant reductions in nutrient losses.

8.1.2 Rules

Objectives and policies that seek reductions in nutrient losses from rural land are specifically implemented through Rule 13.10.1.19. This rule allows subdivision of an additional lifestyle lot in the Rural 1 Zone within the Lake Rotorua catchment where a “*permanent definitive land use change that results in a significant reduction in nutrient losses has been secured*”. The number of additional lots is determined by the level of nutrient loss reduction achieved by the land use change. The land use change must be secured by a legal mechanism with permanent effect²⁷.

There is a general requirement on all rural subdivisions that consideration be given to existing vegetation, retirement of land adjoining water courses from grazing and appropriate new planting of indigenous species to mitigate the effects of potential development for the purposes of “*water quality improvement*”²⁸.

The District Plan policies and rules relating to water quality and nutrient management in urban areas are relatively general.

²⁵ 1.4 Anticipated Environmental Outcomes for Matters of National and Strategic Importance

²⁶ 13.4 Anticipated Environmental Outcomes for Subdivision

²⁷ 13.10.3.4 Rural 1 - Working Rural Zone

²⁸ 13.10.6.4 Subdivision Provisions Applicable to all Rural Zones

The Future Growth Zone (which applies over part of the Pukehangi Height Development area) has no specific water quality provisions and relies on the relevant urban zone provisions following rezoning.

The urban zone subdivision performance standards²⁹ include a general requirement to provide:

“a. An adequate system for the site specific collection and disposal of stormwater from the proposed roads, private ways, access ways, and reserves and from all sites and buildings within the subdivision.

b. Adequate disposal of sewage from each site and building within the subdivision.”

The “adequacy” of infrastructure is determined by the Councils Civil Engineering Code and the requirement for the Council for any vested assets to comply with wastewater and stormwater discharge consent conditions that it holds and the Water Services and Trade waste bylaws.

The urban zone subdivision performance standards cross reference the performance standards of the relevant zone³⁰³¹³²³³. The urban zones have a general assessment criteria:

“The extent to which the proposal will avoid, remedy, or mitigate effects on water quality.”³⁴³⁵³⁶³⁷.

When read in the context of the strategic objectives and policies of water quality enhancement, there is scope to address nutrient management issues for urban development proposals under the operative District Plan. However, to the general plan user this may not be apparent. District Plan provisions for water quality and nutrient management in urban areas could be made more effective and efficient with specific policies and assessment criteria.

8.1.3 Development Contributions

The Council may include a condition of resource consent requiring that a financial contribution be made. A financial contribution condition can only be imposed in accordance with the purposes specified in the plan. The level of contribution is determined in the manner described in the plan.

The District Plan sets out an intention that the council will require a financial contribution where it has identified the need to upgrade “network infrastructure” as a direct result of additional loading on infrastructure through development³⁸. The outcome sought is to increase the capacity of infrastructure proportionate to growth and development³⁹⁴⁰.

The relevant objectives and policies are:

“Objective 14.3.2

²⁹ 13.13.3 Infrastructure Performance Standards

³⁰ 13.5.2.2 Site Design Performance Standards: Residential Zones

³¹ 13.6.2.2 Site Design Performance Standards: City Centre Zones

³² 13.7.2 Site Design Performance Standards: Commercial Zones

³³ 13.8.2 Site Design Performance Standards: Industrial Zones

³⁴ 4.9.1 General Assessment Criteria – Residential Zones

³⁵ 5.9.1 General Assessment Criteria – City Centre Zones

³⁶ 6.9.1 General Assessment Criteria – Commercial Zones

³⁷ 7.9.1 General Assessment Criteria – Industrial Zones

³⁸ Financial Contributions 14.1 Introduction

³⁹ 14.4 Environmental Outcomes

⁴⁰ 14.2 Key Environmental Issues

Subdivision and development contribute to the upgrade of infrastructure necessary to serve the activity.

Policy 14.3.2.1

Require a financial contribution where the effects of subdivision and development impact on the capacity of stormwater, wastewater, water supply and road infrastructure.”

The relevant rules are:

“14.5.1 Financial Contribution at the Time of Subdivision

Financial contributions, where required, will be included as a condition of consent at the time of granting resource consent.

The financial contribution will be taken for the ... purpose of infrastructure upgrades where the effect on the network results directly from the subdivision application

14.5.3 Financial Contributions for Infrastructure

...where it is demonstrated that the servicing needs of a subdivision or land use cannot be met, and additional impacts on public infrastructure will result, a financial contribution ... will be taken for infrastructure purposes by way of a condition of consent...

...

The financial contribution for infrastructure purposes shall be the value of the actual costs of the necessary works in order for the effects on the infrastructure to be mitigated.”

The operative District Plan provides scope to impose a financial contribution condition for the purpose of meeting the cost of the additional impact of development on wastewater treatment infrastructure.

“Network infrastructure” is a broad concept. It is not defined in the District Plan. Under the District Plan, “infrastructure” includes “*stormwater, wastewater, water supply and road infrastructure*”. Under the Local Government Act 2002 it means “*the provision of roads and other transport, water, wastewater, and stormwater collection and management*”.

Wastewater collection and management could reasonably include the mitigation of N impacts on lake water quality through both the WWTP and through the purchase of pastoral land to offset N.

In order to use the financial contributions provisions of the City Plan for collecting revenue for N offsetting is that the issue has not been addressed under the Council’s LGA Funding and Revenue Policy. Therefore, there is no current basis for assessing the value of the actual costs of the necessary works in order for the effects on infrastructure to be mitigated.

8.1.4 Summary

The District Plan recognises the reduction in nutrient losses as an issue of strategic importance for the Lake Rotorua catchment. Objectives and policies seek land use change which will result in significant reductions in nutrient losses.

This is clearly reflected in rural zone subdivision rules that enable additional lifestyle lots to be created as an incentive to reduce nutrient losses. More general water quality criteria apply to all rural subdivision.

The District Plan has no provisions that specifically address the nutrient loss implications on water quality for the urbanisation of rural land. However, the strategic objectives and policies of water

quality enhancement and managing subdivision, use and development to achieve improvement of lake water quality within Lake Rotorua⁴¹ are generally relevant and appropriate to the consideration of a plan change proposing urbanisation of rural land.

Rules for land use and subdivision in urban zones do require effects on water quality to be managed and, although less clear than those for rural areas, there is scope to address nutrient management issues for urban development. However, to the general plan user this may not be apparent.

District Plan provisions for water quality and nutrient management in urban areas could be made more effective and efficient with specific policies and assessment criteria.

The operative District Plan provides scope to impose a financial contribution condition for the purpose of meeting the cost of the additional impact of development on wastewater treatment infrastructure, including the cost of N offsetting. However, there first needs to be a policy basis for assessing the value of the actual costs for a fair and reasonable Development Contribution to be imposed.

9.0 Memorandum of Understanding - Nitrogen Accounting Approach for Rotorua Wastewater Treatment Plant Discharge (MoU)⁴²

The MoU is between Bay of Plenty Regional Council, Rotorua Lakes Council and the Te Arawa Lakes Trust who are the partners that make up the Rotorua Te Arawa Lakes Programme⁴³. The MoU was instigated in the settlement of submissions on Plan Change 10.

The catalyst for the MOU was a need to signal to owners of future urban land that nitrogen should be held for the purpose of transfer to the WWTP, rather than being sold to the Nitrogen Incentive Fund:⁴⁴.

The MoU is described as an “*operational policy*” but on a matter that is of “*significance to the Rotorua Te Arawa Lakes community*”. For this reason, it has been created as a formalised position between the three partners.

The MoU describes the agreed nutrient accounting approach to integrate the potential WWTP nitrogen mass discharge limit with catchment nitrogen accounting when rural land changes to urban use or when any existing discharges to Lake Rotorua become discharges to sewer. It is based on there being no net increase in nitrogen entering Lake Rotorua.

The MoU acknowledges that there are sewage-derived nutrient discharge loads via the WWTP discharge from the rural area following expansion of sewerage reticulation into the rural area. The accounting approach enables increasing gross nitrogen loads from the WWTP as a result of urban

⁴¹ Water Quality and the Amenity of Lakeside Environments Objective 1.3.1; Policy 1.3.1.2; Policy 1.3.1.3

⁴² Signed 2017

⁴³ <http://www.rotorualakes.co.nz/vdb/document/533>

⁴⁴

[https://www.rotorualakes.co.nz/incentives#:~:text=The%20scheme%20is%20a%20voluntary,the%20list%20of%20approved%20consultants\).](https://www.rotorualakes.co.nz/incentives#:~:text=The%20scheme%20is%20a%20voluntary,the%20list%20of%20approved%20consultants).)

expansion while maintaining the net 30 tonne limit and therefore not compromising the RPS 435 tonnes nitrogen sustainable load target.

The Nitrogen accounting basis is generally as follows:

- i. Land in the Rural Area has a Nitrogen Discharge Allocation (NDA) based on rural land use activity. Subsequent urban expansion into the Rural Area will result in the rural land use discharges being replaced by sewage-derived nitrogen losses via the WWTP and urban land use background discharges.
- ii. If the sewage-derived nitrogen losses via the WWTP and urban land use discharges are equal or less than the NDA there will be no increase in nitrogen load to Lake Rotorua
- iii. If the sewage derived nitrogen losses via the WWTP and urban land use discharges are greater than the NDA an offset or purchase will be required to ensure no increase in nitrogen load to the lake.
- iv. PC10 nitrogen accounting allows for transfers to and from the parent block that is being subdivided.

The MoU provides the input figures to be used when calculating the minimum nitrogen required at the time of subdivision for nutrient losses from sewage, roads, other impermeable surfaces (e.g. driveways, houses), gardens, grassed areas, reserves and retired areas.

The calculation of the minimum nitrogen requirement for urban subdivision is compared with the property/farming enterprise NDA to ensure the overall nitrogen load to Lake Rotorua is not increased.

The Implementation provisions of the MoU record that:

- The MoU partners will jointly determine the processes for: allocation of NDA at time of subdivision; process for accounting for the nitrogen losses at the WWTP; and process for accounting for other loads to sewer;
- RLC will provide an advice note on Rural Area LIMs and refer all subdivisions to BOPRC for assessment;
- RLC will register a consent notice requiring the applicant to obtain BOPRC's approval of the nitrogen allocations for the new parcels created through the subdivision consent process;
- RLC will advise BOPRC when a subdivision consent has been enacted to allow BOPRC to update and record the revised nitrogen allocations;
- RLC will consider a plan change to its District Plan to give effect to this MOU.

The MoU has a review provision to ensure that the accounting methodology remains accurate and robust.

The District Plan Change referred to in the last bullet point was primarily intended to impose a requirement on developers to transfer N from a parent Lot to offset losses from urban land use change, and to establish a financial contribution regime to fund N offsets.

A review of the MoU is currently in progress. The review seeks to address several issues including:

- Incorporating an attenuation factor⁴⁵ into the N loss calculations that recognises that pastoral losses are attenuated and WWTP losses are not;
- Basing N loss calculations on an assumption that each new residential lot will contain one household unit, with no need to consider the potential for additional houses on each lot at the time of subdivision.
- The process to resolve any difference between the nitrogen that is available and the nitrogen that is required for the subdivision to address the sewage-derived nitrogen losses via the WWTP;
- Clarification of the ownership of nitrogen when rural land changes to urban use. The preference is that N losses should remain on the land being developed and be recognised against the WWTP discharge.

Where a shortfall in available nitrogen is identified RLC has the discretion in how to respond, for example, by implementing financial contributions or accepting the transfer of a reduced amount of nitrogen.

This MoU will determine how future additional sewage discharges from additional development within the subdivision will be managed. For example, RLC may decide to create and operate an offset fund and require a contribution to be paid at time of subdivision and/or building consent for the N loss requirements that exceed the one HUE per lot. Contributions could be used by Council to reduce N by purchasing pastoral land for retirement or to purchase N from rural property owners to provide capacity for future WWTP connections.

10.0 Rotorua Wastewater Treatment Plant Upgrade (WWTP)

10.1 Background

Rotorua Lakes Council and Central North Island Iwi Limited (CNI) signed a deed in 2014 to end treated effluent disposal in Whakarewarewa Forest by December 2019, a system which is considered unsustainable. Options were explored by a community-led steering committee which included Te Arawa iwi and hapū, technical advisors, Rotorua Lakes Council and Bay of Plenty Regional Council representatives and a cultural assessment subcommittee⁴⁶.

The proposed alternative includes an upgraded plant which will incorporate much higher treatment capacity to future proof wastewater management needs against forecasted growth and a new land contact bed to address cultural aspects and concerns regarding the proposed discharge of recovered water directly to the environment via Lake Rotorua.

10.2 Proposal

The proposed upgrade will increase total capacity from 19.7M l/day to 70M l/day.

⁴⁵ Decrease in nitrogen leaving the root zone by different processes in the subsurface environment

⁴⁶ 2019/2020 Annual Plan p 20

The proposed upgrade will increase the removal of nitrogen and, coupled with the management of N allocations under the MoU, avoid any increase in N entering the lake above the current limit of 30T per year.

The Council's latest estimate for the upgrade of the plant and disposal is between \$40m and \$45m.

10.3 Resource Consent Application

A resource consent application for the WWTP upgrade has been lodged, publicly notified⁴⁷, and submissions made for direct referral to the Environment Court for a decision.

The application summary refers to the MoU in the following terms:

“The Preferred Scheme will not increase nutrient inputs into Lake Rotorua above those provided for in the BOPRC’s ‘allocations’. An annual mass load limit for total nitrogen (TN) and total phosphorus (TP) allowed to be discharged is proposed, with the TN limit allowed to be increased as rural land is developed and connected to the WWTP – a transfer of TN allocation from the rural land use to the WWTP is proposed which aligns with the Memorandum of Understanding (MoU) entered into between the BOPRC, the RLC, and Te Arawa Lakes Trust.”⁴⁸

The Project Background sets out the historical context for the application, including recognition of the MoU as an “important matter”⁴⁹.

“Upper Limits on Nutrients for Consenting Purposes” for the Preferred Scheme are referred to in the Assessment of Environmental Effects. The MoU is referred to as the mechanism that manages a “dynamic “upper limit on the mass of TN discharged. The MoU outlines how nitrogen allocations are to be dealt with as rural land is developed and reticulated into the future. The MoU recognises transfers of TN from rural land to the WWTP do not lead to an increase in the TN load to Lake Rotorua.

The application proposes that:

“...the dynamic wastewater-derived target becomes an “upper limit” on the consented annual mass of TN discharged. This is the mass that can be discharged without the sewage-derived load impacting the RPS’s 435 t/yr sustainable load of TN to the lake”⁵⁰.

The MoU is therefore an intrinsic part of the WWTP upgrade proposal.

Volunteered consent conditions are included in the application. The discussion on the volunteered Nutrient Limit conditions refers to the MoU⁵¹:

“The MoU outlines how TN allowances from land within the Rural Area that is subdivided (with the built development being connected to the wastewater treatment plant) is to be transferred to this resource consent – meaning that the annual mass of TN authorised to be discharged can increase over time without impacting the RPS’s 435 tN/yr load limit for Lake Rotorua. The general principles of the MoU are included in these conditions and will be further established in a future ‘Nitrogen Allowance Transfer Plan’.”

⁴⁷ September 2018

⁴⁸ Rotorua WWTP AEE 2018-08-20, Executive Summary Page ii

⁴⁹ Ibid 2.2 Overall Background, p3

⁵⁰ Ibid 4.7 Upper Limits on Nutrients for Consenting Purposes p44

⁵¹ 14.2.2.2 Conditions 27 to 42 – Nutrient Limits

The relevant volunteered conditions are set out in Appendix K of the application:

35. *The annual mass load of total nitrogen discharged to the Land Contact Bed, based on a rolling 52 week period, shall not exceed 32.4 tonnes or any greater mass as calculated in accordance with the latest certified Nitrogen Allocation Transfer Plan required by Condition 36.*

Advice Note: The wastewater treatment plant will, over the term of this consent, receive additional wastewater and therefore total nitrogen as the wastewater reticulation system is expanded into the Rural Area and where urban infill occurs. The Nitrogen Allocation Transfer Plan required by Condition 36 outlines how total nitrogen allowances from land within the Rural Area that is subdivided (with the built development being connected to the wastewater treatment plant) is to be transferred to this resource consent – meaning that the annual mass of total nitrogen authorised to be discharged can increase over time. The Nitrogen Allocation Transfer Plan is to be based on a Memorandum of Understanding (MoU) entitled ‘Nitrogen Accounting Approach for Rotorua Wastewater Treatment Plant Discharge’ signed by the Rotorua Lakes Council, the Bay of Plenty Regional Council, and the Te Arawa Lakes Trust. The Council has calculated that the wastewater-derived total nitrogen over the 2001-2004 baseline period to Lake Rotorua was 30 tonnes per year and, accounting for changes that have already occurred since this baseline period, the MoU states that a discharge limit of 32.4 tonnes per year represents no increase in total nitrogen load to the lake.

36. *The Consent Holder shall, within six (6) months of the date of commencement of these consents, submit a Nitrogen Allocation Transfer Plan (NATP) to the Council for certification. The purpose of the NATP is to give effect to Condition 37. The Council's certification shall be limited to confirming that the NATP:*

- (a) Complies with all conditions of this resource consent; and*
- (b) Contains provisions that are enforceable.*

37. *The objective of the NATP required by Condition 36 is to provide detailed information on how total nitrogen allocations from Rural Land that is to be subdivided and connected to the wastewater treatment plant will be calculated and transferred to the annual mass load limit specified in Condition 35. For the purposes of this condition ‘Rural Land’ is defined as all land within the Lake Rotorua Groundwater Catchment that is not Urban Reticulated Area under the Rotorua District Plan.*

The NATP shall be based on the purpose, principles, and approach of the Memorandum of Understanding (MoU) entitled ‘Nitrogen Accounting Approach for Rotorua Wastewater Treatment Plant Discharge’ signed by the Rotorua Lakes Council, the Bay of Plenty Regional Council, and the Te Arawa Lakes Trust.

38. *The Consent Holder may amend the NATP at any time. Any amendments to the NATP shall be forwarded to the Council for certification in accordance with Condition 36.*

The final form of conditions will not be known until the decision is made by the Environment Court. However, as offered conditions, the likelihood is that they will be confirmed if the consent is granted.

The application is currently on hold awaiting the outcome of engagement with the community on the preferred Water Restoration Land Contact Bed and the treated wastewater release point option, which have been designed using Māori knowledge. (Matauranga Māori)⁵². The WWTP application deals only with the plant itself and not the land contact bed and discharge point

11.0 Nitrogen Offsetting

11.1 Wastewater Collection and Management - Nitrogen Offsetting

Nitrogen offsetting can ensure that the Rotorua WWTP can continue to operate in the long term within its consent discharge quality limits as future urban growth and development takes place. Nitrogen offsetting is therefore an essential component of the wastewater collection and management infrastructure for the Rotorua urban area.

Nitrogen offsetting is expected to be required in the following circumstances:

- In greenfield situations when rural land is subdivided for urban use and reticulated, but there is insufficient NDA to cover the N losses from the proposed development;
- In brownfield situations (residential, commercial and industrial) where land use is intensified;
- Where wastewater from other catchments is reticulated to the Rotorua WWTP.

Decisions on funding N offsetting will require consideration of options under the funding and financial policy requirements of the LGA⁵³. This includes consultation which will require a Special Consultative Procedure as part of the LTP/AP or, potentially, as a standalone process.

For all options, funding requirements will need to be forecast taking into account estimates of:

- the scale of requirement for N offsets from future land uses (infill and greenfield lots and other land use intensification that has no NDA); and
- the costs to meet this demand (e.g. costs of nitrogen NDA purchase or costs of land purchase, destocking/retirement, and associated financing).

N offsetting is not currently referenced in the Councils Infrastructure Strategy. This is a relatively significant infrastructure issue for the Council over the period covered by the strategy⁵⁴.

11.2 Possible Long Term Requirements for Nitrogen Offsetting

The estimation of long term need for N offsetting requires consideration of the number of new household units and non-residential “household unit equivalents” (HUE), where these households might be located, and the extent to which a parent lot or site has NDA available to transfer to the WWTP.

⁵² <https://letstalk.rotorualakescouncil.nz/rotorua-wastewater-treatment-plant>

⁵³ 102 Funding and financial policies and 103 Revenue and financing policy

⁵⁴ 101B Infrastructure strategy

11.2.1 Residential Activities

The following long term growth in household numbers is projected for Rotorua District⁵⁵:

- Baseline 8,000
- Low 3,300
- High 14,000

For long term planning purposes, it is appropriate to adopt the higher of these projections. This will ensure that sufficient capacity is available to accommodate growth if this is required.

Spatial Plan growth projections include an assumption that 60% of future residential demand can be accommodated within existing residential zones (brownfield) and a balanced brownfield / greenfield development strategy⁵⁶. This has been the actual development typology since 2017.

On this basis, over the next 30 years the following development typology for the high growth projection could be expected:

- Greenfield 5,600 households/dwellings
- Brownfield 8,400 households/dwellings

For Greenfield development, a significant portion of new household units are expected to have a parent lot with NDA available to transfer to the WWTP. As an example, Pukehangi Heights Development Area is provisionally estimated to have sufficient NDA available to transfer to the WWTP for approximately 80% of the future residential lots at its highest likely yield. The remaining 20% are expected to require an N offset.

For Brownfield development, all new household units are expected to require an N offset as there is unlikely to be a parent lot with NDA available to transfer to the WWTP. The same applies to out of catchment residential development reticulated to the WWTP.

Under the above assumptions, 4,500 households will have NDA available to be transferred from a parent lot over the next 30 years. Therefore, nitrogen offsetting could be needed for up to 9,500 households over the same period.

11.2.2 Non-residential Activities

For non-residential activities (commercial and industrial), estimates of long term N offsetting requirements are more difficult to make.

Growth will be accommodated by increases in the productivity of activities or redevelopment in brownfield business areas as well as growth in new greenfield areas. NDA may be available in greenfield locations to transfer to the WWTP.

The N loading of wastewater discharges will vary between activities.

Approximately 25-30% of future employment is typically located in residential zoned areas (e.g. home based business, construction, health, education, retirement) and this needs to be taken into account.

There is no current land uptake or floorspace growth projections available on which to base estimates of N requirements. Based on forecast development under the Spatial Plan, additional

⁵⁵ Household projections, p25, Rotorua District Employment, Population, Household, Visitor Projections, Infometrics, April 2020

⁵⁶ 7.2. Estimated Residential Land Requirements, p103 Rotorua Spatial Plan Economic Analysis, Property Economics, January 2017

non-residential household unit equivalents (assuming 100m² GFA/HUE) will range between 2,000 to 5,000 over the next 30 years. They make up a significant proportion of overall urban land use change (approximately 30%).

An allowance of 30% additional HUE over 30 years (3,000) with 50% of these having NDA available to be transferred from a rural parent lot would be a reasonable interim approach. Further information will be needed to more accurately estimate future nitrogen losses from non-residential activities.

Regardless of the detail, there is likely to be a significant long term requirement for nitrogen offsetting at scale.

11.3 Measures for Nitrogen Offsetting

To date, the baseline approach to nitrogen offsetting involves the purchase of a dairy farm for conversion to a dry stock farm. The reduced nitrogen losses from the change in use can then be made available to offset urban nitrogen losses.

Other measures include buying nitrogen allocations from farmers willing to sell. There is no current market in place for this.

11.4 Funding Options

There are several potential sources of funds for establishing an “offset fund” that can be considered:

- Rates;
- Targeted rates;
- User fees and charges;
- Grants or subsidies;
- Development Contributions under the LGA;
- Financial Contributions under the RMA.

Several revenue options are described below, with an outline of relevant the statutory provisions that apply, and the councils current Revenue and Financing Policy.

Grants or subsidies could be provided by central government as part of overall support for an affordable housing supply or environmental enhancement. Grants and subsidies and other income are used wherever they are available, but this option has not been assessed given their inherent uncertainty as a long term source of funding.

Private N offsetting schemes have not been considered. While it is possible that this could occur on a site by site or collective basis,

A Revenue and Financing Policy adopted under LGA must also show how the local authority has, in relation to the sources of funding identified in the policy, complied with section 101(3).

- (1) *A local authority must manage its revenues, expenses, assets, liabilities, investments, and general financial dealings prudently and in a manner that promotes the current and future interests of the community.*
- (2) *A local authority must make adequate and effective provision in its long-term plan and in its annual plan (where applicable) to meet the expenditure needs of the local authority identified in that long-term plan and annual plan.*
- (3) *The funding needs of the local authority must be met from those sources that the local authority determines to be appropriate, following consideration of, —*
 - (a) *in relation to each activity to be funded, —*
 - (i) *the community outcomes to which the activity primarily contributes; and*
 - (ii) *the distribution of benefits between the community as a whole, any identifiable part of the community, and individuals; and*
 - (iii) *the period in or over which those benefits are expected to occur; and*
 - (iv) *the extent to which the actions or inaction of particular individuals or a group contribute to the need to undertake the activity; and*
 - (v) *the costs and benefits, including consequences for transparency and accountability, of funding the activity distinctly from other activities; and*
 - (b) *the overall impact of any allocation of liability for revenue needs on the community.*