



Te Kaunihera o Tai Tokerau ki te Raki

AGENDA

Infrastructure Committee Meeting

Wednesday, 27 July 2022

Time: Location:

9:30 am Virtually via Microsoft Teams

Membership:

Chairperson Felicity Foy Mayor John Carter Deputy Mayor Ann Court Cr Dave Collard Cr Rachel Smith Cr Kelly Stratford Cr John Vujcich Member Adele Gardner

Far North District Council Te Kaunihera o Tai Tokerau ki te Raki	Authorising Body	Mayor/Council
	Status	Standing Committee
COUNCIL COMMITTEE	Title	Infrastructure Committee Terms of Reference
	Approval Date	7 May 2020
	Responsible Officer	Chief Executive

Purpose

The purpose of the Infrastructure Committee (the Committee) is to ensure cost effective, quality and sustainable infrastructure decisions are made to meet the current and future needs of Far North communities and that Councils infrastructure assets are effectively maintained and operated.

The Committee will review the effectiveness of the following aspects:

- Affordable core infrastructure to support healthy and sustainable living.
- Operational performance including monitoring and reporting on significant infrastructure projects
- Delivery of quality infrastructure and district facilities
- Financial spend and reprogramming of capital works
- Property and other assets

To perform his or her role effectively, each Committee member must develop and maintain

his or her skills and knowledge, including an understanding of the Committee's responsibilities, Councils' infrastructure assets such as roading, three waters and district facilities.

Membership

The Council will determine the membership of the Infrastructure Committee.

The Infrastructure Committee will comprise of at least six elected members (one of which will be the chairperson).

Mayor Carter Felicity Foy – Chairperson Ann Court – Deputy Chairperson Dave Collard Kelly Stratford John Vujcich Rachel Smith Adele Gardner Non-appointed Councillors may attend meetings with speaking rights, but not voting rights.

Quorum

The quorum at a meeting of the Infrastructure Committee is 5 members.

Frequency of Meetings

The Infrastructure Committee shall meet every 6 weeks but may be cancelled if there is no business.

Power to Delegate

The Infrastructure Committee may not delegate any of its responsibilities, duties or powers.

Committees Responsibilities

The Committees responsibilities are described below:

Quality infrastructure and Facilities

- Assess and provide advice to Council on strategic issues relating to the provision of Council's infrastructural activities and district facilities
- Review, and recommend to Council, policy and strategies for the delivery of infrastructural asset services
- Monitor achievement of outcomes included in the Infrastructure Strategy and other infrastructure strategies e.g District Transport Strategy
- Ensure that Council protects its investment in its infrastructural assets in accordance with accepted professional standards
- Monitor the risks, financial and operational performance of the Council's infrastructural activities and facilities
- Monitor major contract performance measures/key result areas (KRAs)

Significant Projects - spend, monitoring and reporting

- Monitor significant projects
- Approve budget overspend (above tolerance levels in the CE delegations) and any reprogramming of capex for a project or programme provided that:
 - The overall budget is met from savings
 - The overall budget for capex is not exceeded. Where this is not the case, the Committee must either:
 - Recommend to Council that additional funding is approved (outside the Annual Plan or Long-Term Plan process), or
 - Recommend as part of the next round of Long-Term Plan or Annual Plan process that the funding is considered for inclusion.
- Approve tenders and contracts provided they are:
 - Up to \$3 million,
 - o in accordance with the current year's plan, whether that be Annual Plan or Long-Term Plan, and
 - o deemed low by the Significance and Engagement Policy

Compliance

• Ensure that operational functions comply with legislative requirements and Council policy

• Ensure that consents associated with Council's infrastructure are being met and renewals are planned for

Service levels (non-regulatory)

• Recommend service level changes and new initiatives to the Long Term and Annual Plan processes.

Relationships

- Monitoring Council's relationship with the Northland Transportation Alliance
 Receive quarterly performance reports
- Monitoring Council's relationship with the Far North Waters Alliance Partner

Property

- Recommend to Council the acquisition or disposal of assets.
- Approve new leases and lease renewals (of non-reserve land), in accordance with the current years' plan, whether that be Annual Plan or Long-Term Plan.

Receive updates on changes to national and regional policies that impact on Council provision of infrastructure and where appropriate make recommendation to Council.

Rules and Procedures

Council's Standing Orders and Code of Conduct apply to all the committee's meetings.

Annual reporting

The Chair of the Committee will submit a written report to the Chief Executive on an annual basis. The review will summarise the activities of the Committee and how it has contributed to the Council's governance and strategic objectives. The Chief Executive will place the report on the next available agenda of the governing body.

Far North District Council Infrastructure Committee Meeting will be held in the Virtually via Microsoft Teams on: Wednesday 27 July 2022 at 9:30 am

Te Paeroa Mahi / Order of Business

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	7.1 7.2	Confirmation of Previous Minutes - Public Excluded Kerikeri CBD Bypass Property Acquisition	under separate cover
8	Karakia	Whakamutunga – Closing Prayer	119
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1 KARAKIA TIMATANGA – OPENING PRAYER

2 NGA WHAKAPĀHA ME NGĀ PĀNGA MEMA / APOLOGIES AND DECLARATIONS OF INTEREST

Members need to stand aside from decision-making when a conflict arises between their role as a Member of the Committee and any private or other external interest they might have. This note is provided as a reminder to Members to review the matters on the agenda and assess and identify where they may have a pecuniary or other conflict of interest, or where there may be a perception of a conflict of interest.

If a Member feels they do have a conflict of interest, they should publicly declare that at the start of the meeting or of the relevant item of business and refrain from participating in the discussion or voting on that item. If a Member thinks they may have a conflict of interest, they can seek advice from the Chief Executive Officer or the Team Leader Democracy Support (preferably before the meeting).

It is noted that while members can seek advice the final decision as to whether a conflict exists rests with the member.

3 NGĀ TONO KŌRERO / DEPUTATION

No requests for deputations were received at the time of the Agenda going to print.

4 CONFIRMATION OF PREVIOUS MINUTES

4.1 CONFIRMATION OF PREVIOUS MINUTES

File Number:	A3769306
Author:	Rhonda-May Whiu, Democracy Advisor
Authoriser:	Aisha Huriwai, Team Leader Democracy Services

PURPOSE OF THE REPORT

The minutes of the previous Infrastructure Committee meeting are attached to allow the Committee to confirm that the minutes are a true and correct record.

RECOMMENDATION

That the Infrastructure Committee confirm that the minutes of the meeting held 15 June 2022 be confirmed as a true and correct record.

1) BACKGROUND

Local Government Act 2002 Schedule 7 Section 28 states that a local authority must keep minutes of its proceedings. The minutes of these proceedings duly entered and authenticated as prescribed by a local authority are prima facie evidence of those meetings.

2) DISCUSSION AND OPTIONS

The minutes of the meeting are attached. Far North District Council Standing Orders Section 27.3 states that no discussion shall arise on the substance of the minutes in any succeeding meeting, except as to their correctness.

Reason for the recommendation

The reason for the recommendation is to confirm the minutes are a true and correct record of the previous meeting.

3) FINANCIAL IMPLICATIONS AND BUDGETARY PROVISION

There are no financial implications or the need for budgetary provision as a result of this report.

ATTACHMENTS

1. 2022-06-15 Infrastructure Committee Minutes - A3751209 🗓 🛣

Compliance schedule:

Full consideration has been given to the provisions of the Local Government Act 2002 S77 in relation to decision making, in particular:

- 1. A Local authority must, in the course of the decision-making process,
 - a) Seek to identify all reasonably practicable options for the achievement of the objective of a decision; and
 - b) Assess the options in terms of their advantages and disadvantages; and
 - c) If any of the options identified under paragraph (a) involves a significant decision in relation to land or a body of water, take into account the relationship of Māori and their culture and traditions with their ancestral land, water sites, waahi tapu, valued flora and fauna and other taonga.
- 2. This section is subject to Section 79 Compliance with procedures in relation to decisions.

Compliance requirement	Staff assessment
State the level of significance (high or low) of the issue or proposal as determined by the <u>Council's</u> <u>Significance and Engagement Policy</u>	This is a matter of low significance.
State the relevant Council policies (external or internal), legislation, and/or community outcomes (as stated in the LTP) that relate to this decision.	This report complies with the Local Government Act 2002 Schedule 7 Section 28.
State whether this issue or proposal has a District wide relevance and, if not, the ways in which the appropriate Community Board's views have been sought.	It is the responsibility of each meeting to confirm their minutes therefore the views of another meeting are not relevant.
State the possible implications for Māori and how Māori have been provided with an opportunity to contribute to decision making if this decision is significant and relates to land and/or any body of water.	There are no implications on Māori in confirming minutes from a previous meeting. Any implications on Māori arising from matters included in meeting minutes should be considered as part of the relevant report.
Identify persons likely to be affected by or have an interest in the matter, and how you have given consideration to their views or preferences (for example – youth, the aged and those with disabilities.	This report is asking for the minutes to be confirmed as true and correct record, any interests that affect other people should be considered as part of the individual reports.
State the financial implications and where budgetary provisions have been made to support this decision.	There are no financial implications or the need for budgetary provision arising from this report.
Chief Financial Officer review.	The Chief Financial Officer has not reviewed this report.

Infrastructure Committee Meeting Minutes

15 June 2022

MINUTES OF FAR NORTH DISTRICT COUNCIL INFRASTRUCTURE COMMITTEE MEETING HELD VIRTUALLY VIA MICROSOFT TEAMS ON WEDNESDAY, 15 JUNE 2022 AT 9:34 AM

- PRESENT: Chairperson Felicity Foy, Deputy Mayor Ann Court, Cr Dave Collard, Cr Kelly Stratford, Cr John Vujcich, Member Adele Gardner
- IN ATTENDANCE: William J Taylor, MBE (General Manager Corporate Services), Andy Finch (General Manager Infrastructure and Asset Management), Darren Edwards (General Manager Strategic Planning and Policy)
- STAFF PRESENT: Ajay Kumar (Management Accountant), Bernard Petersen (Maintenance & Operations Manager Northland Transportation Alliance), Calvin Thomas (General Manager Northland Transportation Alliance), Marlema Baker (Democracy Advisor), Rhonda-May Whiu (Democracy Advisor), Emma Healy (Executive Officer), Shayne Storey (Community Development Advisor)

1 KARAKIA TIMATANGA – OPENING PRAYER

Chairperson Felicity Foy opened the meeting with a karakia.

2 NGĀ WHAKAPĀHA ME NGĀ PĀNGA MEMA / APOLOGIES AND DECLARATIONS OF INTEREST

APOLOGY

RESOLUTION 2022/18

Moved: Chairperson Felicity Foy Seconded: Member Adele Gardner

That the apology received from Mayor John Carter and Cr Rachel Smith be accepted and leave of absence granted.

In Favour: Felicity Foy, Ann Court, Dave Collard, Kelly Stratford, John Vujcich and Adele Gardner

Against: Nil

CARRIED

3 NGĀ TONO KŌRERO / DEPUTATION

Nil

4 CONFIRMATION OF PREVIOUS MINUTES

4.1 CONFIRMATION OF PREVIOUS MINUTES

Agenda item 4.1 document number A3700951, pages 14 - 20 refers

RESOLUTION 2022/19

Moved: Cr John Vujcich Seconded: Cr Dave Collard

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Infrastructure Committee Meeting Minutes

15 June 2022

That the Infrastructure Committee confirm that the minutes of the meeting held 4 May 2022 be confirmed as a true and correct record. In Favour: Felicity Foy, Ann Court, Dave Collard, Kelly Stratford, John Vujcich and Adele Gardner Nil

Against:

CARRIED

5 INFORMATION REPORTS

INFRASTRUCTURE COMMITTEE ACTION SHEET UPDATE APRIL 2022 5.1

Agenda item 5.1 document number A3700961, pages 21 - 24 refers

RESOLUTION 2022/20

Moved: Chairperson Felicity Foy Seconded: Cr John Vujcich

That the Infrastructure Committee receive the report Action Sheet Update June 2022.

CARRIED

TE WĀHANGA TŪMATATI / PUBLIC EXCLUDED 6

RESOLUTION TO EXCLUDE THE PUBLIC

COMMITTEE RESOLUTION 2022/21

Chairperson Felicity Foy Moved: Seconded: Cr John Vujcich

That the public be excluded from the following parts of the proceedings of this meeting.

The general subject matter of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under section 48 of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution are as follows:

General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Ground(s) under section 48 for the passing of this resolution
6.1 - Confirmation of Previous Minutes - Public Excluded	s7(2)(h) - the withholding of the information is necessary to enable Council to carry out, without prejudice or disadvantage, commercial activities	s48(1)(a)(i) - the public conduct of the relevant part of the proceedings of the meeting would be likely to result in the disclosure of information for which good reason for withholding would exist under section 6 or section 7
6.2 - Approval to award Kerikeri Clarifier Renewal Contract 7-21-404	s7(2)(b)(i) - the withholding of the information is necessary to protect information where the making available of the information would disclose a trade secret s7(2)(b)(ii) - the withholding of the	s48(1)(a)(i) - the public conduct of the relevant part of the proceedings of the meeting would be likely to result in the disclosure of information for which good reason for withholding would exist under section 6 or section 7

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Infrastructure Committee Meeting Minutes

15 June 2022

		information is necessary to protect information where the making available of the information would be likely unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information	
<u>In Favour:</u>	Felicity Foy, Ann Gardner	Court, Dave Collard, Kelly Stra	atford, John Vujcich and Adele
<u>Against:</u>	Nil		CARRIED

7 KARAKIA WHAKAMUTUNGA – CLOSING PRAYER

Councillor Kelly Stratford closed the meeting with a karakia.

8 TE KAPINGA HUI / MEETING CLOSE

The meeting closed at 9:57am.

The minutes of this meeting will be confirmed at the Infrastructure Committee Meeting held on 27 July 2022.

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CHAIRPERSON

5 REPORTS

5.1 ECONOMIC AND PRACTICABILITY ASSESSMENT FOR DISCHARGE OF TREATED WASTEWATER TO LAND FROM HIHI WASTEWATER TREATMENT PLANT

File Number:	A3772151
Author:	Ben Bowden, Intermediate Infrastructure Planner
Authoriser:	Andy Finch, General Manager - Infrastructure and Asset Management

TAKE PŪRONGO / PURPOSE OF THE REPORT

To seek a decision from Council, via the Infrastructure Committee, regarding the economic viability of discharging treated wastewater from the Hihi Wastewater Treatment Plant (WWTP) to land.

WHAKARĀPOPOTO MATUA / EXECUTIVE SUMMARY

- The resource consent that authorises discharge of treated wastewater to the Hihi stream from the Hihi Wastewater Treatment Plant (WWTP) expires 30 November 2022. In accordance with section 124(1) of the Resource Management Act (RMA) replacement resource consent applications must be lodged with Northland Regional Council (NRC) prior to 31 August 2022. This will enable the WWTP to continue to operate under the current consents while a decision is made on the replacement applications.
- The Proposed Regional Plan for Northland (PRP) sets out that an application for resource consent to discharge municipal wastewater to water will not generally be granted unless a discharge to land has been considered and found not to be environmentally, economically, or practicably viable.
- This report seeks a decision from Council, via the Infrastructure Committee, regarding the economic viability of discharging treated wastewater to land to support the renewal of the Hihi discharge consent. This report:
 - Demonstrates, based on a desktop assessment, that discharge of treated wastewater from the Hihi WWTP to land is considered practicably viable.
 - Presents two cost estimates of \$2.85M and \$3.02M (-30% to +50%) to establish a treated wastewater to land discharge in Hihi (excluding costs for land purchase and Hihi WWTP upgrade).
 - Based on the existing rating model, estimates a targeted rating increase of \$573 \$1290 for the first year (Y5) which will reduce to a range of \$531 - \$1195 after five financial years (Y10).
 - Determines that discharge to land is not currently considered to be economically viable using the *Rates affordability in the Far North* report (attachment 4) prepared by Business and Economic Research Ltd (BERL).
 - Recommends that Council does not pursue discharge to land as part of the current resource consent application as it is not considered economically viable within the context of Council's purpose under the Local Government Act 2002.
 - Acknowledges the Three Waters Reform or a change to the rating model for wastewater may result in a discharge to land scheme becoming economically viable in the future.
 - Recommends continuation of investigations into discharge to land in Hihi (separate to the resource consent application process) including gaining feedback from mana whenua and the community in Hihi.

TŪTOHUNGA / RECOMMENDATION

That the Infrastructure Committee recommends to Council that:

1. The option of discharging treated wastewater from the Hihi Wastewater Treatment Plant to land is not pursued at this time as part of the application to replace the resource consents authorising discharge of contaminants from the Hihi Wastewater Treatment Plant, on the basis that the costs associated with that activity, are assessed as not economically viable.

And that the Infrastructure Committee notes that:

Staff will continue engagement with mana whenua and the community on a discharge to land option; and

Should this eventuate and a possible site(s) be identified after affected landowners have been engaged, staff will prepare a budget request for this Committee to consider making funding available for the site assessment and concept design for the discharging to land from the Hihi wastewater treatment plant that includes site specific technical, design and cost investigation of this option, in which mana whenua are included.

Staff are preparing a paper for Council seeking adoption of a District Wide rating policy for wastewater. This would make land-based disposal at Hihi more affordable.

1) TĀHUHU KŌRERO / BACKGROUND

Discharge to Land Investigations

The resource consent held by Far North District Council (FNDC) authorising the discharge of treated wastewater to an unnamed tributary of Hihi beach from the Hihi WWTP will expire on 30 November 2022.

Operative policy D.4.3 of the PRP sets out that an application for resource consent to discharge municipal wastewater to water will not be generally granted unless a discharge to land has been considered and found not to be environmentally, economically, or practicably viable.

Staff have completed:

- Desktop assessment which identifies numerous practicably viable sites
- High-level cost estimate for top 2 practicably viable sites
- Rating impact assessment
- Comparison between rating impact and BERL report to assess affordability

The economic viability of discharge to land in Hihi should be read within the context of Council's purpose under the Local Government Act 2002. That is to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future.

The recommendation is being sought to support the resource consent applications for the Hihi WWTP, to be lodged before the end of August 2022. It should be noted that this recommendation does not rule out consideration of wastewater discharge to land options as part of future Long-Term Plans (LTP) or through a new three waters governing entity.

To advance investigations, the next step would be to contact identified landowners to gauge interest. If an interested landowner is found, then onsite testing can be completed, and the project can proceed to a concept design which will give a cost estimate of $\pm 25\%$. The expected timeline to get to a concept design is 2 - 3 years with a cost of \$285k. No funding is available at present for the continuation of this project and therefore staff will report back once a preferred site is identified.

Engagement

FNDC continues to engage with local iwi and the community of Hihi on the topic of discharge to land with a summary of engagement in attachment 2.

With the upcoming upgrade to the Hihi WWTP, the community confirmed that the current discharge to water after passing through the constructed wetland was acceptable due to the added costs.

Ngati Kahu was approached to discuss the Hihi WWTP and potential for discharge to land. Members of the Taipa Resource Consent Working Group have also provided support to the process.

A webpage has been set up on the FNDC website which provides an overview of the treatment process and the ongoing consent renewal project. A series of frequently asked questions and answers is part of this and includes info on discharge to land investigations.

2) MATAPAKI ME NGĀ KŌWHIRINGA / DISCUSSION AND OPTIONS

Practical viability of wastewater discharge to land for Hihi

A desktop assessment of land within 5km radius of the Hihi WWTP identified several potentially suitable sites. These sites were ranked in terms of practicality using a range of criteria, the full details of which can be found in attachment 1.

This assessment was peer-reviewed by Beca engineering staff to ensure credibility and confirms that discharge to land is practicably viable in Hihi at a desktop level. The top 2 ranked sites from this assessment were then used by Beca to develop the cost estimates for establishing a discharge to land scheme in Hihi.

If further investigations are funded, then the sites can be investigated to identify a preferred site that is acceptable from technical, cultural and landowner perspectives.

Economic viability of wastewater discharge to land for Hihi

A high-level cost estimate for establishing a wastewater discharge to land scheme is assessed at \$2.85M and \$3.02M, with -30% to +50% accuracy. The total range of cost is \$2.0M to \$4.5M and does not include cost estimates associated with land purchase or potential upgrades that are required at the Hihi WWTP. A copy of the cost estimate has been included as attachment 5.

It is possible that the land purchase costs can be avoided if a lease or similar arrangement is entered into between FNDC and the landowner; however, such arrangements cannot be relied upon until further engagement is carried out with specific landowners.

The investigations to develop a concept design for wastewater disposal at Hihi would include determining whether land purchase and/or WWTP upgrade costs will also need to be funded to achieve wastewater discharge to land for Hihi.

Staff used the high-level cost estimate to determine the rating impact for establishing a discharge to land scheme for Hihi. Separate rating impact options were developed to reflect the range set out in the cost estimate, using the estimated value, lower and upper margin of error values. This calculation is based on the existing scheme based rating model, and would reduce significantly should Council in the future elect to adopt a District Wide rating policy for wastewater.

Table 1 sets out the estimated rating impact of establishing a discharge to land scheme in Hihi. A copy of the rating impact assessment has been included as attachment 3.

Additional	2025	2026	2027	2028	2029	2030
Capital Rate	(Y5)	(Y6)	(Y7)	(Y8)	(Y9)	(Y10)
Per						
Connection						
At \$2.0M	\$572.73	\$564.44	\$556.14	\$547.84	\$539.55	\$531.25
At \$2.85M	\$818.19	\$806.34	\$794.48	\$782.63	\$770.78	\$758.93
At \$3.02M	\$859.75	\$847.18	\$834.61	\$822.04	\$809.47	\$796.90
At \$4.5M	\$1,289.63	\$1,270.77	\$1,251.91	\$1,233.06	\$1,214.20	\$1,195.35

Table 1: Estimated targeted rating impact of wastewater discharge to land for Hihi

To assess affordability of establishing a discharge to land scheme in Hihi, the 2020 BERL report is used. The report does not assess the Hihi community individually but does look at the Te Hiku Ward as a whole.

The BERL report establishes that affordability, in the context of rates has two aspects:

- I. The cost relative to income (and wealth);
- II. The ability of ratepayers to earn greater income in the future from the spending of rates, e.g. investment in infrastructure. It also sets out an approximate benchmark for affordability, whereby affordability concerns will arise where rates exceed 5% of gross household income.

If discharge to land is pursued, the estimated lowest cost increase scenario will result in total rates of \$2,886, \$3,161, and \$3,335 for lower quartile, median, and upper quartile households respectively. At these values the rates would be unaffordable (>5% income) for 6 out of 8 typical household types across all 3 levels indicated in Table 2. The two household types where rates remain affordable are 'Couple, two children, both employed' and 'Two working adults, based in Auckland'.

Using the BERL report to frame considerations of affordability (under the current rating mechanism), the discharge of treated wastewater to land from the Hihi wastewater treatment plant is assessed as not economically viable. The upgrade currently being investigated for Hihi WWTP would likely at least double the rating impact for the community presented in this report. Land acquisition could also add further costs to the project.

Implications for consideration by the Infrastructure Committee

Decision 1a (preferred decision) – Determining that discharge of treated wastewater to land from the Hihi wastewater treatment plant is not pursued as part of the replacement consent application process.

Council supports the staff recommendation that disposal of treated wastewater from the Hihi WWTP to land is practicably viable but not economically viable within the context and timing of the required resource consent applications. It is anticipated that this will result in a resource consent authorising discharge to water being approved for the Hihi WWTP.

This outcome does not prevent FNDC from continuing to investigate the option of wastewater discharge to land.

Decision 1b - Deferring a decision on the economic viability of wastewater discharge to land for Hihi

Council defers a decision on the economic viability of land disposal. Staff will still be required to lodge the application for replacement resource consents authorising discharge of treated wastewater to water prior to 31 August 2022. These applications would include the assessment carried out to date on wastewater discharge to land feasibility and costs but will be absent a Council decision in respect of the economic viability of establishing such a scheme.

The consequence of not including a Council decision on the matter is that staff will be required to decide on the matter and present this in the application. A determination by staff may not carry sufficient weight to be accepted either by the community or NRC's decision makers.

Decision 1c - Deciding that wastewater discharge to land for Hihi is economically viable

A decision that wastewater discharge to land is economically viable will require a staged consenting process. Staff will be required to lodge a consent application for discharge to water to cover the ongoing discharge whilst the site selection, land purchase, consenting, design, delivery and LTP requirements are covered.

It is anticipated that a short-term consent would not be inconsistent with Policy D.4.3 because it can be demonstrated that it is not practicably viable to deliver a wastewater discharge to land scheme within the time constraints associated with the above. Additional costs associated with land purchase

and potential upgrade options for the Hihi wastewater treatment plant will need to be assessed and included in the proposal.

Staff will engage with mana whenua, landowners, and other stakeholders, to determine a preferred site based on practicality, cost, cultural considerations, landowner participation and the potential for wastewater to become a resource (i.e., irrigation) on the preferred site.

Funding will then be required to progress on-site investigations to assess if the land is suitable to receive treated wastewater as predicted at a desktop level. Providing that a preferred site is successfully identified and verified through site investigations, a concept design and cost estimate will be developed for a wastewater discharge to land scheme including potential upgrades that may be required at the treatment plant.

The concept design can then be progressed into a detailed design to be implemented should the activity of discharging treated wastewater to land become economically viable in future for Hihi.

Take Tūtohunga / Reason for the recommendation

Due to the necessary upgrade at Hihi WWTP and estimated rating impact on households that are connected to the Hihi wastewater scheme, it has been determined that a wastewater discharge to land scheme is currently unaffordable for the community of Hihi.

As such, it is recommended that a wastewater discharge to land scheme is determined as economically non-viable, and that the replacement consent application seeking to continue discharging to the unnamed tributary of Hihi beach is supported.

3) PĀNGA PŪTEA ME NGĀ WĀHANGA TAHUA / FINANCIAL IMPLICATIONS AND BUDGETARY PROVISION

This report recommends the discharge to land under the current rating model is unaffordable for the community of Hihi. If this recommendation is endorsed, then no budgetary provisions will be required.

If it is determined that investigations should be progressed to a concept design stage, funding of approx. 285k over 2 - 3 years is estimated as the requirement.

Should Council decide that discharge to land is affordable then further investigations will need to be conducted in collaboration with local community and iwi. The cost of these investigations and implementation of a discharge to land scheme is between \$2.85M - \$3.02M at -30% to +50% accuracy.

The Three Water reforms are also expected to take effect from 1 July 2024.

ĀPITIHANGA / ATTACHMENTS

- 1. Hihi Land Disposal Assessment Report 09-2021 A3773993 🗓 🎇
- 2. Hihi WWTP Engagement Overview June 2022 A3774072 🗓 🖺
- 3. Rating Impact Assessments Hihi DtL Options A3774030 🗓 🖾
- 4. Rate's affordability in the Far North 2020 A3773995 🗓 🛣
- 5. 20210705 Beca Hihi WWTP Discharge to Land Cost Estimate Letter A3773991 🗓 🛣

Hōtaka Take Ōkawa / Compliance Schedule:

Full consideration has been given to the provisions of the Local Government Act 2002 S77 in relation to decision making, in particular:

- 1. A Local authority must, in the course of the decision-making process,
 - a) Seek to identify all reasonably practicable options for the achievement of the objective of a decision; and
 - b) Assess the options in terms of their advantages and disadvantages; and
 - c) If any of the options identified under paragraph (a) involves a significant decision in relation to land or a body of water, take into account the relationship of Māori and their culture and traditions with their ancestral land, water sites, waahi tapu, valued flora and fauna and other taonga.
- 2. This section is subject to Section 79 Compliance with procedures in relation to decisions.

He Take Ōkawa / Compliance Requirement	Aromatawai Kaimahi / Staff Assessment
State the level of significance (high or low) of the issue or proposal as determined by the <u>Council's</u> <u>Significance and Engagement Policy</u>	Deciding that it is economically viable to establish wastewater disposal to land schemes for the community of Hihi has a high level of significance, which meets several criteria (for high significance) set out in the policy.
State the relevant Council policies (external or internal), legislation, and/or community outcomes (as stated in the LTP) that relate to this decision.	The Resource Management Act requires FNDC to hold resource consent to discharge contaminants into the environment. Replacement resource consent is being sought. This approach is viewed as more affordable than establishing disposal to land schemes for the subject community and is considered consistent with the community outcome of: <i>Prosperous communities</i> <i>supported by a sustainable economy.</i>
State whether this issue or proposal has a District wide relevance and, if not, the ways in which the appropriate Community Board's views have been sought.	The issue of establishing disposal to land schemes is a district wide issue, which has been focused via this report on the community of Hihi, because of the need to replace discharge resource consents for this community.
State the possible implications for Māori and how Māori have been provided with an opportunity to contribute to decision making if this decision is significant and relates to land and/or any body of water. State the possible implications and how this report aligns with Te Tiriti o Waitangi / The Treaty of Waitangi.	A decision that discharges to land is not economically viable will have implications for Māori, being the continued discharge of treated effluent to water. Consultation with tangata whenua is currently underway and will include this topic, enabling tangata whenua to contribute to the resource consent application decision making process.
Identify persons likely to be affected by or have an interest in the matter, and how you have given consideration to their views or preferences (for example – youth, the aged and those with disabilities).	All rate payers that are connected to, or have the ability to connect to, a public wastewater scheme will be affected by this matter. Consideration of the economic impact of establishing land disposal schemes has been considered via the rating impact of the activity.

State the financial implications and where budgetary provisions have been made to support this decision.	A decision that finds the activity (of land disposal) to be economically viable will have significant financial implications, which may in turn require decisions by Council to transfer funding from other areas within the organisation, or otherwise fund establishment of land disposal schemes. No budgetary provisions have yet been made either to establish land disposal schemes, or to undertake further investigation to preliminary design stage for the community of Hihi.
Chief Financial Officer review.	The Chief Financial Officer has reviewed this report.

Hihi Wastewater Treatment Plant

Land Disposal Options Assessment

September 2021

1

REPORT INFORMATION AND QUALITY CONTROL

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Executive Summary

This report provides the results of an assessment to identify potential sites for land disposal of treated wastewater from the Hihi wastewater treatment plant (Hihi WWTP). The work has been completed using geographic information systems (GIS) to identify potentially suitable sites along with a multi-criteria analysis to shortlist potentially suitable sites for a future detailed assessment.

This report assumes an average annual wastewater flow to the WWTP of 45 m³/day in 2025 which is the estimated year of commissioning of any land-based disposal infrastructure. An average hydraulic loading rate of 1.32 - 4.32 mm/day was determined based on the soil drainage classes present in Hihi and the indicative permeability rate associated with clay loam soils. Based on these assumptions, a minimum total area of 1.6 hectares of land is required for disposal to land which includes a 50% buffer to allow for future growth, adequate distance from surroundings, and a storage pond.

GIS mapping using data sets from FNDC, Northland Regional Council (NRC) and other online sources were used. Based on these data sets, it can be confirmed that there are numerous feasible options for land disposal within 5 km of the WWTP. The sites identified as a shortlist were all located to the south of the final discharge point at the end of the constructed wetlands.

The top two options found in this report are both within 3 km of the final discharge point and hold enough area to discharge to land and hold a storage pond for wet winter months when soils are high in water content.

Site specific economic analysis has been achieved for these top two sites by Beca which has been included as Appendix A. This analysis gives a high-level estimate to the cost of implementing land disposal at the two preferred sites for presentation to the community and the council. Should costs prove acceptable, engagement with site owners will begin to establish the likelihood of sale and onsite investigations into the soil, groundwater, and wastewater quality will take place.

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1. Introduction

The Hihi WWTP discharges treated wastewater into an unnamed tributary of Hihi Beach. FNDC is currently in the process of renewing the resource consent authorising the discharge, which expires in November 2022. Policy D.4.3 of the Proposed Regional Plan for Northland (Appeals Version – August 2019) sets out that an application for resource consent to discharge municipal wastewater to water will generally not be granted unless, among other things, a discharge to land has been considered and found not to be economically or practicably viable.

The purpose of this report is to provide an initial desktop feasibility assessment and a high-level cost estimate for land disposal of wastewater from the Hihi WWTP. This will enable a determination of land disposal practicability and feasibility in accordance with Policy D.4.3.

Important to note is that upgrades to the Hihi WWTP have been considered numerous times over the past 10 years. Most recently, a membrane reactor (MBR) was taken before council in March 2021. This option was not supported by council however, due to the high costs and lack of community engagement involved in the decision. FNDC are currently undertaking a new options assessment in collaboration with the community of Hihi to establish a preferred option to take before council.

2. Methodology

To establish the feasibility of land disposal areas, GIS software was used to initially screen site suitability by excluding land areas that failed critical criteria. This first-class exclusion zone was initially developed for the area of interest (AOI) based on the following criteria:

- 20m proximity from all lakes and rivers.
- 20m proximity from all land not designated rural production, general coastal or minerals.
- Total area for land designated as minerals.
- Total area for flood susceptible land.
- Total area for 50-year coastal flooding and erosion predictions.
- Slope > 12°.
- Soil drainage classes 0 1.

These criteria were developed based on established best practice, considering previous similar studies in the Far North [note reference] and engineering advice provided by Beca as part of a pre-draft review process.

The AOI for land disposal in Hihi was initially set out as a 10km radius from the final discharge point. However, due to the number of practicable sites this was reduced to a 5km radius. A long list of sites was then created by ranking each site using the criteria and weighting shown in Table 1 below.

Table 1: Long List Criteria

Criteria	Weighting
Highest Total Available Area	17.0%
Highest Average Hydraulic Loading Rate	50.0%
Lowest Average Slope	33.0%

Lastly, the long list underwent a multi-criteria analysis (MCA) process in which qualitative measures are assessed as shown in Table 2 below. This process allows for the remaining sites to be ranked based on their suitability for land disposal so that the highest ranked can be taken forward for further analysis.

Table 2: MCA Criteria

Criteria	Weighting
Long List Rank	35%
Potential effects on Maori cultural sites (impacts on cultural values and sites)	25%
Distance to WWTP	20%
Existing Land Use (Land Cover, Statutory Considerations, SNA's)	20%

The analysis was achieved using the datasets found in Table 3 to conduct the exclusion zones and criteria analysis referenced above.

Table 3: Spatial Data Sets used to Identify Land Disposal Constraints

GIS Dataset	Source
District Plan Zones	Far North District Council
Slope	LENZ ²
MfE river flows	LINZ ¹
Northland Flood Susceptible Land	Northland Regional Council
Marae	Te Puni Kokiri Maps
NZAA Registered Sites	Far North District Council
SNA's	Far North District Council
Bore sites	Northland Regional Council
Parcel Search (Property Ownership Type)	Far North District Council
NZLRI SOIL	LRIS Portal ³
LCDB v5.0	LRIS Portal

1 LINZ topo1:50,000 map data

2 Slope data layer used in the creation of Land Environments of New Zealand (LENZ) classification

3 Identified as the same layer used in NRC Soil Map Viewer

3. Land Disposal Methods

The work of Tonkin + Taylor (2019) in Ahipara suggests that the methods for land disposal from wastewater treatment plants are limited by volume, soil quality, and level of treatment prior to disposal.

Four potential land disposal methods have been identified for consideration:

- Soil Aquifer Treatment (SAT)
- Soil Moisture Discharge Methods (SM)
- Slow Rate Irrigation (SR)
- Combined Land and Water Discharge (CLWD)

Soil Aquifer Treatment (SAT)

According to the USEPA Process Design Manual for Land Treatment of Municipal Wastewater Effluents, (2006) soil aquifer treatment allows for higher loading rates than the other options which would significantly reduce the area required for disposal. However, this method requires sandy soils which are free draining and require a fine level of pre-disposal filtration to operate effectively.

Typically, SAT is used when free draining sandy soils are present which is not the case in Hihi. The area surrounding the Hihi WWTP contains a mixture of young, mature, and old semi-volcanic soils which vary from poor up to excessively well-draining as discussed in section 5 of this report.

Effluent exiting the Hihi WWTP also contains algae and other solids which can lead to clogging of the disposal system and result in runoff. For SAT to be viable, the pre-disposal treatment would need to meet a suitable standard to prevent clogging and runoff from occurring. Current pre-disposal treatment would not meet this standard and therefore SAT would only be considered in combination with upgrades to the treatment process.

Investigation into treatment requirements and costing of upgrades required to reach those requirements would need to be completed before SAT disposal could be considered. It is recommended that this is done should land disposal be carried forward as an option following this report.

Soil Moisture Discharge Methods (SM)

Soil moisture discharge methods are designed to minimize losses to groundwater following the disposal to land. This method requires a significantly larger land area than other disposal methods. For this reason, it would only be considered if on-site investigations deemed it necessary due to the potential health risk present in the event treated wastewater would flow into groundwater used by the public.

Slow Rate Irrigation (SR)

Slow rate irrigation is a method where treated wastewater effluent is applied at a low loading rate over an extensive area of land as determined by USEPA (2006). Application rates typically vary between 3 and 5 mm/d according to Tonkin + Taylor (2019). The effluent applied will soak into the upper soil layers where some is lost to evapotranspiration. When the storage capacity of moisture in the soil is exceeded, the effluent will percolate and be lost via soakage. Application methods for SR are spray irrigation (fixed

sprinkler or k-line system), and pressure compensating drip irrigation, either laid on the surface or buried within the topsoil layer (100 to 150 mm depth).

Effluent from the Hihi WWTP is not suitable for the pressure compensating drip irrigation system due to the required small diameter effluent emitters. The wastewater being discharged contains algae that will quickly clog the emitters and compromise the operation. This was the reason the system was not further considered for the Ahipara WWTP land disposal options assessment (Tonkin + Taylor, 2019). Therefore, drip irrigation would only be considered if pre-disposal treatment of total suspended solids (TSS) was improved.

SR systems need to be developed to avoid run-off from the disposal area with all effluent being disposed of via soakage or evapotranspiration. Therefore, irrigation will need to cease during times of high soil moisture content when chances of runoff are high. Detailed investigations would be required to determine when irrigation should cease for each site. Effluent produced at such a time would need to be stored in a storage pond. Comparison sites indicate a requirement of 3 - 6 months of storage capacity is required if 100% discharge to land is pursued. Whangamata which uses a precipitation index irrigation scheme requires a 3-month storage pond, whilst a land disposal system in Mangawhai requires 6 months of storage.

SR is most suitable on land slopes up to 10° however, it can work on slopes up to 20° if drainage class is suitable. The drainage class within the area of interest allows slopes greater than 10° to be considered, however the additional runoff risk requires further investigation. For the purpose of this analysis sites with less than 12° have been considered for disposal in accordance with the land disposal report for Kohukohu by Daniel, J. (2020). This report identified that slopes above 12° pose a greater risk of runoff and erosion issues.

Most contaminants within wastewater effluent are removed in the first few meters of soil, with finer soils resulting in a greater removal rate. Some nitrogen may be removed through nitrification on the surface of the soil, however, once it has entered the soil will move freely through the soil profile when it becomes entrained with water. This can lead to nitrogen loading downstream, the effects of which should be considered when finding an appropriate site for land disposal.

Slow rate irrigation is considered the most appropriate method for this desktop analysis.

Combined Land and Water Discharge (CLWD)

Using SR in a combined land and water discharge should also be considered where the land disposal would be considered as a 'side-stream' treatment to the current set-up; that is, flows that are to be directed to land disposal would undergo a separate treatment process to the flows that would be discharged to water. The benefits of a side-stream arrangement are that the capital investment required for land disposal can potentially be reduced owing to the differing treatment requirements for land disposal discharge to water. This would allow for discharge to water when the land discharge site is unable to accept treated wastewater due to soil moisture conditions. Hihi WWTP currently makes use of a constructed wetland as a final treatment process before it is discharged to the stream. If a combined approach was taken forth then an investigation into the impact on the constructed wetland would be needed.

4. Flow Summary:

Flow data for the period between 1st January 2017 and 31st Dec 2020, which includes both residential and industrial wastewater, has been collated for analysis. Figure 1 below shows the inflows and outflows of the treatment plant as well as the final discharge flows post constructed wetlands. As can be seen there is some missing data and periods of time where the outflows from plant and final discharge have been used interchangeably.

The high flows on this graph match rainfall events which suggest there is infiltration. If this infiltration could be reduced, then the land area requirement for land disposal could be reduced.



Hihi WWTP Flows

Figure 1: Hihi WWTP Flows

Table 4 below identifies the average, median, 90th percentile, maximum, and average dry weather flows for 2020 (current year), 2025 (estimated first year of operation should the option be taken forward), and 2055 (final year of maximum consent duration).

Table 4: Hihi Wastewater Constructed Wetland Flows (Jan 2017 – Dec 2020)

Parameter	2021	2025	2055
Average Flow (m3/day)	44	45	57
Median Flow (m3/day)	32	33	41
90 th Percentile Flow (m3/day)	83	85	108
Maximum Flow (m3/day)	683	697	885
Average Dry Weather Flow	20	30	38
(m3/day)	29		

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The final discharge point which flows out of the constructed wetland (CWL) and into the unnamed tributary of Hihi Beach has been used to determine the flow rate that would be disposed to land. Stormwater infiltration is currently a major issue in Hihi with the WWTP taking on up to 8 times the average flow during heavy rainfall events. The maximum flow discharged from the constructed wetlands is double the maximum outflow from the plant and indicates that the CWL is also susceptible to heavy rainfall.

This will impact the design considerations that depend on maximum flow such as pipe sizing and pump specifications required.

5. Soil Drainage Class

Drainage classification is of fundamental importance to land disposal at a high level. It allows for an indicative soil permeability to be determined based on the preliminary soil permeability as per the guidelines of NZS1547 (2012).

To compare the potential sites with the underlying soil, a drainage class assessment was undertaken using the following method:

- NZLRI Soil (2010) layer imported from LRIS portal. This layer forms the basis for the Northland Regional Councils (NRC) soil viewer.
- Using the soil factsheets supplied by NRC, the types of soils found in the AOI were assigned with
 a drainage class between 0 (No drainage) 5 (Very well drained). Some of these soils had a range
 of drainage classes that were averaged out so that a single value could be attributed to them. (e.g.
 Omu Clay Loam (OM) has a drainage class between 2 4 so would become a 3).
- The assigned drainage classes were then applied to the imported layer which exists as polygons on the map. These polygons often had 2 – 3 soils attributed to them and so an average drainage class was used with it being rounded to the nearest whole number.

The output from the above assessment is set out in Figure 2 below. As can be seen, the higher draining soils in close proximity to the final outlet are to the east of the AOI. These soils are predominantly young, mature, and old semi-volcanic soils which are well draining. Specific soil types include large areas of Rangiuru clay and Mangonui clay in the well-draining area east of the final outlet.



Figure 2: Soil Drainage Classes

For the purposes of this analysis a high-level approach was used to give an indicative drainage class that could be associated with the underlying soil as a comparison tool for potential sites. On-site testing to confirm the drainage of the soil would need to be carried out in the event any options are taken forward for further consideration.

6. Groundwater considerations

NRC does not currently monitor groundwater in the Hihi area, and no groundwater investigations have been achieved by FNDC. Therefore, onsite investigations will need to be achieved to determine groundwater flows relative to the site selected for disposal.

It is vital that a flow path be charted for the treated wastewater once it has been disposed to land so that FNDC can be confident that it will not turn into an environmental or public health risk. This can be achieved using well-placed bores which are monitored to establish flow rates, depth, and direction. It is important that this monitoring accurately reflect yearly flows and so should be done for the period of at least one year though winter months where the flows will be highest are the most important.

7. Hydraulic Loading Rate Design Basis

Following the method used by Jacobs (2020) the hydraulic loading rate has been determined based on an estimated percolation rate, average annual rainfall, and the average annual evapotranspiration for Hihi. Annual rainfall and evapotranspiration data used is NIWA Cliflo data from the nearest stations which document that data.

The preliminary design for soil permeability is determined using NZS1547 (2012) which provides a broad estimate of between 60 - 120 mm/day for massive clay loam land disposal systems. This range was used to differentiate the drainage classes being considered (2 – 5) as in Table 6 below.

Drainage Class	Preliminary Soil Permeability (mm/day)
2	60
3	80
4	100
5	120

Table	6: Soil	Permeability

An example of this method can be found in Table 7 below which finds a hydraulic loading rate of 4.32 mm/d for areas with a drainage class of 5. Therefore, this result is the best possible case for the area of interest and is only slightly outside the range of 3 - 5 mm/d suggested by Tonkin + Taylor (2019) for land disposal for the Ahipara WWTP.

The hydraulic loading rate found for drainage class 2 is 1.32 mm/day which is below the range considered by Tonkin + Taylor (2019). Due to the imperfectly draining nature of the class this was considered appropriate.

Table 7: Hydraulic Loading Rate Example

Paramotor	Unite	Valuo	Commont
Parameter	Onits	value	comment
Soil Type	-	Clay Loam	NRC Managing NZ Soils Fact Sheet
			Viewer
Soil Permeability	mm/day	120	Category 4, Table 5.2 NZS1547
(Preliminary			(2012)
Design)			
Design Safety Factor	%	5	USEPA (2006)
Design Annual	mm/day	6	Soil Permeability x Design Safety
Percolation Rate			Factor
Annual Rainfall	mm/year	1538	NIWA (Average from past 5 years)
Annual	mm/year	926	NIWA (Average from past 5 years)
Evapotranspiration			
Hydraulic Loading	mm/day	4.32	Percolation – Rainfall +
Rate			Evapotranspiration

8. Land Disposal Design Basis

Using the values reported for the average daily flow and the hydraulic loading rate, total land disposal area requirements can be calculated. These land area requirements are reported in Table 8 for drainage class 2 and 5 to show the range considered for sizing the land disposal system. The total land requirement includes a 50% buffer to account for a storage pond, and potential growth of irrigated area. A 50% buffer has been used to accommodate for the low area requirement for land disposal present due to the low average discharge flow. High stormwater infiltration also means that more land may be required to account for heavy rainfall events in the form of a storage pond.

A comparison has also been included in Table 8 below to show the difference between 2025 and 2055 requirements based on assumed wastewater flows in 2055. The 50% buffer is added in addition to the exclusion zones applied as detailed in section 9 of this report.

Parameter	Units	Drainage Class 2	Drainage Class 5
Average Daily Flow (2025)	m³/day	45	45
Average Daily Flow (2055)	m³/day	57	57
Hydraulic Loading Rate	mm/day	1.32	4.32
Irrigated Area (2025)	На	3.4	1.0
Irrigated Area (2055)	На	4.3	1.3
Irrigation		Spray	Spray
Application Method			
50% Buffer Area (2025)	На	1.7 (0.25 * (Irrigated Area))	0.6 (0.25 * (Irrigated Area))
50% Buffer Area (2055)	На	2.2 (0.25 * (Irrigated Area))	0.7 (0.25 * (Irrigated Area))
Total Land Area Required (2025)	На	5.1	1.6
Total Land Area Required (2055)	На	6.5	2.0

Table 8: Total Area Required for Land Disposal

9. First-class Exclusion Process

A first-class exclusion zone has been initially developed in Arc GIS Pro for the area of interest based on the following criteria:

- 20 m proximity from all lakes and rivers.
- 20 m proximity from all land not designated rural production, general coastal or minerals.
- Total area for land designated as minerals.

- Total area for flood susceptible land.
- Total area for 50-year coastal flooding and erosion predictions.
- Slope > 12°.
- Soil drainage classes 0 1.

Based on these criteria, a desktop GIS analysis was conducted by first creating a 10 km buffer boundary around the Hihi WWTP. FNDC District Plan zones were included to determine the zoning associated within the AOI. Figures 3 - 7 below show the area of the zones being excluded from further analysis as according to the criteria above.



Figure 3: Land Designation

Using this zoning data, all land not zoned as either rural production or general coastal was given a 20m buffer which acts as the designation exclusion zone. The exception to this rule was the minerals zone as it was deemed that this zoning does require the same degree of separation due to the anticipated land use not being sensitive to the land disposal activity.

The lines stretching across the AOI is land designated as roads which have also been considered part of the exclusion zone.

River lines were then produced using data from LINZ TOPO50 NZ River Centerlines and given a buffer of 20 m as per the exclusion criteria. The output is depicted in Figure 4 below. Rivers/streams are widespread over the AOI and act as a considerable constraint compared to the other exclusion criteria.

The flood plains were also considered a total exclusion zone and have been included in Figure 4. Because no flood modeling has been completed within the surrounding catchment, the Northland Regional Council Flood Susceptible Land data was used to demarcate 100-year floodplains. It has been used as an exclusion zone due to the potential damage/contamination that could be caused in the event of a flood.



Figure 4: River, Lake, and Flood lands Exclusion Zone

Rivers are spread out across the AOI and have a significant impact on where land disposal can be applied. Flood susceptible land, however, resides exclusively to the south portion of the AOI and is mostly outside of the 5km radius being considered.

Slopes greater than 12° have been added as an exclusion zone due to the propensity for runoff to be produced from these slopes. Data from LENZ was used first to project the slope data based on a 25m digital elevation model fitted to 20m digital contour data as seen in Figure 5 below. Following this, the areas above 12° were added to the exclusion zone.



Figure 5: Slope Exclusion Zone

Slopes greater than 12° were found in high quantity to the north and east of the discharge point. Sporadic cases can also be seen to the south and west portions of the AOI, but these are mainly outside of the 5km radius being considered. This is a significant amount of area unavailable for land disposal.

As can be seen in Section 5 of this report, the soil drainage map allows for classes 0 - 1 to be excluded from further consideration. This is shown as an exclusion zone in Figure 6 below which matches well with the flood susceptible land due to the alluvial soils found in that area.



Figure 6: Soil Exclusion Zone

As can be seen, most of the land within the AOI is at a high enough drainage class to be considered for disposal of land. This is due to the large presence of young to old semi-volcanic soils which dominate the area and generally have a drainage class between 2 (inconsistent) and 4 (well-draining).

Based on all the first-class exclusions a complete exclusion zone could then be formed as per Figure 7 below.


Figure 7: Total Exclusion Zone

As seen, most of the land with the AOI is currently excluded from further considerations due to the above criteria. However, given the small amount of land required for land disposal in Hihi there are still plenty of options to be considered.

This is shown below where using the total exclusion zone layer, the available land can be shown as in Figure 8.

Coastal flooding and erosion have been determined by NRC at 50 and 100-year intervals. The 100-year zones hold a 5% probability however, and so the 50-year zones have been used instead which have a 66% likelihood. These zones did not add to the exclusion zone area beyond what is already was. Maps for these layers can be supplied on request.



Figure 8: Available Land

The land parcels located outside the exclusion zone were processed using GIS software (ArcMap Pro) to remove small parcels and those that are deemed unusable, in addition to merging land parcels in common ownership. The methodology for this processing is outlined below:

- Available land data initially cleaned of any land parcel area below 0.1 Ha.
- Additional cleaning of remaining data with parcel intents labelled ROAD, HYDRO, etc. which hold unusable land for disposal.
- Parcel properties are merged based on ownership and proximity. This is done so that total land available from a single owner/ownership group can be used providing that the parcel properties are close together.
- Any land remaining with less than 1 Ha is excluded due to being less than the lowest disposal area requirement calculated.

This process has provided an extended list of options which can be further considered for their potential as land disposal sites. In this case there were 40 remaining sites of interest. The number of sites is further refined into a long list using the qualitative method detailed in section 10 of this report.

10. Long List Development

The long list was created using the criteria shown in Table 9 below. This initial method of ranking the potential sites was purely quantitative in nature.

Table 9: Long List Criteria

Criteria
Total Available Area
Average Hydraulic Loading Rate
Average Slope

The long list criteria were determined as follows:

- The resulting ~60 sites found in the first-class exclusion process were joined with the underlying soil drainage data using the union tool in Arc GIS Pro. This allowed for the drainage classes of each option to be analyzed.
- Multiple soil drainage class polygons underlined each option and therefore a percentage was
 developed to show how much of each option contained each drainage class. To achieve this
 analysis, the available land area information was extracted from Arc GIS Pro and transferred to
 Excel. Here, the total area of each option was first found by summing the areas for all associated
 drainage class polygons. This allowed for the area of each drainage class to be given a percentage
 value for the area they make up of an option in relation to its total area.
- To come up with a numerical field that can be ranked, the percentage values of each drainage class are multiplied by its associated hydraulic loading rate (as calculated in section 6 of this report). This gives each option an indicative hydraulic loading rate which can then be used to score the drainage level of each option.
- The average slope of each option was calculated in Excel using the AVERAGE function for all soil polygons found within a site. This gives an indicative value for the slopes on-site for each option and allows for them to be scored against each other to find the options with the lowest average slope.

Using the output from the above analysis, scores can be set up for each of the long list criteria based on where an option sits for a certain criterion in relation to the other options. Percentiles were then used to create 10 possible scores for each criterion based on the results found for all 40 options. An example of this is shown in Table 10 below which details how options are scored for their total available area.

Percentile	Score
Below 10%	1
Below 20%, Above 10%	2
Below 30%, Above 20%	3
Below 40%, Above 30%	4
Below 50%, Above 40%	5
Below 60%, Above 50%	6

Table 10: Total Available Area Scoring

Below 70%, Above 60%	7
Below 80%, Above 70%	8
Below 90%, Above 80%	9
Above 90%	10

The scoring for each of the criterion were then used to develop the long list using the weightings shown in Table 11 below. Hydraulic loading rates were considered the most important factors for considering land disposal and therefore received a higher weighting. As slopes above 12° were excluded earlier this was deemed a less important criterion though it is noted that the lower the slope on-site, the better it is for land disposal and therefore it was included. Total available area allows for more options to be considered at the site but due to the small area needed for land disposal in Hihi was given the lowest weighting.

Table 11: Long List Weighting

Criteria	Weighting
Highest Total Available Area	17%
Highest Average Hydraulic Loading Rate	50%
Lowest Average Slope	33%

The weightings for each of the criteria were then multiplied by the associated score for each option to develop an overall ranking for each site. Based on this ranking, the top 10 sites were taken forward for further analysis using a multi-criteria analysis (MCA) which considered qualitative information. These 10 sites are included in Appendix B alongside the information used for the MCA. It is important to note that this does not rule out the remaining 50 options from consideration. Should the options taken forward prove unviable then additional sites from the available land list can be taken forward based on their ranking to be considered further.

Also included in Appendix B is the total available land in hectares. All sites identified have an available area of at least 1 Ha and therefore can support land disposal provided they have adequate soil drainage. This will need to be determined using on-site investigations which test the soils at key locations.

11. Multi-Criteria Analysis

Finally, a multi-criteria analysis (MCA) has been carried out to further rank the long list options. The MCA considers four additional criteria as shown in Table 11 below. The initial weighting of the criteria is as below, however, numerous different weighting scenarios were considered in a sensitivity analysis.

On top of the criteria listed in Table 12, bore locations and property ownership type (Public, Private, Maori) were found for each site. It was deemed that any bores onsite could be closed off before implementation of land disposal and therefore not considered in the MCA. Ownership type was excluded from the MCA and was instead set for later consideration should any sites be taken forward. However, in this case all 10 sites are on private freehold land.

Treaty settlement land was also considered following the MCA as an unlikeliness in the purchasing or use of the land. This is for both commercial and cultural redress treaty settlement land.

Table 12: MCA Criteria

Criteria	Weighting
Long List Rank	35%
Potential effects on Maori cultural sites (impacts on cultural values and sites)	25%
Distance to WWTP	20%
Existing Land Use (Land Cover, Statutory Considerations, SNA's)	20%

The initial long list ranking for each of the options was first recognized as a factor which needed to be considered due to its importance in site selection.

Impacts that the options could have on cultural sites and values was deemed an important consideration. This was achieved by locating all marae and NZAA sites within a range of 500 m of each site and evaluated the level of its cultural significance. An example of this is that one of the options held a marae at its center and would therefore show significant risk from a cultural perspective and would score low. However, this is an initial evaluation only, and a separate evaluation will have to be undertaken for any sites taken beyond the scope of this report. The additional evaluation will need to incorporate an engagement process with local iwi.

Distance to the wastewater treatment plant has been included to allow for cost differences in reticulation, as cost has not been included as a criterion in the MCA. This is due to an economic analysis being conducted by BECA for the Hihi land disposal report which has been deemed appropriate to use for this report given the similarities between the assessments.

Lastly, the existing land use has been determined by using the land cover database (LCDB), and locations of Significant Natural Areas (SNA) in the AOI. This was then verified using aerial photography with Photoblique. As with the drainage class, the land cover database is joined with the available land using a union in GIS and a percentage calculated for how much of the option is covered by certain types of land (e.g., High Production Exotic Grassland). SNA's are found in FNDC's geodatabase and if they cross one of the long-listed options, their impact on the usage of the site is determined and scored appropriately.

The results of this analysis can be seen below in Figures 9 - 10. Figure 9 shows the results of the chosen weighting from Table 12, where Figure 10 shows the variance exhibited by the sensitivity analysis in which differing weightings were compared. A score of 5 would represent a maximum score, whilst a score of 0 represents a minimum score for both figures.





Figure 9: MCA Results

Figure 9 shows that option 1 is the clear 1st preference for land disposal. This is due to its large land area which consists largely of high producing exotic grassland, ideal for land disposal. However, this land was identified as cultural redress land as part of a treaty settlement and therefore has been lowered in preference due to the associating difficulty with gaining use of the land.

The second and third preferred options are 10 and 5 respectively which both scored well in everything but cultural impact due to nearby Pa sites. These sites have been identified as the preferred sites and will be used for site specific economic analysis to be undertaken by Beca. This will result in a high-level assessment of the cost for disposal to land in Hihi and allow for it to be considered by council for a decision on further investigations.

All other options are viable and should be considered in order of rank should the sites above prove unviable for land disposal. Detailed accounts of each of the ten sites can be found in Appendix B.

Should none of these sites presented be viable for disposal to land, then an MCA will be conducted from the next ten options from the long list to be investigated.

A sensitivity analysis was also conducted as below in Figure 10 to confirm the original findings.





From this graph a consistent trend can be seen across the various scenarios indicating that the original weighting is reasonable. This gives confidence in the original weighting results and allows for the scoring to be followed up on for further investigations should that be supported by council.

12. Closing Remarks

The Hihi high-level economic analysis has been included as Appendix A which includes site specific costing undertaken for the top 2 ranked sites from this report. It is important to note that both these sites are privately owned but have a Pa located onsite and others in close proximity. Community engagement will be imperative to develop the relationships over time to properly consider land disposal as a viable option. Option 10 is much larger than option 5 however and includes 3 separate titles which makes a partial much easier. All three titles are large enough on their own to support disposal to land from the Hihi WWTP.

This analysis will be a determining factor for the potential development of a land disposal system at the Hihi WWTP. If the cost is too high for consideration, then the process of investigating the different options will stop here. However, if it is decided that the option is viable then negotiations will begin with the site owners. On-site testing will also be carried out to confirm the desktop analysis and investigate any unforeseen issues with the sites. This will include an assessment of potential environmental effects of the proposed treated wastewater discharge regime. Costs will also need to be revised and updated based upon the results of further technical and environmental investigations.

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Communications and Engagement Overview

Hihi Wastewater Treatment Plant (June 2022)

Purpose

The purpose of this overview is to support the '*Economic and Practicability Assessment for Discharge of Treated Wastewater to Land from the Hihi* Wastewater Treatment Plant' report to Council via the Infrastructure Committee. It is a summary of the full plan A3175626.

This plan outlines the communications and engagement undertaken with the community of Hihi on the wastewater treatment plant upgrade and discharge to land investigations.

Goals

The community engagement will support the project goal for Council to approve a process to upgrade the treatment plant and consider discharge to land.

Specific communications and engagement goals are:

- Staff can demonstrate consideration of the community and mana whenua views in developing the proposal
- The community feels consulted / engaged with and understands the extent of their influence
- The community is aligned with Council's recommendations

Identified Partners & Stakeholders

Table 1 below outlines the various partners and stakeholders who have been identified and contacted. For further information on these parties, see the full plan.

Table 1: Partners & Stakeholders Register

Partners & Stakeholders
Ngāti Kahu
Ngāti Kahu ki Whangaroa
Ngāpuhi/Ngāti Kahu ki Whaingāroa
Hihi residents in or near the area of benefit
Ratepayers Association
Connected property owners
Adjacent land and property owners who may benefit from an extended plant, should it be proposed

Engagement to date

Table 2 below provides the steps taken for engagement on the Hihi WWTP upgrade and consideration of discharge to land.

Step	Details	Status
1	Identify Partners & Stakeholders	Complete
2	Develop communications and engagement plan	Complete
3	Present at Ratepayers Association meeting to alert community to engagement	Complete
4	Initiate contact with iwi/hapu	Complete
5	Commission investigation and report to inform Council on options	Complete
6	Community meeting with follow-up survey to capture detailed views	Complete
7	Findings of report will inform next steps and provide material to develop options to take back to community	Complete
8	Workshop with EMs on consent renewals	Complete
9	Technical induction for Ngati Kahu with FNDC	Underway
10	Cultural induction for FNDC with Ngāti Kahu	Underway
11	Holding comms to community (Post reports)	Underway
12	Cultural Impact Assessment to be completed by Ruaiti hapu – will help to illustrate the effect(s) of the discharge on tangata whenua and cultural values.	Not yet underway

Key takeaways from this engagement for discharge to land investigations have been:

- General community of Hihi are fine with current discharge to an unnamed tributary of Hihi Beach. Main concern is the required upgrade at the wastewater treatment plant and the rating impact associated with it. Discharge to land would only add to the impact.
- An interest in a possible addition of a rock/trickling filter at the end constructed wetland directly before the discharge point has been mentioned in conversation.

AVERAGE CAPITAL Rate -										
per connection	Y1	Y2	Y3	¥4	Y5	Y6	Y7	Y8	Y9	Y10
Option Estimate	\$	\$ -	\$ -	\$ -	\$ 818.19	\$ 806.34	\$ 794.48	\$ 782.63	\$ 770.78	\$ 758.9
Option Estimate 30%	\$ -	\$ -	\$ -	\$ -	\$ 572.73	\$ 564.44	\$ 556.14	\$ 547.84	\$ 539.55	\$ 531.2
Option Estimate 50%	\$ -	\$ -	\$ -	\$ -	\$ 1,227.29	\$ 1,209.51	\$ 1,191.73	\$ 1,173.95	\$ 1,156.17	\$ 1,138.3

	Rate	based on					
OPERATING Rate per	opex spend on						
connection	0	ptions					
Option Estimate	\$	19.45					
Option Estimate 30%	\$	13.62					
Option Estimate 50%	Ś	29.18					

Current connections	CAPITAL	OPERATING
Connections	189	13038
Availability		
Pans		4071
Weighted Numbers	189	15481

				Cost Estimates								Depreciation										
		Average																				
	Total Spend	Depreciable																				
Asset Detail		Life	¥1	Y2	Y3	¥4	Y5	Y6	¥7	¥1	Y2	Y3	¥4	Y5	Y6	¥7	Y8	Y9	Y10			
Option Estimate																			_			
Pump Station	170,8	76 75				170,876				0	0	0	0	2,278	2,278	2,278	2,278	2,278	2,278			
PE 100mm Pipe	557,3	67 35				557,367				0	0	0	0	15,925	15,925	15,925	15,925	15,925	15,925			
Electrical Control / telemetry	77,6	71 20				77,671				0	0	0	0	3,884	3,884	3,884	3,884	3,884	3,884			
Irrigation System	411,6	57 30				411,657				0	0	0	0	13,722	13,722	13,722	13,722	13,722	13,722			
Planting or irrigation System	740,9	82 20				740,982				0	0	0	0	37,049	37,049	37,049	37,049	37,049	37,049			
Storage Pond	368,1	61 50				368,161				0	0	0	0	7,363	7,363	7,363	7,363	7,363	7,363			
Storage Pond Fencing	29,8	26 20				29,826				0	0	0	0	1,491	1,491	1,491	1,491	1,491	1,491			
Irrigation Pump with Shed and Slab	38,8	36 35				38,836				0	0	0	0	1,110	1,110	1,110	1,110	1,110	1,110			
Electrical Control / Power from	46,6	03 20				46,603				0	0	0	0	2,330	2,330	2,330	2,330	2,330	2,330			
Consents Including AEE	155,3	42 15				155,342				0	0	0	0	10,356	10,356	10,356	10,356	10,356	10,356			
Oper	252.6	40 0								0	0	0	0	0	0	0	0	0	0			
opex											-											
	2,850,9	60	0	0		0 2,597,320	0	0	0	0	0	0	0	95,508	95,508	95,508	95,508	95,508	95,508			
Option Estimate -30% Pump Station	119.6	13 75				119 613					0	0	0	1 595	1 595	1 595	1 595	1 595	1 595			
PE 100mm Pine	390.1	57 35				390 157				0	0	0	0	11 147	11 147	11 147	11 147	11 147	11 147			
Electrical Control / telemetry	54.3	70 20				54,370				ō	0	0	0	2,718	2.718	2.718	2.718	2,718	2,718			
Irrigation System	288.1	60 30				288.160				ō	0	0	0	9,605	9,605	9,605	9,605	9,605	9.605			
Planting or irrigation System	518.6	87 20				518 687				0	0	0	0	25 934	25 934	25 934	25 934	25 934	25 934			
Storage Pond	257.7	13 50				257 713				0	0	0	0	5 154	5 154	5 154	5 154	5 154	5 1 5 4			
Storage Pond Fencing	20.8	78 20				20.878				o i	0	0	ó	1.044	1.044	1.044	1.044	1.044	1.044			
Irrigation Pump with Shed and Slab	27.1	85 35				27.185				0	o	0	0	777	777	777	777	777	777			
Electrical Control / Power from	32.6	22 20				32.622				0	0	0	ó	1.631	1.631	1.631	1.631	1.631	1.631			
Consents Including AEE	108,7	39 15				108,739				o	0	0	0	7,249	7,249	7,249	7,249	7,249	7,249			
Opex	177,5	48 0								0	0	0	0	0	0	0	0	0	o			
	1,995,6	72	0	0		0 1,818,124	0	0	0	0	0	0	0	66,856	66,856	66,856	66,856	66,856	66,856			
Option Estimate + 50%																						
Pump Station	256,3	14 75				256,314				0	0	0	0	3,418	3,418	3,418	3,418	3,418	3,418			
PE 100mm Pipe	836,0	51 35				836,051				0	0	0	0	23,887	23,887	23,887	23,887	23,887	23,887			
Electrical Control / telemetry	116,5	07 20				116,507				0	0	0	0	5,825	5,825	5,825	5,825	5,825	5,825			
Irrigation System	617,4	85 30				617,485				0	0	0	0	20,583	20,583	20,583	20,583	20,583	20,583			
Planting or irrigation System	1,111,4	73 20				1,111,473				0	0	0	0	55,574	55,574	55,574	55,574	55,574	55,574			
Storage Pond	552,2	41 50				552,241				0	0	0	0	11,045	11,045	11,045	11,045	11,045	11,045			
Storage Pond Fencing	44,7	39 20				44,739				0	0	0	0	2,237	2,237	2,237	2,237	2,237	2,237			
Irrigation Pump with Shed and Slab	58,2	53 35				58,253				0	0	0	0	1,664	1,664	1,664	1,664	1,664	1,664			
Electrical Control / Power from	69,9	04 20				69,904				0	0	0	0	3,495	3,495	3,495	3,495	3,495	3,495			
Consents Including AEE	233,0	13 15				233,013				0	0	0	0	15,534	15,534	15,534	15,534	15,534	15,534			
						0				0	0	0	0	0	0	0	0	0	0			
Opex	380,4	60 0	0							0	0	0	0	0	0	0	0	0	0			
	4,276,4	40	0	0		0 3,895,980	0	0	0	0	0	0	0	143,262	143,262	143,262	143,262	143,262	143,262			

										¥1	¥2	Y3	¥4	Y5	Y6	¥7	Y8	Y9	Y10
										0.022	0.018	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
				Debt R	tepayment									Interest					
				100										107		10	140	140	
	12	13	14	15	10	1/	18	19	110	11	12	13	14	15	10	1/	18	19	110
0	0	0	0	8,544	8,544	8,544	8,544	8,544	8,544	0	0	0	0	2,563	2,435	2,307	2,179	2,051	1,922
0	0	0	0	27,868	27,868	27,868	27,868	27,868	27,868	0	0	0	0	8,361	7,942	7,524	7,106	6,688	6,270
0	0	0	0	3,884	3,884	3,884	3,884	3,884	3,884	0	0	0	0	1,165	1,107	1,049	990	932	874
0	0	0	0	20,583	20,583	20,583	20,583	20,583	20,583	0	0	0	0	6,175	5,866	5,557	5,249	4,940	4,631
0	0	0	0	37,049	37,049	37,049	37,049	37,049	37,049	0	0	0	0	11,115	10,559	10,003	9,448	8,892	8,336
0	0	0	0	18,408	18,408	18,408	18,408	18,408	18,408	0	0	0	0	5,522	5,246	4,970	4,694	4,418	4,142
0	0	0	0	1,491	1,491	1,491	1,491	1,491	1,491	0	0	0	0	447	425	403	380	358	336
0	0	0	0	1,942	1,942	1,942	1,942	1,942	1,942	0	0	0	0	583	553	524	495	466	437
0	0	0	0	2,330	2,330	2,330	2,330	2,330	2,330	0	0	0	0	699	664	629	594	559	524
0	0	0	0	7,767	7,767	7,767	7,767	7,767	7,767	0	0	0	0	2,330	2,214	2,097	1,981	1,864	1,748
U	U	0	0	0	0	U	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0
0	0	0	0	129,866	129,866	129,866	129,866	129,866	129,866	0	0	0	0	38,960	37,012	35,064	33,116	31,168	29,220
0	0	0	0	5,981	5,981	5,981	5,981	5,981	5,981	0	0	0	0	1,794	1,704	1,615	1,525	1,435	1,346
0	0	0	0	19,508	19,508	19,508	19,508	19,508	19,508	0	0	0	0	5,852	5,560	5,267	4,975	4,682	4,389
0	0	0	0	2,718	2,718	2,718	2,718	2,718	2,718	0	0	0	0	816	775	734	693	652	612
0	0	0	0	14,408	14,408	14,408	14,408	14,408	14,408	0	0	0	0	4,322	4,106	3,890	3,674	3,458	3,242
0	0	0	0	25,934	25,934	25,934	25,934	25,934	25,934	0	0	0	0	7,780	7,391	7,002	6,613	6,224	5,835
0	0	0	0	12,886	12,886	12,886	12,886	12,886	12,886	0	0	0	0	3,866	3,672	3,479	3,286	3,093	2,899
0	0	0	0	1,044	1,044	1,044	1,044	1,044	1,044	0	0	0	0	313	298	282	266	251	235
0	0	0	0	1,359	1,359	1,359	1,359	1,359	1,359	0	0	0	0	408	387	367	347	326	306
0	0	0	0	1,631	1,631	1,631	1,631	1,631	1,631	0	0	0	0	489	465	440	416	391	367
0	0	0	0	5,437	5,437	5,437	5,437	5,437	5,437	0	0	0	0	1,631	1,550	1,468	1,386	1,305	1,223
U	U	U	U	U	U	U	0	0	0		U	U	U	U	U	U	U	U	U
0	0	0	0	90.906	90,906	90,906	90,906	90,906	90,906		0	0	0	27.272	25,908	24.545	23,181	21.817	20.454
				,	,	,	,	,	,							,		,	
0	0	0	0	12,816	12,816	12,816	12,816	12,816	12,816	0	0	0	0	3,845	3,652	3,460	3,268	3,076	2,884
0	0	0	0	41,803	41,803	41,803	41,803	41,803	41,803	0	0	0	0	12,541	11,914	11,287	10,660	10,033	9,406
0	0	0	0	5,825	5,825	5,825	5,825	5,825	5,825	0	0	0	0	1,748	1,660	1,573	1,485	1,398	1,311
0	0	0	0	30,874	30,874	30,874	30,874	30,874	30,874	0	0	0	0	9,262	8,799	8,336	7,873	7,410	6,947
0	0	0	0	55,574	55,574	55,574	55,574	55,574	55,574	0	0	0	0	16,672	15,838	15,005	14,171	13,338	12,504
0	0	0	0	27,612	27,612	27,612	27,612	27,612	27,612	0	0	0	0	8,284	7,869	7,455	7,041	6,627	6,213
0	0	0	0	2,237	2,237	2,237	2,237	2,237	2,237	0	0	0	0	671	638	604	570	537	503
0	0	0	0	2.913	2,913	2.913	2,913	2,913	2.913	0	0	0	0	874	830	786	743	699	655
ō	0	ō	ō	3,495	3,495	3,495	3,495	3,495	3,495	0	0	0	0	1.049	996	944	891	839	786
0	0	ō	0	11.651	11.651	11.651	11.651	11.651	11.651	0	0	0	0	3,495	3,320	3.146	2.971	2.796	2.671
ō	0	0	ō	0	0	0	0	0	0	0	0	0	ō	0	0	0	0	0	0
										· · ·									
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	ō	Ö	194,799	194,799	194,799	194,799	194,799	194,799	0	0	0	0	58,440	55,518	52,596	49,674	46,752	43,830

Interest Rates

AVERAGE CAPITAL Rate -										
per connection	Y1	Y2	Y3	¥4	Y5	Y6	Y7	Y8	Y9	Y10
Option Estimate	\$	\$ -	\$ -	\$ -	\$ 859.75	\$ 847.18	\$ 834.61	\$ 822.04	\$ 809.47	\$ 796.9
Option Estimate 30%	\$ -	\$ -	\$ -	\$ -	\$ 601.83	\$ 593.03	\$ 584.23	\$ 575.43	\$ 566.63	\$ 557.8
Option Estimate 50%	\$ -	\$ -	\$ -	\$ -	\$ 1,289.63	\$ 1,270.77	\$ 1,251.91	\$ 1,233.06	\$ 1,214.20	\$ 1,195.3

	Rate	based on
OPERATING Rate per	opex	spend on
connection	0	ptions
Option Estimate	\$	20.41
Option Estimate 30%	\$	14.28
Option Estimate 50%	\$	30.61

Current connections	CAPITAL	OPERATING
Connections	189	13038
Availability		
Pans		4071
Weighted Numbers	189	15481

					Cost Estimates						Depreciation											
		Ave	age																			
	Total Spend	Dep	reciable																			
Asset Detail		Life		¥1	Y2	Y3	25	5/26	Y5	¥6		¥7	¥1	Y2	Y3	25/26	26/27	27/28	28/29	29/30	30/31	31/32
Option Estimate																						
Pump Station	170	,665	75					170,665					0	0	0	0	2,276	2,276	2,276	2,276	2,276	2,276
PE 100mm Pipe	717	,259	35					717,259					0	0	0	0	20,493	20,493	20,493	20,493	20,493	20,493
Electrical Control / telemetry	77	,575	20					77,575					0	0	0	0	3,879	3,879	3,879	3,879	3,879	3,879
Irrigation System	411	,148	30					411,148					0	0	0	0	13,705	13,705	13,705	13,705	13,705	13,705
Planting or irrigation System	740	,066	20					740,066					0	0	0	0	37,003	37,003	37,003	37,003	37,003	37,003
Storage Pond	367	,706	50					367,706					0	0	0	0	7,354	7,354	7,354	7,354	7,354	7,354
Storage Pond Fencing	29	,789	20					29,789					0	0	0	0	1,489	1,489	1,489	1,489	1,489	1,489
Irrigation Pump with Shed and Slab	38	,788	35					38,788					0	0	0	0	1,108	1,108	1,108	1,108	1,108	1,108
Electrical Control / Power from	46	,545	20					46,545					0	0	0	0	2,327	2,327	2,327	2,327	2,327	2,327
Consents Including AEE	155	,150	15					155,150					0	0	0	0	10,343	10,343	10,343	10,343	10,343	10,343
													0	0	0	0	0	0	0	0	0	0
Opex	266	,060	0										0	0	0	0	0	0	0	0	0	0
	3,020	,750		0	0		0 2	2,754,690	0		0	0	0	0	0	0	99,978	99,978	99,978	99,978	99,978	99,978
Option Estimate - 30%																						-
Pump Station	119	.466	75					119.466					0	0	0	0	1.593	1.593	1.593	1.593	1.593	1.593
PE 100mm Pipe	502	.081	35					502.081					0	0	o l	0	14.345	14.345	14,345	14.345	14,345	14,345
Electrical Control / telemetry	54	303	20					54 303					0	-	0	0	2 715	2 715	2 715	2 715	2 715	2 715
Irrigation System	297	803	20					297 902							-	-	9 5 9 3	9 5 9 3	9 593	9 593	9 5 9 3	9 5 9 2
Dianting of insightion System	E10	005	20					E18 046						0		0	35,000	35,003	35,003	25,003	25,002	25,002
Storage Deed	310	204	20					318,040						0	0	0	23,502	23,502	23,502 E 149	£ 149	£ 1.40	£ 149
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Storage Pond Pencing	20	,852	20					20,852					0	0	0	0	1,043	1,043	1,043	1,043	1,043	1,043
irrigation Pump with shed and slab	2/	,151	35					27,151					0	0	0	0	//6	//6	//6	//6	//6	//6
Electrical Control / Power from	32	,582	20					32,582					0	0	0	0	1,629	1,629	1,629	1,629	1,629	1,629
Consents Including AEE	108	,605	15					108,605					0	0	0	0	7,240	7,240	7,240	7,240	7,240	7,240
Opex	186	,242	0										0	0	0	0	0	0	0	0	0	0
	2,114	,525		0	0		0 1	1,928,283	0		0	0	0	0	0	0	69,985	69,985	69,985	69,985	69,985	69,985
Option Estimate + 50%																						_
Pump Station	255	,998	75					255,998					0	0	0	0	3,413	3,413	3,413	3,413	3,413	3,413
PE 100mm Pipe	1,075	,888,	35				1	1,075,888					0	0	0	0	30,740	30,740	30,740	30,740	30,740	30,740
Electrical Control / telemetry	116	,363	20					116,363					0	0	0	0	5,818	5,818	5,818	5,818	5,818	5,818
Irrigation System	616	,722	30					616,722					0	0	0	0	20,557	20,557	20,557	20,557	20,557	20,557
Planting or irrigation System	1,110	,099	20				1	1,110,099					0	0	0	0	55,505	55,505	55,505	55,505	55,505	55,505
Storage Pond	551	.559	50					551.559					0	0	0	0	11.031	11.031	11.031	11.031	11.031	11.031
Storage Pond Fencing	44	.683	20					44.683					0	0	o l	0	2.234	2.234	2,234	2.234	2.234	2,234
Irrigation Pump with Shed and Slah	58	181	35					58 181					0	-	0	0	1 662	1 662	1 662	1 662	1 662	1.662
Electrical Control / Power from	69	818	20					69.818					0	-	0	0	3 491	3 491	3 491	3 491	3 491	3 491
Consents Including AFF	22.2	725	15					222 725					-	-		-	15 515	15 515	15 515	15 515	15 515	15 515
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Opex	399	,090	0	0									0	0	0	0	0	0	0	0	0	0
	4,531	,125		0	0		0 4	4,132,035	0		0	0	0	0	0	0	149,967	149,967	149,967	149,967	149,967	149,967

 Interest Rates

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Y1	Y2	Y3	25/26	26/27	27/28	28/29	29/30	30/31	31/32	¥1	Y2	Y3	25/26	26/27	27/28	28/29	29/30	30/31	31/32
0	0	0	0	8,533	8,533	8,533	8,533	8,533	8,533	0	0	0	0	2,560	2,432	2,304	2,176	2,048	1,920
0	0	0	0	35,863	35,863	35,863	35,863	35,863	35,863	0	0	0	0	10,759	10,221	9,683	9,145	8,607	8,069
0	0	0	0	20 55 7	20.557	20 557	20 55 7	20.557	20 557	0	0	0	0	6 167	5,950	5,550	5 242	4 034	4 625
0	0	0	0	37.003	37 003	37 003	37.003	37 003	37.003	0	0	0	0	11 101	10 546	9 991	9 436	8,881	8 326
0	0	0	0	18.385	18,385	18.385	18.385	18,385	18.385	0	0	0	0	5.516	5.240	4,964	4,688	4,412	4.137
0	0	0	0	1,489	1,489	1,489	1,489	1,489	1,489	0	0	0	0	447	424	402	380	357	335
0	0	0	0	1,939	1,939	1,939	1,939	1,939	1,939	0	0	0	0	582	553	524	495	465	436
0	0	0	0	2,327	2,327	2,327	2,327	2,327	2,327	0	0	0	0	698	663	628	593	559	524
0	0	0	0	7,758	7,758	7,758	7,758	7,758	7,758	0	0	0	0	2,327	2,211	2,095	1,978	1,862	1,745
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	137,735	137,735	137,735	137,735	137,735	137,735	0	0	0	0	41,320	39,254	37,188	35,122	33,056	30,990
									_										
0	0	0	0	5 973	5 973	5 973	5 973	5 973	5 973	0	0	0	0	1 792	1 702	1.613	1 5 2 3	1 4 3 4	1 344
ō	0	0	ō	25.104	25.104	25.104	25,104	25,104	25.104	0	0	0	0	7.531	7.155	6,778	6,402	6.025	5.648
0	0	0	0	2,715	2,715	2,715	2,715	2,715	2,715	0	0	0	0	815	774	733	692	652	611
0	0	0	0	14,390	14,390	14,390	14,390	14,390	14,390	0	0	0	0	4,317	4,101	3,885	3,669	3,454	3,238
0	0	0	0	25,902	25,902	25,902	25,902	25,902	25,902	0	0	0	0	7,771	7,382	6,994	6,605	6,217	5,828
0	0	0	0	12,870	12,870	12,870	12,870	12,870	12,870	0	0	0	0	3,861	3,668	3,475	3,282	3,089	2,896
0	0	0	0	1,043	1,043	1,043	1,043	1,043	1,043	0	0	0	0	313	297	282	266	250	235
0	0	0	0	1,358	1,358	1,358	1,358	1,358	1,358	0	0	0	0	407	387	367	346	326	305
0	0	0	0	1,629	1,629	1,629	1,629	1,629	1,629	0	0	0	0	489	464	440	415	391	367
U	U	U	U	5,430	5,430	5,430	5,430	5,430	5,430	0	0	U	U	1,629	1,548	1,400	1,385	1,303	1,222
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	96,414	96,414	96,414	96,414	96,414	96,414	0	0	0	0	28,924	27,478	26,032	24,586	23,139	21,693
									_										
0	0	0	0	12,800	12,800	12,800	12,800	12,800	12,800	0	0	0	0	3,840	3,648	3,456	3,264	3,072	2,880
0	0	0	0	53,794	53,794	53,794	53,794	53,794	53,794	0	0	0	0	16,138	15,331	14,524	13,718	12,911	12,104
0	0	0	0	5,818	5,818	5,818	5,818	5,818	5,818	0	0	0	0	1,745	1,658	1,5/1	1,484	1,396	1,309
0	0	0	0	50,836	30,836 55,505	30,836 55,505	30,836	30,836	30,836		0	0	0	9,251	5,788	8,326	7,863	7,401	12 490
0	0	0	0	27 579	27 579	27 579	27 579	27 579	27 572		0	0	0	8 27 2	7 860	7 4 46	7 032	6 6 1 9	6 205
0	0	0	0	2.234	2.234	2.234	2.234	2.234	2.234	ő	ő	0	0	670	637	603	570	536	503
ő	0	0	0	2,909	2.909	2.909	2,909	2,909	2,909	ő	ő	0	0	873	829	785	742	698	655
0	0	0	ō	3,491	3,491	3,491	3,491	3,491	3,491	0	0	0	0	1,047	995	943	890	838	785
0	0	0	0	11,636	11,636	11,636	11,636	11,636	11,636	0	0	0	0	3,491	3,316	3,142	2,967	2,793	2,618
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ō	0	0	0	206,602	206,602	206,602	206,602	206,602	206,602	0	0	0	0	61,981	58,881	55,782	52,683	49,584	46,485



Authors: Hugh Dixon and Hannah Riley

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Hōngongoi 2020

27 July 2022



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Making sense of the numbers

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1 Introduction

The Far North District Council (FNDC) commissioned Business and Economic Research Limited (BERL) to conduct data analysis of rates affordability across the Far North District and prepare a report outlining rates affordability issues.

1.1 Scope of the report

BERL provided the FNDC with an analysis of the prevalence of rates unaffordability and affordability across the District, for eight different constructed household types. We constructed typical household types based on the residential properties in the Far North. It should be noted that the report only looked at residential rates. Establishing affordability at a commercial level is not feasible and was not considered. BERL determined the median, lower quartile and upper quartile household affordability for the District, as well as smaller geographic areas within the District.

1.2 Rates as a funding mechanism

The Local Government (Rating) Act (LGRA) came into effect in 2002, authorising local and regional authorities to set, assess, and collect rates to fund local government activities. A key aim of the LGRA is to establish clarity, certainty, and stability in rating matters.

The three main purposes of the LGRA are:

- To provide local authorities with flexible powers to set, assess, and collect rates
- To ensure rates reflect decisions made in a transparent and consultative manner
- To provide for processes and information to ensure ratepayers can identify and understand their liability for rates.¹

Funding mechanisms, as set out in the LGRA, including general rates, such as value based general rates or uniform annual general charges (UAGC), and targeted rates, allow local and regional authorities to raise revenue from the community as a whole. As well as those who use or generate need for a service or amenity, or specified groups or categories of ratepayers. These funding tools and their manner of collection, determines the cost of local services and affects affordability of services for individual households.

1.3 Affordability

Affordability in the context of rates has two aspects:

- The cost relative to income (and wealth to the extent that wealth can be converted into income)
- The ability of ratepayers to earn greater income in the future from the spending of the rates, e.g. investment in infrastructure that will allow an individual to earn higher incomes in the future.

Sustainability can be defined as the ability to meet present needs without compromising the needs of future generations. Sustainability represents an extended definition of affordability in the sense that sustainability introduces a longer timeframe in which the issues of fairness and risk must be considered. Within this report, we will explore the cost of rates relative to income.

 <u>http://www.localcouncils.govt.nz/lgip.nsf/wpg_url/Policy-Local-Government-Legislation-Local-Government-(Rating)-Act-2002</u>
 <u>Retrieved</u>
 22 November 2018



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Local and regional authorities within New Zealand have a strong reliance on property rates as a taxing instrument, and this may create some affordability issues particularly for households with low or fixed incomes, such as superannuitants, or high property values. Affordability issues may also arise where households are facing financial adversity due to the portion of income spent on housing costs, including rates. Therefore, districts with high levels of low incomes or fixed incomes, will generally face issues regarding affordability. Changes in demographics, i.e. aging populations and changes in household composition, may likewise have implications on affordability.²

The Local Government Funding Review stated:

"Basing rates on the value of property means that for some individuals with reasonably valuable property but limited income, paying rates can cause financial strain. All councils will have some ratepayers in this situation, even if all the issues outlined (rating differentials and statutory rating exemptions) are addressed, and rates are set at a level that is reasonable and affordable for the majority of the community".³

Concerns about the impact of rates increases on low-income households led to the establishment of The Local Government Rates Inquiry (the Inquiry) in 2007. The resulting report, known as the Shand Report after the Chair David Shand, concluded that rates affordability was the ability to pay rates without serious economic difficulty. The inquiry noted that in 2004, the average rates paid by households represented 2.51 percent for all groups and although there are likely to be pockets of affordability in all types of household, they did not consider rates affordability was a problem for the average household. As an approximate benchmark, affordability concerns will arise where rates exceed five percent of gross household income.⁴

The report also suggested that particular household types will demonstrate rates affordability issues:

- Households in the lowest 40 percent of incomes
- One parent households with children
- One person households
- Households whose principal source of income is New Zealand Superannuation.

These households predominantly have low or fixed incomes.

Consequently, we have used the affordability benchmarks of:

• Rates as a percentage of gross household income, where affordability issues are likely to arise when rates exceed five percent.

To indicate rates affordability issues in each of the tables in this report, we have highlighted every table row grey, where total rates exceed five percent of the household's gross income.

⁴ Funding Local Government (2007). Wellington: Department of Internal Affairs



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² Local government funding and financing: Issues Paper (2018). New Zealand Productivity Commission

³ Local Government Funding Review – a discussion paper (2015). National Council of Local Government New Zealand

1.4 Household types

Eight household types were used in this report. The following household types were derived from a case study report on rates affordability in agreement with Far North District Council (FNDC):

- Single superannuitant with no other income
- Married superannuitant with no other income
- Single adult earning average wage
- Single adult with two children, in receipt of Sole Parent Support
- Single adult with two children, earning average wage
- Couple with two children, one adult earning average wage
- Couple with two children, two adults earning average wage
- Couple with no children at home, two adults earning average wage (based in Auckland).

For all case study households, we compared the differences between lower, median and high quartile rates within each of the following areas:

- Total Far North District
- Te Hiku Ward
- Bay of Islands Whangaroa Ward
- Kaikohe-Hokianga Ward
- Smaller areas (Kerikeri, Kaikohe, Opononi and Omapere, Kaitaia, Ahipara, Russell, Paihia, and Karikari Peninsula).

Rates figures include all local and regional rates, included targeted rates, and have a breakdown of local authority and FNDC values.

1.5 Data sources

The data in this report has been collected from the following sources:

- Statistics New Zealand (StatsNZ)
 - o 2018 Census
 - Household Labour Force Survey (income module), June 2019
- Inland Revenue Department
- Ministry of Social Development
- Far North District Council.

Data on household income within each local authority for each type of household was used.

1.6 Methodology

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A rates affordability model was built for each of the wards in the Far North. Within each model the income has been calculated separately for the eight household types from section 1.4.



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The affordability of the relevant combined local and regional rates at the lower quartile, median and high quartile were then assessed against gross income.

1.7 Assumptions and limitations

A number of assumptions and limitations were made, and these are described in the following subsections.

1.7.1 Income data

As shown in Table 1, the Northland region had the sixth lowest average weekly income for employed people aged between 20 and 65 years of age, at \$1,150, as at June 2019. This is \$86 lower than the New Zealand average of \$1,236, or just over \$4,500 annually. The average weekly income for people aged between 20 and 65 years of age has been used because this fits with the five household types analysed in this report.

Table 1 Average weekly income for employed between 20 and 65 years of age, all regions, 2019

Region	Average weekly income 2019 (\$)
Northland Region	1,150
Auckland Region	1,307
Waikato Region	1,188
Bay of Plenty Region	1,153
Gisborne/Hawkes Bay Regions	1,113
Taranaki Region	1,117
Manawatu-Wanganui Region	1,083
Wellington Region	1,363
Nelson/Tasman/Marlborough/West Coast Regions	1,102
Canterbury Region	1,221
Otago Region	1,083
Southland Region	1,234
New Zealand	1,236

The figures in the table are regional figures, so to estimate the average weekly earnings for employed people in the Far North District requires a number of adjustments as noted below.

For cases where wages and salary were the assumed source of income, the June 2019 weekly average individual income for people aged between 20 and 65, from the Household Labour Force Survey has been used. To calculate the annual average individual incomes, this weekly average individual income has been multiplied by 52, which does assume that effectively every employed member of the household is on a fixed salary rather than an hourly wage.

In addition, because the Household Labour Force Survey can only provide regional income, the Northland Region average income has been used. Finally we have used the average employed individual income, and total individual income from 2018 Census data to find the ratio between the overall Northland region average employed income to the Far North District Council average

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employed income. As well as the individual ward and smaller locations average employed income. This allowed the model to adjust the June 2019 average income data to more fairly represent the Far North District Council area, the individual wards and the smaller locations within the District.

For example:

Northland regional average weekly income (June 2019) for employed people aged between 20 and 65 years of age = \$1,150 per week.

Multiplying this weekly figure by 52 yielded the Northland regional average annual income for employed people aged between 20 and 65 years of age = \$59,777.

Taking the Far North District council average income as at the 2018 Census: \$42,931 and dividing it by the Northland regional average income as at the 2018 Census: \$47,194 yield the following income adjustment factor = 0.91.

Multiplying the adjustment factor by the annual regional average income yielded an average annual income for employed people aged between 20 and 65 years of age = \$54,378.

New Zealand Superannuation data used for single and married people on superannuation, and Sole Parent Support rates are accurate at 1 April 2019.

1.7.2 Rates data

FNDC supplied the rating data for the rating year 2019/20, inclusive of GST. The following rating information for 41,064 rating units within the District was provided:

- Unique identifier code
- Capital value
- Land value
- Land use description / Rating category
- Ward location
- FNDC fixed rates
- FNDC targeted rates
- Northland Regional Council (NRC) fixed rates
- NRC targeted rates
- Total assessed rates
- Non-rateable flag
- Location of property owner (inside or outside of the District).

Using this information, we removed all non-residential properties as identified using the land use description/rating category variable. This left 22,762 initial residential property rating units within the District.

BERL undertook a number of steps to ensure that every residential property used in the final calculation phase met the following criteria:

- Had both FNDC and NRC rates assessed for the rating unit
- Had a ward location (Te Hiku Ward, Kaikohe-Hokianga Ward, or Bay of Islands-Whangaroa Ward)



Introduction

- Did not have a non-rateable flag assigned to it; this flag indicates that the flagged property does not receive a rates bill
- Did not have a residential-special accommodation, residential-public communal-licensed, residential-public communal-unlicensed, residential-communal residence dependant or other use, or residential-vacant land use description. These rating units cannot be categorised as a standard dwelling for a household to reside in, being comprised of rest homes, motels, hotels, college accommodation, or vacant land.

This process ensured that each residential property included in the rating affordability assessment had a dwelling that a household could reside in, had rating information that could be used to assess rating affordability, and fitted into the standard residential property category.

Therefore, the following steps were undertaken to ensure each property met the criteria above:

- Removal of all properties with a non-rateable flag indicator
- Removal of all properties with non FNDC and NRC rates assessed for them
- Removal of all properties with a residential-special accommodation, residential-public communal-licensed, residential-public communal-unlicensed, residential-communal residence dependant or other use, or residential-vacant land use description
- Removal of all properties without a ward location (Te Hiku Ward, Kaikohe-Hokianga Ward, or Bay of Islands-Whangaroa Ward).

Removal of these properties resulted in 17,446 of the original 22,762 residential properties being usable for the rating affordability assessment. As part of the assessment, BERL identified residential properties flagged as having owners living inside the District, as well those residential properties flagged as having owners living outside the District. Out of the 17,446 residential properties, 13,083 were flagged as having owners living inside the District, while 4,363 were flagged as having owners living outside the District.

The last step, undertaken prior to the assessment, was to identify those properties listed with multiple dwellings, and to adjust the total rates for the number of dwellings on the property. For example, a rating unit with two dwellings had their FNDC and NRC rates divided by two for assessing rating affordability, as it would be reasonable to assume that two different families could be living in the two dwellings. To do this BERL undertook the following steps:

- Assumed that rating units with land use descriptions of residential-bach and residential-single unit (other than bach) only had a single dwelling on the rating unit. This covers 16,600 of the residential properties
- For the 846 properties with the land use description of residential-multi unit and residentialmulti use, the top 100 properties in terms of total rates were manually investigated by BERL to determine the total number of dwellings present on each rating unit
- Analysis of the remaining 746 properties revealed that rating units with a capital value in excess of \$200,000 higher than their land value generally had two dwellings on the rating unit, while those with a capital value lower than \$200,000 higher than their land value, generally only had one dwelling on the rating unit. Therefore, BERL has assumed that the 561 rating units with a capital value in excess of \$200,000 higher than their land value had two dwellings, and that the 185 rating units with a capital value lower than \$200,000 higher than their land value had their land value had only one dwelling.

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For each of the eight household types, BERL determined the median, lower quartile and upper quartile properties of each of four locations (Total, Te Hiku Ward, Kaikohe-Hokianga Ward, and Bay of Islands-Whangaroa Ward) and compared their FNDC, NRC, and total rates against gross income.

1.7.3 Household data

The 2018 Census data provided the number of households by household type. This information was used for the types of households, except for those households normally resident in Auckland, who own secondary houses in the Far North District. The Census is focussed on people's main residences, there is no information on secondary homes available from the Census.

Therefore, to estimate the number of households in this eighth household type, we examined the number of empty dwellings across the District as well as the three wards and eight smaller areas, from the 2018 Census. Empty dwellings in the Census are dwellings in which no one is a usual resident. These dwellings include those rented long-term but not currently occupied, those that are rented to short-term occupiers, those that are secondary homes, and other empty dwellings.

To derive an estimate of the eighth household type (two working adults, based in Auckland), BERL has combined the number of empty dwellings in an area, with information on the location of Airbnb and other short-term rentals, and information from the Far North District Council on the locations of dwellings owned by those outside the District. 2018 Household counts by household type for the Far North District, and the three wards can be found in section 4 of this report.

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Introduction

2 Map of Far North District areas

Figure 1 Map of Far North District study areas





Map of Far North District areas

3 Total Far North District

The Far North District is the northern most territorial authority District of New Zealand, consisting of the northern part of the Northland Peninsula in the North Island. It stretches from North Cape and Cape Reinga in the north, down to the Bay of Islands, Hokianga and the town of Kaikohe.

Overall BERL analysed the rates affordability for 17,446 residential properties in the Far North District.

There were a significant number of households with rates affordability issues in the Far North District. These were:

- Single superannuitant with no other income
- Married superannuitants with no other income
- Single adult with two children in receipt of Sole Parent Support households.

These households had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels. For example, the average household income for a single superannuitant with no other income was \$24,722, if the superannuitant was paying rates at the lower quartile (\$2,113 as shown in Table 2), then Table 3 shows that 8.5 percent of their income was spent on rates. If the superannuitant was paying rates at the upper quartile (\$2,985 as shown in Table 2), the superannuitant would be spending 12.1 percent of their income on rates (Table 3).

The upper quartile for single adult earning average wage, single adult with two children, earning average wage, and couple with two children, one adult earning average wage households exceed five percent of gross household income. Whereas, couple with two children, two adults earning average wage and couple with no children at home, two adults earning average wage households do not have any categories in excess of five percent of gross household income.

The highest upper quartile for total rates levels is 15.1 percent for single adult with two children in receipt of Sole Parent Support households. Not surprisingly, the lowest upper quartile is 2.3 percent for couple with no children at home, two adults earning average wages households.

The minimum rates payable in the Far North District is \$141 and the maximum is \$25,211. This explains the difference between the median rates value (\$2,512) and the average rates value (\$2,622).

As stated in section 1.7.2, to indicate rates affordability issues in each of the tables in this report it is highlighted in grey.

Far North District average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$54,378
- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$54,378
- Couple with two children, one adult earning average wage \$54,378

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Total Far North District

- Couple with two children, two adults earning average wage \$108,756
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.

Table 2 Rates payable, Far North District

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Lower Quartile	1,841	272	2,113
Median	2,215	297	2,512
Upper Quartile	2,728	257	2,985

Table 3 Total rates as a percentage of gross income by household type, Far North District

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
Single superannuitant, no other income	Lower Quartile	7.4	1.1	8.5
	Median	9.0	1.2	10.2
	Upper Quartile	11.0	1.0	12.1
	Lower Quartile	4.9	0.7	5.6
Married superannuitant, no other income	Median	5.9	0.8	6.7
	Upper Quartile	7.3	0.7	8.0
	Lower Quartile	3.4	0.5	3.9
Single working person (no kids)	Median	4.1	0.5	4.6
	Upper Quartile	5.0	0.5	5.5
	Lower Quartile	9.1	1.3	10.4
Single adult, two children, on benefit	Median	11.0	1.5	12.4
	Upper Quartile	13.5	1.3	14.8
	Lower Quartile	3.4	0.5	3.9
Single adult, two children, employed	Median	4.1	0.5	4.6
	Upper Quartile	5.0	0.5	5.5
	Lower Quartile	3.4	0.5	3.9
Couple, two children, one employed	Median	4.1	0.5	4.6
	Upper Quartile	5.0	0.5	5.5
Couple, two children, both employed	Lower Quartile	1.7	0.3	1.9
	Median	2.0	0.3	2.3
	Upper Quartile	2.5	0.2	2.7
Two working adults, based in Auckland	Lower Quartile	1.4	0.2	1.6
	Median	1.6	0.2	1.8
	Upper Quartile	2.0	0.2	2.2

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Total Far North District

4 Ratepayer and household counts

As noted in section 3, BERL analysed the rates affordability for 17,446 residential properties in the Far North District. Figure 2 below provides a breakdown of that overall number by ward. As shown in the table the largest share of ratepayer properties were located in the Bay of Islands-Whangaroa Ward (48 percent), followed by Te Hiku Ward (34 percent), and finally with the smallest share of properties is the Kaikohe-Hokianga Ward (17 percent).

Figure 2 Ratepayer count by ward, 2018



In order to provide household counts for each of the eight household types examined in this report, BERL provided an estimate of the number of households per household type.

In 2018, the Far North District had a usual resident population of 65,250, living in 22,773 households, or around 2.9 people per household. As shown in Table 4 the seven usual resident household types examined in this report comprise 8,433 households or 37 percent of total households. The largest individual household types are married superannuitants with 3,060 households, followed by single superannuitants with 2,544.

It should be noted that the 14,085 remaining households cover a wide range of household types, including superannuitant still working; single adults with one child, or three or more; couples with no children, one child, or three or more; and single adults flatting with others. Lastly, the 763 households of two working adults, based in Auckland are not included in the total household counts for the Far North District. This is because these households are usually resident in Auckland, not the Far North District.

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Ratepayer and household counts

Table 4 Household counts by household type, Far North District, 2018

Household type	Household count	Percentage of total
Single superannuitant, no other income	2,471	10.9
Married superannuitant, no other income	2,961	13.0
Single working person (no kids)	1,504	6.6
Single adult, two children, on benefit	409	1.8
Single adult, two children, employed	102	0.4
Couple, two children, one employed	749	3.3
Couple, two children, both employed	1,123	4.9
Remaining households	13,442	59.1
Total occupied households	22,761	100.0
Two working adults, based in Auckland	763	

Table 5 Household counts by household type, Far North District, 2013 and 2018

Household type	Household count 2013	Household count 2018	Percentage change
Single superannuitant, no other income	2,302	2,471	7.3
Married superannuitant, no other income	2,731	2,961	8.4
Single working person (no kids)	1,408	1,504	6.8
Single adult, two children, on benefit	384	409	6.5
Single adult, two children, employed	96	102	6.5
Couple, two children, one employed	695	749	7.7
Couple, two children, both employed	1,043	1,123	7.7
Remaining households	13,987	13,442	-3.9
Total occupied households	22,646	22,761	0.5
Two working adults, based in Auckland	1,178	763	-35.2

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Ratepayer and household counts

5 Conclusion

The data analysis of rates affordability in the Far North District highlighted that particular household types will have rates affordability issues and that these households predominantly have low or fixed incomes.

The following households had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels in each of the areas:

- Single superannuitant with no other income
- Married superannuitant with no other income
- Single adult with two children, in receipt of Sole Parent Support.

As affordability issues are likely to arise when rates exceed five percent, these households likely face rates affordability issues.

There were many other pockets of rates affordability issues across the areas and the household types, these household types were usually:

- Single adult earning average wage
- Single adult with two children, earning average wage
- Couple with two children, one adult earning average wage.

Whereas the following households did not have rates affordability issues in any of the areas:

- Couple with two children, two adults earning average wage
- Couple with no children at home, two adults earning average wage (based in Auckland).



Conclusion

6 Impact of COVID-19

The sudden onset of the COVID-19 pandemic will have had a profound effect on the Far North District economy, as well as across New Zealand. Unfortunately there is a significant lag time before this can be seen in the official statistics. However, we expect economic activity to slow over the next few years, followed in all probability by a sluggish recovery to 2030. In the short term, the Far North District economy will have falling GDP and rising unemployment, which will result in a decrease in household income and consumer spending. This will have a significant impact upon wellbeing and the community. The ongoing effects on jobs, income and wellbeing will persist for years to come.

COVID-19 has, and will continue to, impact upon the role of central and local government. As household and businesses' spending decreases, it will be left for government to underpin spending and provide confidence in future plans. Continued spending and a focus on the four wellbeings (social, economic, environmental, and cultural) will improve outcomes for people and communities. The impact of COVID-19 has caused local authorities across the country to reassess their long term planning assumptions and documents in an environment of extreme uncertainty. As COVID-19 increases uncertainty, it is paramount that the wellbeing kaupapa remains unchanged.

The social services sector is the largest employer in the Far North District; people employed in the social services sector will be largely insulated against the impact of COVID-19. The primary sector is also a large employer. The primary sector has been deemed essential services, enabling these businesses to continue to operate throughout the COVID-19 lockdown. It is likely that people employed in the primary sector will also be reasonably insulated against the impact of COVID-19.

However, the retail and accommodation sector is likely to face severe challenges in the coming years which may result in increasing unemployment. As the retail and accommodation sector is another large employer in the Far North District, this will cause a significant loss in terms of jobs, income and ultimately negatively impact upon wellbeing. The tourism industry is already feeling the weight of COVID-19 through a drastic drop in revenue. The wage subsidy has helped save jobs in the short-term. However, this is a short-term solution and uncertainty remains about the long-term future of these jobs.

The impact on employment and income may affect people's ability to pay rates. We are aware of pressures across many councils to hold rates increases. We must advise that this kicking the can down the road is likely to jeopardise the delivery of future services. This will act directly against the kaupapa of ensuring the wellbeing (across all four dimensions) of current and future generations. We understand the need to put a realistic Long Term Plan (LTP) together, but the use of deferred payment schemes (rather than zero rates increases) should be explored. Similarly, the use of debt funding should be explored (as should a revision of the debt-ceiling constraint) – given the likelihood of incredibly low interest rates for the foreseeable future. Further, alternative funding mechanisms from central government should be actively pursued (together with LGNZ). Conversely, an untowardly narrow perspective on protecting Council finances will be reflected in deficits across other wellbeing domains – as has been experienced in recent years.

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Impact of COVID-19

Appendix A Household counts by ward

Table 6 provides the estimated household counts for the Te Hiku, Kaikohe-Hokianaga, and the Bay of Islands-Whangaroa wards, respectively. As shown in the table the Bay of Islands-Whangaroa Ward has the largest number of households with 10,746, with the Te Hiku Ward having the second largest number of households with 7,089, while the Kaikohe-Hokianaga Ward has 4,938 households.

Table 6 Household counts by household type, wards, 2018

Household type	Te Hiku Ward	Kaikohe-Hokianga Ward	Bay of Islands-Whangaroa Ward
Single superannuitant, no other income	744	528	1,199
Married superannuitant, no other income	793	557	1,611
Single working person (no kids)	437	376	691
Single adult, two children, on benefit	118	111	179
Single adult, two children, employed	30	28	45
Couple, two children, one employed	196	172	381
Couple, two children, both employed	293	259	571
Remaining households	4,418	4,190	6,222
Total occupied households	7,029	6,221	10,899
Two working adults, based in Auckland	182	140	442

Table 7 Percentage share of households by household type, wards, 2018

Household type	Te Hiku Ward	Kaikohe-Hokianga Ward	Bay of Islands-Whangaroa Ward
Single superannuitant, no other income	10.6	8.5	11.0
Married superannuitant, no other income	11.3	9.0	14.8
Single working person (no kids)	6.2	6.0	6.3
Single adult, two children, on benefit	1.7	1.8	1.6
Single adult, two children, employed	0.4	0.4	0.4
Couple, two children, one employed	2.8	2.8	3.5
Couple, two children, both employed	4.2	4.2	5.2
Remaining households	62.9	67.4	57.1
Total occupied households	100.0	100.0	100.0
Two working adults, based in Auckland			

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Appendix B Te Hiku Ward

Te Hiku Ward is the ward at the top of the Far North District as shown in Figure 1. For our analysis, we have examined 5,965 residential properties. The largest proportion of these residential properties by age group were those aged between 30 and 64 years (43 percent).

Figure 3 Percentage by broad age groups, Te Hiku Ward, 2018



Again, the following households face rates affordability issues as these households had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels:

- Single superannuitant with no other income
- Married superannuitant with no other income
- Single adult with two children, earning average wage.

The upper quartile is 5.3 percent for single adult earning average wage, single adult with two children, earning average wage, and couple with two children, one adult earning average wage households. Therefore, these groups may face rates affordability issues also.

For example, the average household income for a single adult with two children, in receipt of Sole Parent Support was \$24,722. As the average rates cost was \$2,588 (Table 8), this would be 12.8 percent of their income (Table 9).

There were no significant outliers (minimum is \$197 and maximum is \$7,870) and therefore a small variance between the median (\$2,588) and the average (\$2,524).

Te Hiku Ward average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$52,213

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Appendix B Te Hiku Ward
- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$52,213
- Couple with two children, one adult earning average wage \$52,213
- Couple with two children, two adults earning average wage \$104,425
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.

Table 8 Rates payable, Te Hiku Ward

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Lower Quartile	2,095	218	2,313
Median	2,334	254	2,588
Upper Quartile	2,502	260	2,762

Table 9 Total rates as a percentage of gross income by household type, Te Hiku Ward

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	8.5	0.9	9.4
Single superannuitant, no other income	Median	9.4	1.0	10.5
	Upper Quartile	10.1	1.1	11.2
	Lower Quartile	5.6	0.6	6.2
Married superannuitant, no other income	Median	6.2	0.7	6.9
	Upper Quartile	6.7	0.7	7.4
	Lower Quartile	4.0	0.4	4.4
Single working person (no kids)	Median	4.5	0.5	5.0
	Upper Quartile	4.8	0.5	5.3
	Lower Quartile	10.4	1.1	11.4
Single adult, two children, on benefit	Median	11.5	1.3	12.8
	Upper Quartile	12.4	1.3	13.7
	Lower Quartile	4.0	0.4	4.4
Single adult, two children, employed	Median	4.5	0.5	5.0
	Upper Quartile	4.8	0.5	5.3
	Lower Quartile	4.0	0.4	4.4
Couple, two children, one employed	Median	4.5	0.5	5.0
	Upper Quartile	4.8	0.5	5.3
	Lower Quartile	2.0	0.2	2.2
Couple, two children, both employed	Median	2.2	0.2	2.5
	Upper Quartile	2.4	0.2	2.6
	Lower Quartile	1.5	0.2	1.7
Two working adults, based in Auckland	Median	1.7	0.2	1.9
	Upper Quartile	1.8	0.2	2.0



Appendix B Te Hiku Ward

Appendix C Bay of Islands-Whangaroa Ward

Bay of Islands-Whangaroa Ward is the eastern ward of the Far North District. For our analysis, we have examined 8,450 residential properties. Again, those aged between 30 and 64 years old make up the biggest percentage of these residential properties.

Figure 4 Percentage by broad age groups, Bay of Island-Whangaroa Ward, 2018



Households that fall under the following categories face rates affordability issues:

- Single superannuitant with no other income
- Married superannuitant with no other income
- Single adult with two children, in receipt of Sole Parent Support.

These households had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels.

The highest upper quartile percentage was 15.8 percent for single adults with two children, in receipt of Sole Parent Support. This means that they are paying 15.8 percent of their income (\$20,223) on rates at the upper quartile (\$3,205 in Table 10).

The maximum rates payable was \$25,211, while the minimum is \$355. Therefore, there was some variance between the median (\$2,673) and the average (\$2,815).

Bay of Islands-Whangaroa Ward average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$59,897
- Single adult with two children, in receipt of Sole Parent Support \$20,223

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Appendix C Bay of Islands-Whangaroa Ward

- Single adult with two children, earning average wage \$59,897
- Couple with two children, one adult earning average wage \$59,897
- Couple with two children, two adults earning average wage \$119,793
- Couple with no children at home, two adults earning average wage (based in Auckland) -\$135,929.

Table 10 Rates payable, Bay of Islands-Whangaroa Ward

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Lower Quartile	1,898	276	2,174
Median	2,437	236	2,673
Upper Quartile	2,937	267	3,205

Table 11 Total rates as a percentage of gross income by household type, Bay of Islands-Whangaroa Ward

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	7.7	1.1	8.8
Single superannuitant, no other income	Median	9.9	1.0	10.8
	Upper Quartile	11.9	1.1	13.0
	Lower Quartile	5.1	0.7	5.8
Married superannuitant, no other income	Median	6.5	0.6	7.1
	Upper Quartile	7.8	0.7	8.5
	Lower Quartile	3.2	0.5	3.6
Single working person (no kids)	Median	4.1	0.4	4.5
	Upper Quartile	4.9	0.4	5.4
	Lower Quartile	9.4	1.4	10.8
Single adult, two children, on benefit	Median	12.0	1.2	13.2
	Upper Quartile	14.5	1.3	15.8
	Lower Quartile	3.2	0.5	3.6
Single adult, two children, employed	Median	4.1	0.4	4.5
	Upper Quartile	4.9	0.4	5.4
	Lower Quartile	3.2	0.5	3.6
Couple, two children, one employed	Median	4.1	0.4	4.5
	Upper Quartile	4.9	0.4	5.4
	Lower Quartile	1.6	0.2	1.8
Couple, two children, both employed	Median	2.0	0.2	2.2
	Upper Quartile	2.5	0.2	2.7
	Lower Quartile	1.4	0.2	1.6
Two working adults, based in Auckland	Median	1.8	0.2	2.0
	Upper Quartile	2.2	0.2	2.4



Appendix C Bay of Islands-Whangaroa Ward

Appendix D Kaikohe-Hokianga Ward

Kaikohe-Hokianga Ward is the western ward of the Far North District. For our analysis, we have examined 3,031 residential properties. Of these residential properties, 16 percent are aged 65 years and over, 42 percent are aged between 30 and 64 years, 18 percent between 15 and 29 years, and 24 percent under 15 years.



Figure 5 Percentage by broad age groups, Kaikohe-Hokianga Ward, 2018

Even though there were less rates affordability issues in this ward, single superannuitant with no other income and single adult with two children, in receipt of Sole Parent Support households still had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels.

Married superannuitant with no other income; single working person (no kids); single adult employed with two children; and couple with one employed and two children households did not have rates in excess of five percent of gross household income in the lower quartile. However their median and upper quartile still exceeded five percent. For example, the average household income for married superannuitants with no other income is \$37,484. If they are paying median rates of \$2,434 (Table 12), then they are spending 6.5 percent of their income on rates (Table 13).

In Kaikohe-Hokianga the average (\$2,275) was below the median (\$2,434). The minimum was \$141 and the maximum is \$8,991.

Kaikohe-Hokianga Ward average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$46,585
- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$46,585

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Appendix D Kaikohe-Hokianga Ward

- Couple with two children, one adult earning average wage \$46,585
- Couple with two children, two adults earning average wage \$93,170
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.

Table 12 Rates payable, Kaikohe-Hokianga Ward

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Lower Quartile	1,397	241	1,638
Median	2,198	235	2,434
Upper Quartile	2,272	226	2,499

Table 13 Total rates as a percentage of gross income by household type, Kaikohe-Hokianga Ward

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	5.7	1.0	6.6
Single superannuitant, no other income	Median	8.9	1.0	9.8
	Upper Quartile	9.2	0.9	10.1
	Lower Quartile	3.7	0.6	4.4
Married superannuitant, no other income	Median	5.9	0.6	6.5
	Upper Quartile	6.1	0.6	6.7
	Lower Quartile	3.0	0.5	3.5
Single working person (no kids)	Median	4.7	0.5	5.2
	Upper Quartile	4.9	0.5	5.4
	Lower Quartile	6.9	1.2	8.1
Single adult, two children, on benefit	Median	10.9	1.2	12.0
	Upper Quartile	11.2	1.1	12.4
	Lower Quartile	3.0	0.5	3.5
Single adult, two children, employed	Median	4.7	0.5	5.2
	Upper Quartile	4.9	0.5	5.4
	Lower Quartile	3.0	0.5	3.5
Couple, two children, one employed	Median	4.7	0.5	5.2
	Upper Quartile	4.9	0.5	5.4
	Lower Quartile	1.5	0.3	1.8
Couple, two children, both employed	Median	2.4	0.3	2.6
	Upper Quartile	2.4	0.2	2.7
	Lower Quartile	1.0	0.2	1.2
Two working adults, based in Auckland	Median	1.6	0.2	1.8
	Upper Quartile	1.7	0.2	1.8

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Appendix D Kaikohe-Hokianga Ward

Appendix E Smaller areas within the Far North District

In addition to determining the rates affordability for the Far North District and its three main wards, we examined eight smaller areas within the wards which could be clearly defined within the rating unit database provided by FNDC. The eight smaller areas examined were:

- Kerikeri
- Kaikohe
- Opononi and Omapere
- Kaitaia
- Ahipara
- Paihia
- Russell
- Karikari Peninsula.

For each of the eight smaller areas, BERL examined the number of rating units owned by people living inside the District compared to the number of rating units owned by people living outside the District. For the first five areas listed above the number of units owned by people living outside the District were insufficient for analysis. Therefore, for these five areas (Kerikeri, Kaikohe, Opononi and Omapere, Kaitaia, and Ahipara) we only analysed the rating affordability of all residential properties.

For the three remaining areas (Paihia, Russell, and Karikari peninsula) there were sufficient rating units in both categories to warrant analysis. Therefore, for these three areas we examined the rating affordability of rating units split into two groups, those owned by people living in the District and those owned by people living outside the District.

Kerikeri

Kerikeri had rates affordability issues in the following categories:

- Single superannuitant with no other income
- Married superannuitant with no other income
- Single adult with two children, in receipt of Sole Parent Support.

There were also rates affordability issues for those in the upper quartile of the following categories:

- Single adult earning average wage
- Single adult with two children, earning average wage
- Couple with two children, one adult earning average wage.

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Kerikeri average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$59,102
- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$59,102
- Couple with two children, one adult earning average wage \$59,102
- Couple with two children, two adults earning average wage \$118,205
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.

Table 14 Rates payable, Kerikeri

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Lower Quartile	1,938	279	2,217
Median	2,190	282	2,472
Upper Quartile	2,672	316	2,988



Table 15 Total rates as a percentage of gross income by household type, Kerikeri

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	7.8	1.1	9.0
Single superannuitant, no other income	Median	8.9	1.1	10.0
	Upper Quartile	10.8	1.3	12.1
	Lower Quartile	5.2	0.7	5.9
Married superannuitant, no other income	Median	5.8	0.8	6.6
	Upper Quartile	7.1	0.8	8.0
	Lower Quartile	3.3	0.5	3.8
Single working person (no kids)	Median	3.7	0.5	4.2
	Upper Quartile	4.5	0.5	5.1
	Lower Quartile	9.6	1.4	10.9
Single adult, two children, on benefit	Median	10.8	1.4	12.2
	Upper Quartile	13.1	1.6	14.7
	Lower Quartile	3.3	0.5	3.8
Single adult, two children, employed	Median	3.7	0.5	4.2
	Upper Quartile	4.5	0.5	5.1
	Lower Quartile	3.3	0.5	3.8
Couple, two children, one employed	Median	3.7	0.5	4.2
	Upper Quartile	4.5	0.5	5.1
	Lower Quartile	1.6	0.2	1.9
Couple, two children, both employed	Median	1.9	0.2	2.1
	Upper Quartile	2.3	0.3	2.5
	Lower Quartile	1.4	0.2	1.6
Two working adults, based in Auckland	Median	1.6	0.2	1.8
	Upper Quartile	2.0	0.2	2.2

Kaikohe

Again, single superannuitant with no other income, married superannuitant with no other income, single adult with two children, in receipt of Sole Parent Support households had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels. These households therefore face rates affordability issues. In addition for Kaikohe the single adult earning average wage, single adult with two children, earning average wage, and couple with two children, one adult earning average wage also had rates affordability issues across lower quartile, median, and upper quartile total rates levels.

Kaikohe average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$44,894

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Appendix E Smaller areas within the Far North District

- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$44,894
- Couple with two children, one adult earning average wage \$44,894
- Couple with two children, two adults earning average wage \$89,788
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.

Table 16 Rates payable, Kaikohe

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Lower Quartile	2,157	219	2,376
Median	2,226	223	2,450
Upper Quartile	2,255	225	2,480

Table 17 Total rates as a percentage of gross income by household type, Kaikohe

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	8.7	0.9	9.6
Single superannuitant, no other income	Median	9.0	0.9	9.9
	Upper Quartile	9.1	0.9	10.0
	Lower Quartile	5.8	0.6	6.3
Married superannuitant, no other income	Median	5.9	0.6	6.5
	Upper Quartile	6.0	0.6	6.6
	Lower Quartile	4.8	0.5	5.3
Single working person (no kids)	Median	5.0	0.5	5.5
	Upper Quartile	5.0	0.5	5.5
	Lower Quartile	10.7	1.1	11.7
Single adult, two children, on benefit	Median	11.0	1.1	12.1
	Upper Quartile	11.2	1.1	12.3
	Lower Quartile	4.8	0.5	5.3
Single adult, two children, employed	Median	5.0	0.5	5.5
	Upper Quartile	5.0	0.5	5.5
	Lower Quartile	4.8	0.5	5.3
Couple, two children, one employed	Median	5.0	0.5	5.5
	Upper Quartile	5.0	0.5	5.5
	Lower Quartile	2.4	0.2	2.6
Couple, two children, both employed	Median	2.5	0.2	2.7
	Upper Quartile	2.5	0.3	2.8
	Lower Quartile	1.6	0.2	1.7
Two working adults, based in Auckland	Median	1.6	0.2	1.8
	Upper Quartile	1.7	0.2	1.8



Appendix E Smaller areas within the Far North District

Opononi and Omapere

The Opononi and Omapere area had significant rates affordability issues. The following categories had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels:

- Single superannuitant with no other income
- Married superannuitant with no other income
- Single adult earning average wage
- Single adult with two children, in receipt of Sole Parent Support
- Single adult with two children, earning average wage
- Couple with two children, one adult earning average wage.

There are only two categories which do not have rates affordability issues, these categories involve two adults earning average wage.

Opononi and Omapere average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$44,094
- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$44,094
- Couple with two children, one adult earning average wage \$44,094
- Couple with two children, two adults earning average wage \$88,189
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.



Appendix E Smaller areas within the Far North District

Table 18 Rates payable, Opononi and Omapere

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Lower Quartile	2,555	259	2,814
Median	3,060	249	3,309
Upper Quartile	3,238	261	3,499

Table 19 Total rates as a percentage of gross income by household type, Opononi and Omapere

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	10.3	1.0	11.4
Single superannuitant, no other income	Median	12.4	1.0	13.4
	Upper Quartile	13.1	1.1	14.2
	Lower Quartile	6.8	0.7	7.5
Married superannuitant, no other income	Median	8.2	0.7	8.8
	Upper Quartile	8.6	0.7	9.3
	Lower Quartile	5.8	0.6	6.4
Single working person (no kids)	Median	6.9	0.6	7.5
	Upper Quartile	7.3	0.6	7.9
	Lower Quartile	12.6	1.3	13.9
Single adult, two children, on benefit	Median	15.1	1.2	16.4
	Upper Quartile	16.0	1.3	17.3
	Lower Quartile	5.8	0.6	6.4
Single adult, two children, employed	Median	6.9	0.6	7.5
	Upper Quartile	7.3	0.6	7.9
	Lower Quartile	5.8	0.6	6.4
Couple, two children, one employed	Median	6.9	0.6	7.5
	Upper Quartile	7.3	0.6	7.9
	Lower Quartile	2.9	0.3	3.2
Couple, two children, both employed	Median	3.5	0.3	3.8
	Upper Quartile	3.7	0.3	4.0
	Lower Quartile	1.9	0.2	2.1
Two working adults, based in Auckland	Median	2.3	0.2	2.4
	Upper Quartile	2.4	0.2	2.6

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Kaitaia

Kaitaia has rates affordability issues; there were six categories with rates in excess of five percent of gross household income across lower, median and high quartile total rates levels. These categories were as follows:

- Single superannuitant with no other income
- Married superannuitant with no other income
- Single adult earning average wage
- Single adult with two children, in receipt of Sole Parent Support
- Single adult with two children, earning average wage
- Couple with two children, one adult earning average wage.

There were only two categories which did not have rates affordability issues, these categories involve two adults earning average wage.

Kaitaia average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$46,076
- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$46,076
- Couple with two children, one adult earning average wage \$46,076
- Couple with two children, two adults earning average wage \$92,151
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.

Table 20 Rates payable, Kaitaia

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Lower Quartile	2,141	281	2,422
Median	2,083	545	2,628
Upper Quartile	2,152	550	2,702

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Table 21 Total rates as a percentage of gross income by household type, Kaitaia

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	8.7	1.1	9.8
Single superannuitant, no other income	Median	8.4	2.2	10.6
	Upper Quartile	8.7	2.2	10.9
	Lower Quartile	5.7	0.7	6.5
Married superannuitant, no other income	Median	5.6	1.5	7.0
	Upper Quartile	5.7	1.5	7.2
	Lower Quartile	4.6	0.6	5.3
Single working person (no kids)	Median	4.5	1.2	5.7
	Upper Quartile	4.7	1.2	5.9
	Lower Quartile	10.6	1.4	12.0
Single adult, two children, on benefit	Median	10.3	2.7	13.0
	Upper Quartile	10.6	2.7	13.4
	Lower Quartile	4.6	0.6	5.3
Single adult, two children, employed	Median	4.5	1.2	5.7
	Upper Quartile	4.7	1.2	5.9
	Lower Quartile	4.6	0.6	5.3
Couple, two children, one employed	Median	4.5	1.2	5.7
	Upper Quartile	4.7	1.2	5.9
	Lower Quartile	2.3	0.3	2.6
Couple, two children, both employed	Median	2.3	0.6	2.9
	Upper Quartile	2.3	0.6	2.9
	Lower Quartile	1.6	0.2	1.8
Two working adults, based in Auckland	Median	1.5	0.4	1.9
	Upper Quartile	1.6	0.4	2.0

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Ahipara

Ahipara has one of the widest ranges in terms of rates affordability, with a range of between 1.8– 16.1 percent. Single adult with two children, in receipt of Sole Parent Support had the highest upper quartile of 16.1 percent, while two working adults based in Auckland had the lowest upper quartile of 2.4 percent.

Again, single superannuitant with no other income, married superannuitant with no other income, and single adult with two children, in receipt of Sole Parent Support households had rates affordability issues. Each of these categories had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels.

Ahipara average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$57,938
- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$57,938
- Couple with two children, one adult earning average wage \$57,938
- Couple with two children, two adults earning average wage \$115,877
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.

Table 22 Rates payable, Ahipara

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Lower Quartile	2,162	240	2,402
Median	2,392	255	2,647
Upper Quartile	2,962	293	3,255

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Table 23 Total rates as a percentage of gross income by household type, Ahipara

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	8.7	1.0	9.7
Single superannuitant, no other income	Median	9.7	1.0	10.7
	Upper Quartile	12.0	1.2	13.2
	Lower Quartile	5.8	0.6	6.4
Married superannuitant, no other income	Median	6.4	0.7	7.1
	Upper Quartile	7.9	0.8	8.7
	Lower Quartile	3.7	0.4	4.1
Single working person (no kids)	Median	4.1	0.4	4.6
	Upper Quartile	5.1	0.5	5.6
Single adult, two children, on benefit	Lower Quartile	10.7	1.2	11.9
	Median	11.8	1.3	13.1
	Upper Quartile	14.6	1.4	16.1
	Lower Quartile	3.7	0.4	4.1
Single adult, two children, employed	Median	4.1	0.4	4.6
	Upper Quartile	5.1	0.5	5.6
	Lower Quartile	3.7	0.4	4.1
Couple, two children, one employed	Median	4.1	0.4	4.6
	Upper Quartile	5.1	0.5	5.6
	Lower Quartile	1.9	0.2	2.1
Couple, two children, both employed	Median	2.1	0.2	2.3
	Upper Quartile	2.6	0.3	2.8
	Lower Quartile	1.6	0.2	1.8
Two working adults, based in Auckland	Median	1.8	0.2	1.9
	Upper Quartile	2.2	0.2	2.4

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Appendix E Smaller areas within the Far North District

Russell

Across the categories and levels those who live outside Russell tend to have greater rates affordability issues. The highest upper quartile was for single adult with two children, in receipt of Sole Parent Support from outside Russell (23.2 percent).

The following categories have rates affordability issues across the lower quartile, median and upper quartile:

- Single superannuitant with no other income, both resident owners and non-resident owners
- Married superannuitant with no other income, both resident owners and non-resident owners
- Single adult with two children, in receipt of Sole Parent Support, both resident owners and non-resident owners.

The following categories have rates affordability issues in the median and upper quartile categories, but not the lower quartile:

- Single adult earning average wage, both resident owners and non-resident owners
- Single adult with two children, earning average wage, both resident owners and non-resident owners
- Couple with two children, one adult earning average wage, both resident owners and non-resident owners.

Russell average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$62,591
- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$62,591
- Couple with two children, one adult earning average wage \$62,591
- Couple with two children, two adults earning average wage \$125,182
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.

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Table 24 Rates payable, Russell

		FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
	Lower Quartile	1,996	280	2,276
Resident owners	Median	3,101	282	3,382
	Upper Quartile	3,848	332	4,180
	Lower Quartile	2,721	256	2,977
Non-resident owners	Median	3,589	314	3,904
	Upper Quartile	4,337	364	4,702

Table 25 Total rates as a percentage of gross income by household type, resident owners, Russell

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	8.1	1.1	9.2
Single superannuitant, no other income	Median	12.5	1.1	13.7
	Upper Quartile	15.6	1.3	16.9
	Lower Quartile	5.3	0.7	6.1
Married superannuitant, no other income	Median	8.3	0.8	9.0
	Upper Quartile	10.3	0.9	11.2
	Lower Quartile	3.2	0.4	3.6
Single working person (no kids)	Median	5.0	0.5	5.4
	Upper Quartile	6.1	0.5	6.7
	Lower Quartile	9.9	1.4	11.3
Single adult, two children, on benefit	Median	15.3	1.4	16.7
	Upper Quartile	19.0	1.6	20.7
	Lower Quartile	3.2	0.4	3.6
Single adult, two children, employed	Median	5.0	0.5	5.4
	Upper Quartile	6.1	0.5	6.7
	Lower Quartile	3.2	0.4	3.6
Couple, two children, one employed	Median	5.0	0.5	5.4
	Upper Quartile	6.1	0.5	6.7
	Lower Quartile	1.6	0.2	1.8
Couple, two children, both employed	Median	2.5	0.2	2.7
	Upper Quartile	3.1	0.3	3.3
	Lower Quartile	1.5	0.2	1.7
Two working adults, based in Auckland	Median	2.3	0.2	2.5
	Upper Quartile	2.8	0.2	3.1

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Appendix E Smaller areas within the Far North District

Table 26 Total rates as a percentage of gross income by household type, non-resident owners, Russell

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	11.0	1.0	12.0
Single superannuitant, no other income	Median	14.5	1.3	15.8
	Upper Quartile	17.5	1.5	19.0
	Lower Quartile	7.3	0.7	7.9
Married superannuitant, no other income	Median	9.6	0.8	10.4
	Upper Quartile	11.6	1.0	12.5
	Lower Quartile	4.3	0.4	4.8
Single working person (no kids)	Median	5.7	0.5	6.2
	Upper Quartile	6.9	0.6	7.5
	Lower Quartile	13.5	1.3	14.7
Single adult, two children, on benefit	Median	17.7	1.6	19.3
	Upper Quartile	21.4	1.8	23.2
	Lower Quartile	4.3	0.4	4.8
Single adult, two children, employed	Median	5.7	0.5	6.2
	Upper Quartile	6.9	0.6	7.5
	Lower Quartile	4.3	0.4	4.8
Couple, two children, one employed	Median	5.7	0.5	6.2
	Upper Quartile	6.9	0.6	7.5
	Lower Quartile	2.2	0.2	2.4
Couple, two children, both employed	Median	2.9	0.3	3.1
	Upper Quartile	3.5	0.3	3.8
	Lower Quartile	2.0	0.2	2.2
Two working adults, based in Auckland	Median	2.6	0.2	2.9
	Upper Quartile	3.2	0.3	3.5

Paihia

Rates affordability issues were substantial in Paihia. Households, both resident owners and nonresident owners of Paihia, had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels in most categories. These categories were:

- Single superannuitant with no other income
- Married superannuitant with no other income
- Single adult with two children, in receipt of Sole Parent Support
- Single adult earning average wage, outside of Paihia
- Single adult with two children, earning average wage, non-resident owners
- Couple with two children, one adult earning average wage, non-resident owners.



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Appendix E Smaller areas within the Far North District

The following categories had rates affordability issues in the median and upper quartile categories, but not the lower quartile:

- Single adult earning average wage, resident owners
- Single adult with two children, earning average wage, resident owners
- Couple with two children, one adult earning average wage, resident owners.

Paihia average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$58,004
- Single adult with two children, in receipt of Sole Parent Support \$20,223
- Single adult with two children, earning average wage \$58,004
- Couple with two children, one adult earning average wage \$58,004
- Couple with two children, two adults earning average wage \$116,007
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.



Table 27 Rates payable, Paihia

		FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
	Lower Quartile	2,535	241	2,775
Resident owners	Median	2,897	265	3,162
	Upper Quartile	3,265	289	3,554
	Lower Quartile	2,724	253	2,978
Non-resident owners	Median	3,093	278	3,370
	Upper Quartile	4,215	259	4,474

Table 28 Total rates as a percentage of gross income by household type, resident owners, Paihia

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	10.3	1.0	11.2
Single superannuitant, no other income	Median	11.7	1.1	12.8
	Upper Quartile	13.2	1.2	14.4
	Lower Quartile	6.8	0.6	7.4
Married superannuitant, no other income	Median	7.7	0.7	8.4
	Upper Quartile	8.7	0.8	9.5
	Lower Quartile	4.4	0.4	4.8
Single working person (no kids)	Median	5.0	0.5	5.5
	Upper Quartile	5.6	0.5	6.1
	Lower Quartile	12.5	1.2	13.7
Single adult, two children, on benefit	Median	14.3	1.3	15.6
	Upper Quartile	16.1	1.4	17.6
	Lower Quartile	4.4	0.4	4.8
Single adult, two children, employed	Median	5.0	0.5	5.5
	Upper Quartile	5.6	0.5	6.1
	Lower Quartile	4.4	0.4	4.8
Couple, two children, one employed	Median	5.0	0.5	5.5
	Upper Quartile	5.6	0.5	6.1
	Lower Quartile	2.2	0.2	2.4
Couple, two children, both employed	Median	2.5	0.2	2.7
	Upper Quartile	2.8	0.2	3.1
	Lower Quartile	1.9	0.2	2.0
Two working adults, based in Auckland	Median	2.1	0.2	2.3
	Upper Quartile	2.4	0.2	2.6

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Appendix E Smaller areas within the Far North District

Table 29 Total rates as a percentage of gross income by household type, non-resident owners, Paihia

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	11.0	1.0	12.0
Single superannuitant, no other income	Median	12.5	1.1	13.6
	Upper Quartile	17.0	1.0	18.1
	Lower Quartile	7.3	0.7	7.9
Married superannuitant, no other income	Median	8.3	0.7	9.0
	Upper Quartile	11.2	0.7	11.9
	Lower Quartile	4.7	0.4	5.1
Single working person (no kids)	Median	5.3	0.5	5.8
	Upper Quartile	7.3	0.4	7.7
Single adult, two children, on benefit	Lower Quartile	13.5	1.3	14.7
	Median	15.3	1.4	16.7
	Upper Quartile	20.8	1.3	22.1
	Lower Quartile	4.7	0.4	5.1
Single adult, two children, employed	Median	5.3	0.5	5.8
	Upper Quartile	7.3	0.4	7.7
	Lower Quartile	4.7	0.4	5.1
Couple, two children, one employed	Median	5.3	0.5	5.8
	Upper Quartile	7.3	0.4	7.7
	Lower Quartile	2.3	0.2	2.6
Couple, two children, both employed	Median	2.7	0.2	2.9
	Upper Quartile	3.6	0.2	3.9
	Lower Quartile	2.0	0.2	2.2
Two working adults, based in Auckland	Median	2.3	0.2	2.5
	Upper Quartile	3.1	0.2	3.3

Karikari Peninsula

Again, both inside and outside of Karikari Peninsula, single superannuitant with no other income households, married superannuitants with no other income households, single adult with two children in receipt of Sole Parent Support households had rates in excess of five percent of gross household income across lower, median and high quartile total rates levels.

Karikari peninsula average household income by household composition

Household income for the following household types was used:

- Single superannuitant with no other income \$24,722
- Married superannuitants with no other income \$37,484
- Single adult earning average wage \$55,184
- Single adult with two children, in receipt of Sole Parent Support \$20,223

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Appendix E Smaller areas within the Far North District

- Single adult with two children, earning average wage \$55,184
- Couple with two children, one adult earning average wage \$55,184
- Couple with two children, two adults earning average wage \$110,367
- Couple with no children at home, two adults earning average wage (based in Auckland) \$135,929.

Table 30 Rates payable, Karikari Peninsula

		FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
	Lower Quartile	2,163	237	2,400
Resident owners	Median	2,360	311	2,670
	Upper Quartile	2,738	276	3,014
	Lower Quartile	2,255	244	2,498
Non-resident owners	Median	2,502	260	2,762
	Upper Quartile	2,997	293	3,290



Appendix E Smaller areas within the Far North District

Table 31 Total rates as a percentage of gross income by household type, resident owners, Karikari Peninsula

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	8.7	1.0	9.7
Single superannuitant, no other income	Median	9.5	1.3	10.8
	Upper Quartile	11.1	1.1	12.2
	Lower Quartile	5.8	0.6	6.4
Married superannuitant, no other income	Median	6.3	0.8	7.1
	Upper Quartile	7.3	0.7	8.0
	Lower Quartile	3.9	0.4	4.3
Single working person (no kids)	Median	4.3	0.6	4.8
	Upper Quartile	5.0	0.5	5.5
Single adult, two children, on benefit	Lower Quartile	10.7	1.2	11.9
	Median	11.7	1.5	13.2
	Upper Quartile	13.5	1.4	14.9
	Lower Quartile	3.9	0.4	4.3
Single adult, two children, employed	Median	4.3	0.6	4.8
	Upper Quartile	5.0	0.5	5.5
	Lower Quartile	3.9	0.4	4.3
Couple, two children, one employed	Median	4.3	0.6	4.8
	Upper Quartile	5.0	0.5	5.5
	Lower Quartile	2.0	0.2	2.2
Couple, two children, both employed	Median	2.1	0.3	2.4
	Upper Quartile	2.5	0.3	2.7
	Lower Quartile	1.6	0.2	1.8
Two working adults, based in Auckland	Median	1.7	0.2	2.0
	Upper Quartile	2.0	0.2	2.2

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Appendix E Smaller areas within the Far North District

Table 32 Total rates as a percentage of gross income by household type, non-resident owners, Karikari Peninsula

Household type		FNDC rates (%)	NRC rates (%)	Total rates (%)
	Lower Quartile	9.1	1.0	10.1
Single superannuitant, no other income	Median	10.1	1.1	11.2
	Upper Quartile	12.1	1.2	13.3
	Lower Quartile	6.0	0.6	6.7
Married superannuitant, no other income	Median	6.7	0.7	7.4
	Upper Quartile	8.0	0.8	8.8
	Lower Quartile	4.1	0.4	4.5
Single working person (no kids)	Median	4.5	0.5	5.0
	Upper Quartile	5.4	0.5	6.0
	Lower Quartile	11.1	1.2	12.4
Single adult, two children, on benefit	Median	12.4	1.3	13.7
	Upper Quartile	14.8	1.4	16.3
	Lower Quartile	4.1	0.4	4.5
Single adult, two children, employed	Median	4.5	0.5	5.0
	Upper Quartile	5.4	0.5	6.0
	Lower Quartile	4.1	0.4	4.5
Couple, two children, one employed	Median	4.5	0.5	5.0
	Upper Quartile	5.4	0.5	6.0
	Lower Quartile	2.0	0.2	2.3
Couple, two children, both employed	Median	2.3	0.2	2.5
	Upper Quartile	2.7	0.3	3.0
	Lower Quartile	1.7	0.2	1.8
Two working adults, based in Auckland	Median	1.8	0.2	2.0
	Upper Quartile	2.2	0.2	2.4

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Appendix E Smaller areas within the Far North District

Appendix F Average rates assessment for all areas

Table 33 Median rates

	FNDC rates (\$)	NRC rates (\$)	Total rates (\$)
Far North District	2,215	297	2,512
Kaikohe-Hokianga Ward	2,198	235	2,434
Te Hiku Ward	2,334	254	2,588
Bay of Islands-Whangaroa Ward	2,437	236	2,673
Kaitaia	2,083	545	2,628
Ahipara	2,392	255	2,647
Karikari peninsula	2,473	258	2,732
Kaikohe	2,226	223	2,450
Opononi-Omapere	3,060	249	3,309
Kerikeri	2,190	282	2,472
Paihia	2,949	268	3,217
Russell	3,331	297	3,628

Table 34 Median rates as a percentage of gross income for single superannuitant with no other income for each area

Single superannuitant, no other income	FNDC rates (%)	NRC rates (%)	Total rates (%)
Far North District	9.0	1.2	10.2
Kaikohe-Hokianga Ward	8.9	1.0	9.8
Te Hiku Ward	9.4	1.0	10.5
Bay of Islands-Whangaroa Ward	9.9	1.0	10.8
Kaitaia	8.4	2.2	10.6
Ahipara	9.7	1.0	10.7
Karikari peninsula	10.0	1.0	11.0
Kaikohe	9.0	0.9	9.9
Opononi-Omapere	12.4	1.0	13.4
Kerikeri	8.9	1.1	10.0
Paihia	11.9	1.1	13.0
Russell	13.5	1.2	14.7

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Appendix F Average rates assessment for all areas

Table 35 Median rates as a percentage of gross income for married superannuitant with no other income for each area

Married superannuitant, no other income	FNDC rates (%)	NRC rates (%)	Total rates (%)
Far North District	5.9	0.8	6.7
Kaikohe-Hokianga Ward	5.9	0.6	6.5
Te Hiku Ward	6.2	0.7	6.9
Bay of Islands-Whangaroa Ward	6.5	0.6	7.1
Kaitaia	5.6	1.5	7.0
Ahipara	6.4	0.7	7.1
Karikari peninsula	6.6	0.7	7.3
Kaikohe	5.9	0.6	6.5
Opononi-Omapere	8.2	0.7	8.8
Kerikeri	5.8	0.8	6.6
Paihia	7.9	0.7	8.6
Russell	8.9	0.8	9.7

Table 36 Median rates as a percentage of gross income for single working person with no kids for each area

Single working person (no kids)	FNDC rates (%)	NRC rates (%)	Total rates (%)
Far North District	4.1	0.5	4.6
Kaikohe-Hokianga Ward	4.7	0.5	5.2
Te Hiku Ward	4.5	0.5	5.0
Bay of Islands-Whangaroa Ward	4.1	0.4	4.5
Kaitaia	4.5	1.2	5.7
Ahipara	4.1	0.4	4.6
Karikari peninsula	4.5	0.5	4.9
Kaikohe	5.0	0.5	5.5
Opononi-Omapere	6.9	0.6	7.5
Kerikeri	3.7	0.5	4.2
Paihia	5.1	0.5	5.5
Russell	5.3	0.5	5.8

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Table 37 Median rates as a percentage of gross income for single working person with no kids for each area

Single adult, two children, on benefit	FNDC rates (%)	NRC rates (%)	Total rates (%)
Far North District	11.0	1.5	12.4
Kaikohe-Hokianga Ward	10.9	1.2	12.0
Te Hiku Ward	11.5	1.3	12.8
Bay of Islands-Whangaroa Ward	12.0	1.2	13.2
Kaitaia	10.3	2.7	13.0
Ahipara	11.8	1.3	13.1
Karikari peninsula	12.2	1.3	13.5
Kaikohe	11.0	1.1	12.1
Opononi-Omapere	15.1	1.2	16.4
Kerikeri	10.8	1.4	12.2
Paihia	14.6	1.3	15.9
Russell	16.5	1.5	17.9

Table 38 Median rates as a percentage of gross income for single working person with two children for each area

Single adult, two children, employed	FNDC rates (%)	NRC rates (%)	Total rates (%)
Far North District	4.1	0.5	4.6
Kaikohe-Hokianga Ward	4.7	0.5	5.2
Te Hiku Ward	4.5	0.5	5.0
Bay of Islands-Whangaroa Ward	4.1	0.4	4.5
Kaitaia	4.5	1.2	5.7
Ahipara	4.1	0.4	4.6
Karikari peninsula	4.5	0.5	4.9
Kaikohe	5.0	0.5	5.5
Opononi-Omapere	6.9	0.6	7.5
Kerikeri	3.7	0.5	4.2
Paihia	5.1	0.5	5.5
Russell	5.3	0.5	5.8

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Appendix F Average rates assessment for all areas

Table 39 Median rates as a percentage of gross income for a couple with two children and one adult worker for each area

Couple, two children, one employed	FNDC rates (%)	NRC rates (%)	Total rates (%)
Far North District	4.1	0.5	4.6
Kaikohe-Hokianga Ward	4.7	0.5	5.2
Te Hiku Ward	4.5	0.5	5.0
Bay of Islands-Whangaroa Ward	4.1	0.4	4.5
Kaitaia	4.5	1.2	5.7
Ahipara	4.1	0.4	4.6
Karikari peninsula	4.5	0.5	4.9
Kaikohe	5.0	0.5	5.5
Opononi-Omapere	6.9	0.6	7.5
Kerikeri	3.7	0.5	4.2
Paihia	5.1	0.5	5.5
Russell	5.3	0.5	5.8

Table 40 Median rates as a percentage of gross income for a couple, with two children who are employed for each area

Couple, two children, both employed	FNDC rates (%)	NRC rates (%)	Total rates (%)
Far North District	2.0	0.3	2.3
Kaikohe-Hokianga Ward	2.4	0.3	2.6
Te Hiku Ward	2.2	0.2	2.5
Bay of Islands-Whangaroa Ward	2.0	0.2	2.2
Kaitaia	2.3	0.6	2.9
Ahipara	2.1	0.2	2.3
Karikari peninsula	2.2	0.2	2.5
Kaikohe	2.5	0.2	2.7
Opononi-Omapere	3.5	0.3	3.8
Kerikeri	1.9	0.2	2.1
Paihia	2.5	0.2	2.8
Russell	2.7	0.2	2.9

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Appendix F Average rates assessment for all areas

Table 41 Median rates as a percentage of gross income for two working adults with no kids, based in Auckland for each area

Two working adults, based in Auckland	FNDC rates (%)	NRC rates (%)	Total rates (%)
Far North District	1.6	0.2	1.8
Kaikohe-Hokianga Ward	1.6	0.2	1.8
Te Hiku Ward	1.7	0.2	1.9
Bay of Islands-Whangaroa Ward	1.8	0.2	2.0
Kaitaia	1.5	0.4	1.9
Ahipara	1.8	0.2	1.9
Karikari peninsula	1.8	0.2	2.0
Kaikohe	1.6	0.2	1.8
Opononi-Omapere	2.3	0.2	2.4
Kerikeri	1.6	0.2	1.8
Paihia	2.2	0.2	2.4
Russell	2.5	0.2	2.7

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Appendix F Average rates assessment for all areas



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5 July 2021

Far North District Council Memorial Avenue Kaikohe

Attention: Ben Bowden

Dear Ben,

Hihi WWTP treated wastewater disposal to land

Far North District Council (FNDC) prepared the Hihi Wastewater Treatment Plant Land Disposal Options Assessment report in June 2021. The report provided results of an assessment to identify potential sites for land discharge of treated wastewater from the Hihi Wastewater Treatment Plant (Hihi WWTP) and shortlisted suitable sites for a future detailed assessment. However, the report did not include cost estimates for wastewater pumping, storing and irrigation on the potential sites.

The purpose of this letter is to provide a high level cost estimates to support suitability of potential sites¹ provided to Beca by FNDC.

Scope of Works

The scope of works includes a high level engineering design which is required to develop a high level capital cost estimate for two preferred sites for treated wastewater discharge to the land. The following scope is covered in this letter:

- High-level design of the pump station and conveyance to the two land discharge sites, provided by FNDC
- High-level consideration of potential storage
- High-level consideration of discharge system (assumed surface spray irrigation)
- Class 5 (-30% to +50% accuracy) cost estimates

1.1 Pump Station design and Conveyance to Preferred sites

A high level pump station design was undertaken, and the pipeline routes were identified to deliver treated wastewater to two potential sites. The pump station and pipeline design assumed the following:

- The pump station will be located at Hihi WWTP site for the ease of tie-in works, assumed to be at a sea level +/- 1m.
- Adopted pumping design flow 5 L/s. This will provide the following approximate pumping time per day:

¹ Option 1 for Land Disposal in Hihi GIS Mapping, by FNDC, June 2020 and Option 2 for Land Disposal in Hihi GIS Mapping, by FNDC, June 2020

- 3 hr based on average flow of 52 m³/d (projection² for year 2055)
- 5 hrs based on 90%tile flow of 89 m³/d
- 24 hrs based on maximum flow of 446 m³/d
- Treated wastewater storage will be provided at the land discharge site.
- Treated wastewater quality will be sufficient for the pumping purpose to avoid biofilm forming in the pipeline.
- Discharge of pipeline assumed to be a potential storage location within proposed irrigation site boundaries on a relatively flat area (contour line 60 m).

	relatively flat area that is suitable for storage
SHAT ROAD	
SIHI ROAD	

Therefore, the following head loss is calculated through the system assuming minor pipe losses based upon proposed pipe route:

- Disposal site option 1 72.03 m
- Disposal site option 2 75.33 m
- Pipework to be constant diameter throughout the proposed route.
- Estimated size of PE pipeline (PN9) is DN100 at a target velocity of 0.5-1.0 m/s.
- Pipeline will be buried along the road in a road corridor and entering each site via council owned land.
- Assumed no clashes with existing utility services (e.g. electricity, telecommunications) and road structures.

² Hihi Land Disposal Calculations, excel spreadsheet, provided by FNDC

Indicative pipeline routes to potential Site Option 1 and Site Option 2 are presented in Figure 1 and Figure 2 respectively below.



Figure 1 Pipeline route to potential Site Option 1



Figure 2 Pipeline route to potential Site Option 2

1.1.1 Site options

The potential sites were assessed³ by FNDC and provided to Beca:

- Option 1 for Land disposal Hihi GIS Mapping June, 2021
- Option 2 for Land disposal Hihi GIS Mapping June, 2021

The land disposal areas which could be suitable for irrigation, determined by FNDC for potential Site Option 1 and Site Option 2 are presented in Figure 3 and Figure 4 respectively below.



Figure 3 Potential disposal to land Site Option 1

Figure 4 Potential disposal to land Site Option 2

Legend Available Disposa

It is understood that:

- Option 1 Underlying Property Size: 193.6 Ha across 8 parcels of land and 3 titles. <u>43.5 ha</u> across 3 titles are marked as land available for irrigation.
- Option 2 Underlying Property Size: 17.5 Ha across a single parcel. <u>12.2</u> ha is marked as land available for irrigation.

³ Hihi Wastewater Treatment Plant Land Disposal Options Assessment Draft report prepared by Far North District Council (FNDC) in June 2021

1.2 Irrigation and Storage

A high level assessment of required treated wastewater storage and irrigation area was undertaken to provide indicative sizing information for the cost estimates. The storage and irrigation system assumed the following:

• The storage for treated wastewater will be at the discharge point from the pipeline from the pump station and is assumed to be an open pond with a clay liner and standard slopes of 1:3.

The pond size is based on 2 month storage of average daily flow in 2055. This assumption is based on typical soil moisture deficit in Kaitaia (see Figure below, obtained from Northland Regional Council website, NIWA data). During the months of July and August there are typically extended periods of no soil moisture deficit (i.e. soil is saturated) and therefore low volumes of treated wastewater are expected to be disposed of to land during this period. At other times of the year, the storage pond is required to buffer out peak treated wastewater flows.



- It is assumed that dry mounted pump will be installed on the bank of the pond to transfer treated wastewater from the storage pond to the irrigation system. The pump is assumed to be in-housed in a standard shed together with controls for the pump itself and irrigation system.
- Due to the relatively steep slopes on both sites and assumed future site management requirements we
 assumed that a cut and carry operation is not feasible, therefore we have assumed that the cover will be
 native trees, pines or similar. Fixed Spray irrigation/k-lines is assumed to be installed.
- The land requirement for irrigation was determined by applying a simple modelling tool using daily flows, rain data, hydraulic application rate of 3 mm/day and effluent storage of 3,600 m³.
- A 50% factor was applied to total land area required to be purchased to account for buffer zones around drains/streams and the boundary.

1.2.1 Storage

An estimated storage pond volume required to accommodate 2 months treated wastewater storage is $3,600 \text{ m}^3$ based on the average flow future (2055) of 52 m³/d. The approximate internal dimensions of the pond are 30m x 40m with an effective water level of 3m (total depth 3.5 m). Indicative locations for the storage pond are presented in the figures below:



Figure 5 Storage pond location for land disposal Site Option 1 Figure 6 Storage pond location for land disposal Site Option 2

1.2.2 Irrigation system

High level modelling was applied to determine land irrigation area and therefore the size of irrigation system. The model used flow data provided by FNDC for the period January 2017 – December 2020. Rain data provided by FNDC for this period had some gaps, especially in winter months in 2017. Rain data was adjusted by filling in gaps with rain data provided by NIWA (Kaitaia AWS).

The estimated irrigation area required for effluent disposal is summarised in Table 1 below.

	· ····································							
	Flow m ³ /d	2 month storage m ³	Rounded m ³	Hydraulic Ioading rate mm/d	Irrigation area (no buffer) ha	Land required (with buffer) ha	Nitrogen Ioading kgN/ha/year⁴	
2025	45	2790	2800	3	4.7	7.05	92	
2055	57	3534	3600	3	5.3	7.95	102	

Table 1 Irrigation area requirements for treated effluent disposal in 2025 and 2055

A minimum area of 5.3 ha is required to dispose treated wastewater to the land in the future. The area size accounts for the down time when irrigation will not be possible due to weather conditions. It is assumed that minimal irrigation will occur in July and August, where treated wastewater will be stored in the pond. No irrigation will occur if the rainfall will be greater than 3 mm/d. To catch up with the irrigation for the down

⁴ Based on an assumed continuation of existing treated wastewater quality being discharged from the WWTP.

time period without exceeding hydraulic application rate of 3 mm, more land is required in comparison to the catch up irrigation method where increasing hydraulic rate could be applied.

The minimum land area of 5.3 ha is required for irrigation itself, however a buffer of 50% should be applied to account for the buffer areas to a property boundary. As indicated in the table above approximately 7.95 ha of land will be required including buffer area. The buffer area could also include the area required for pond storage (0.12 ha). Further technical work on soil suitability, pond storage location, irrigation system layout and application rates is recommended before purchasing the land.

We understand that 43.5 ha of land is available for irrigation as Option 1 and 12.2 ha as Option 2. Given that 8 ha of land is required for treated wastewater disposal in the future there is sufficient land available in either option.

1.3 Capital cost estimate

Estimate Construction Costs (-30% to + 50% accuracy)

Options Costs (\$NZD) are summarised in table below. See Appendix A for more detail breakdowns of the costs.

Cost Item	Site Option 1	Site Option 2
Pump station and pressure pipeline	562,600	686,800
Effluent Storage Pond	307,400	307,400
Irrigation system	920,400	920,400
Electrical and controls	80,000	80,000
Planning	150,000	150,000
Professional fees, Council internal costs and contingency	829,600	875,400
Total	2,850,000	3,020,000
Range	2,2 Mil to 4.3 Mil	2.3 Mil to 4.5 Mil

Table 2 Estimated Construction Cost (-30% to + 50%) for Disposal Site Option 1 and Option 2

The above costs are based on current costs as of June 2021, exclude GST and do not include for escalation or risks associated with COVID delays and/or disruptions.

1.3.1 Limitations

This concept cost estimate is based on limited information and is therefore high level only (feasibility - +/-30 to 50%). It is intended to be used only for high level option assessment/selection and cannot be relied on or used for detailed pricing or budgeting purposes. Detailed construction methodology and geotechnical information is required prior to providing a detailed estimate of construction costs. There is a risk that the geotechnical conditions encountered could make this unfeasible, however this can only be determined through additional geotechnical investigations.

1.3.2 Assumptions

The following assumptions have been made for cost estimating purposes (see also the detail costs for more information)

• Only a rudimentary access allowed for along the pipe route for pipe installation.
- Assume solid block fixed sprinkler irrigation is needed.
- Planting of irrigation area based on 3 small plants per m2.
- All works done during normal work hours.
- The project will be procured on a competitive basis.
- The contractor will be given free access to the Works site.

1.3.3 Exclusions

No allowance has been included in the estimates for the following costs:

- Any upgrades at the WWTP itself (we have assumed the current treated wastewater quality will continue in the future)
- Fencing reconfiguration along the pipeline route.
- Effects of climate change on future irrigation system performance.
- Maintenance access tracks.
- Land purchase.
- Relocation of any existing services / utilities.
- Contaminated material removal or treatment.
- GST
- Escalation
- Costs to date
- Operating cost
- Insurance costs
- Legal and finance fees
- Risk items
- Covid-19 related costs

1.3.4 Contingency Allowance

The cost estimate includes a 10% estimating allowance for design development and 15% contingency for construction/unforeseen costs. This allowance should be reassessed on completion of further site investigations and design development.

Yours sincerely



Senior Process Engineer

on behalf of Beca Limited Phone Number: Email: Jolanta.Liutkute@beca.com

Copy Garrett Hall , Beca Limited

> Beca // 5 July 2021 // 3257576-729882073-150 // Page 8





	CAPITAL COST ESTIMATE	Site Option 1			otion 1
Code	e Description		Units	Rate \$	Subtotal \$
Pump station and pressure line					
1.01	Pre-engineered fiber glass PS at WWTP. Including D/SB pump arrangement. Pump size 7 kW.	1	LS	110,000.00	110,000.00
1.02	PN9 PE pipe DN100	1,560	m	230.00	358,800.00
1.03	Electrical, control cabinet, telemetry	1	LS	50,000.00	50,000.00
Fixed Spra	y irrigation/K-line				
1.04	Irrigation system for the area of 5.3 ha	5.3	ha	50,000.00	265,000.00
1.05	Planting of irrigation area with natives	5.3	ha	90,000.00	477,000.00
1.06	Storage pond 30mx40mx3.5m construction including earthworks	1,200	m2	185.00	222,000.00
1.07	Site preparation for pond installation	1	LS	15,000.00	15,000.00
1.08	Pond area fencing 35mx45m	160	m	120.00	19,200.00
1.09	Irrigation pump including control shed and concrete slab	1	LS	25,000.00	25,000.00
1.10	Electrical, controls, telemetry, power from the road		LS	30,000.00	30,000.00
Planning		•			
1.11	Baseline groundwater and soil investigations	1	LS	50,000.00	50,000.00
1.12	Consenting, including AEE	1	LS	100,000.00	100,000.00
	Net Construction Cost Estimate				1,572,000.00
	Main Contractor On-site overheads (P&G) and Profit Margin	20%	%	1,572,000.00	314,400.00
	Gross Construction Cost Estimate				2,036,400.00
	Design Development Contingency	10%	%	2,036,400.00	203,640.00
	Construction Contingency	15%	%	2,036,400.00	305,460.00
	Total Construction Budget				2,545,500.00
	Professional Fees		%	2,545,500.00	254,550.00
	Client-owned project costs	2%	%	2,545,500.00	50,910.00
	Rounding	1	LS	ļ	-960.00
	Total Expected Concept Capital Cost Estimate				2,850,000.00

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	CAPITAL COST ESTIMATE	Site Option 2			
Code	Description	Quantity	Units	Rate \$	Subtotal \$
Pump sta	ition and pressure line				
1.01	Pre-engineered fiber glass PS at WWTP. Including D/SB pump arrangement. Pump size 7.0 kW.	1	LS	110,000.00	110,000.00
1.02	PN9 PE pipe DN100	2,010	m	230.00	462,300.00
1.03	Electrical, control cabinet telemetry	1	LS	50,000.00	50,000.00
Fixed Spr	ray irrigation/K-line	-		•	
1.04	Irrigation system for the area of 5.3 ha	5.3	ha	50,000.00	265,000.00
1.05	Planting of irrigation area with natives	5.3	ha	90,000.00	477,000.00
1.06	Storage pond 30mx40mx3.5m construction including earthworks	1,200	m2	185.00	222,000.00
1.07	Site preparation for pond installation	1	LS	15,000.00	15,000.00
1.08	Pond area fencing 35mx45m	160	m	120.00	19,200.00
1.09	Irrigation pump including control shed and concrete slab	1	LS	25,000.00	25,000.00
1.10	Electrical, controls, telemetry, power from the road	1	LS	30,000.00	30,000.00
Planning			1		
1.11	Baseline groundwater and soil investigations	1	LS	50,000.00	50,000.00
1.12	Consenting, including AEE	1	LS	100,000.00	100,000.00
	Net Construction Cost Estimate				1,675,500.00
	Main Contractor On-site overheads (P&G) and Profit Margin	20%	%	1,675,500.00	335,100.00
	Gross Construction Cost Estimate				2,160,600.00
	Design Development Contingency	10%	%	2,160,600.00	216,060.00
	Construction Contingency	15%	%	2,160,600.00	324,090.00
	Total Construction Budget				2,700,750.00
	Professional Fees	10%	%	2,700,750.00	270,075.00
	Client-owned project costs	2%	%	2,700,750.00	54,015.00
	Rounding	1	LS		-4,840.00
	Total Expected Concept Capital Cost Estimate				3,020,000.00

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6 INFORMATION REPORTS

6.1 INFRASTRUCTURE COMMITTEE ACTION SHEET UPDATE JULY 2022

File Number:	A3769314
Author:	Rhonda-May Whiu, Democracy Advisor
Authoriser:	Aisha Huriwai, Team Leader Democracy Services

TAKE PURONGO / PURPOSE OF THE REPORT

To provide the Infrastructure Committee with an overview of outstanding decisions from 1 January 2020.

WHAKARĀPOPOTO MATUA / EXECUTIVE SUMMARY

- Council staff have reintroduced action sheets as a mechanism to communicate progress against decisions/resolutions and confirm when decisions have been implemented.
- The focus of this paper is on decisions made by the Infrastructure Committee.
- Action sheets are also in place for Council and Community Boards.

TŪTOHUNGA / RECOMMENDATION

That the Infrastructure Committee receive the report Action Sheet Update July 2022.

1) TĀHUHU KŌRERO / BACKGROUND

The Democracy Services Team have been working on a solution to ensure that elected members can receive regular updates on progress against decisions made at meetings, in alignment with a Chief Executive Officer key performance indicator.

Action sheets have been designed as a way to close the loop and communicate with elected members on the decisions made by way of resolution at formal meetings.

Action sheets are not intended to be public information but will provide updates to elected members, who, when appropriate can report back to their communities and constituents.

2) MATAPAKI ME NGĀ KŌWHIRINGA / DISCUSSION AND OPTIONS

The outstanding tasks are multi-facet projects that take longer to fully complete.

The Democracy Services staff are working with staff to ensure that the project completion times are updated so that action sheets provided to members differentiate between work outstanding and work in progress.

Take Tūtohunga / Reason for the recommendation

To provide the Infrastructure Committee with an overview of outstanding committee decisions from 1 January 2020.

3) PĀNGA PŪTEA ME NGĀ WĀHANGA TAHUA / FINANCIAL IMPLICATIONS AND BUDGETARY PROVISION

There are no financial implications or need for budgetary provision in receiving this report.

ĀPITIHANGA / ATTACHMENTS

1. Infrastructure Committee Action Sheet July 2022 Update - A3788656 🗓 🛣

		Printed: Tuesday, 12 July 2022 9:42:36 am		
Division: Committee: Infrastructure Committee			Date From: 1/01/2020 Date To: 12/07/2022	
	Of			
Meeting	Title	Resolution	Notes	
Infrastructure Committee 9/02/2022	Total Mobility Scheme	RESOLUTION 2022/3 Moved: Cr Kelly Stratford Seconded: Cr Rachel Smith That the Infrastructure Committee approves the assignment of Total Mobility Scheme local share operational funding of \$31,000 to the Northland Regional Council. In Favour: Crs Felicity Foy, Dave Collard, Rachel Smith, Kelly Stratford, John Vujcich and Member Adele Gardner Against: Nil NOTES: Chair Foy requests that a timeline, cost options and next steps for the rest of the district be included; as well as criteria for how towns are chosen.	Intermediate feedback received from NRC and directed to Calvin at NTA. Assume inserted into IAMS monthly report., • The Far North Total Mobility Scheme went live Friday 1st July 2022, • The service will be starting out in the Kerikeri area., • The approved Transport Operator – Driving Miss Daisy (DMD), based in Kerikeri, has had the equipment installed to take the Total Mobility electronic swipe cards that are linked to the system "Ridewise"., • All Health and Safety requirements have been met/signed off by a consultant employed by the Northland Regional Council., • All of the DMD drivers have been trained in the Wake Kotahi NZ Transport Agency unit standards 01748 and 15168 to allow them to carry Total Mobility clients. ,• Northland Transportation Alliance staff have undertaken 88 eligibility assessments and have entered all 88 into the database.,• Of the 88 clients signed up, 53 received their Total Mobility cards on the day with the remaining 35 expected to receive theirs during the week of 4- 8 July 2022 July. The signing up of Total Mobility clients to this scheme will be an ongoing process.,• We will increase the maximum fare from \$15 to \$25 (or \$30) possibly November/ December, this will encourage more people to sign up to the scheme due to the cost of the current fares to get around Kerikeri (so a better discount) this will also depend on budget restraints, and will be closely monitored.	
Infrastructure Committee 5/05/2021	Economic and Practicability Assessment for Disposal of Treated Wastewater to Land from Kaikohe and Kaitāia Wastewater Treatment Plants	 RESOLUTION 2021/14 That the Infrastructure Committee: a) agree the option of disposing treated wastewater to land from the Kāitaia and Kaikohe Wastewater Treatment plants is further investigated, specifically: i) engagement with affected landowners and mana whenua to determine the selection of a preferred site to be taken forward for preliminary design. ii) complete a preliminary design that includes site specific technical, design, and cost investigation of land disposal in which mana whenua are to be included. 	Katiaia Discharge to Land - Desktop study complete and now undertaking initial landowner engagement to determine a preferred site. Kaikohe Discharge to Land – working group terms of reference has now been signed and investigations into wastewater discharge to land options can now commence as part of the working group.	

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OUTSTANDING ACTIONS REPORT				Printed: Tuesday	, 12 July 2022 9:42:36 am
	Di Ca Of	vision: mmittee: Infrastructure Committee ficer:		Date From: Date To:	1/01/2020 12/07/2022
Meeting	Title	Resolution	Notes		
		b) request that the preliminary designs are to be completed prior to December 2023, to enable the Long Term Plan engagement process and request staff report back to the Infrastructure Committee to present the findings of the preliminary design reports.			
		c) request staff seek replacement resource consents for discharge of treated wastewater to water from the Kāitaia and Kaikohe Wastewater Treatment Plants and that during the term of the consent, staff progress investigation of disposal to land options for both the Kāitaia and Kaikohe Waste Water schemes.			
		d) request a treated wastewater disposal to land workshop be scheduled for late 2021 with the Infrastructure Committee, which will cover methodologies and processes associated with establishing a disposal to land scheme.			
		That the Infrastructure Committee recommend to Council that expenditure of up to \$330,000 to cover both the Kāitaia and the Kaikohe sites, is allocated in the Long Term Plan deliberations, to complete a preliminary design for each Wastewater Treatment Plant, and sufficient staffing resources are assigned to enable ongoing engagement with mana whenua and other stakeholders.			
		CARRIED			
		Abstained: Crs Ann Court and Rachel Smith			

		Printed: Tuesday, 12 July 2022 9:42:36 am	
		Division: Committee: Infrastructure Committee	Date From: 1/01/2020 Date To: 12/07/2022
Meeting	Title	Resolution	Notes
Infrastructure Committee 4/05/2022	Boat Ramp Study Delivery Plan	RESOLUTION 2022/17 Moved: Deputy Mayor Ann Court Seconded: Cr Kelly Stratford That the Infrastructure Committee: b) approves \$ 25,000 of operational expenditure for 2023/2024 for an engineering feasibility study at Russell car park and for supporting the scoping and costing of Floating Jetties c) approves \$ 34,650 capital expenditure for 2023/2024 for FNDC local share for a future TIF funding application for boat ramp safety guides d) recommends that Council consider the matter of \$5m annually, to be approved for strategic property purchases related to maritime infrastructure to be included in the capital programme commencing 2023/2024, and that an options paper on funding be prepared and an economic impact statement. Abstained: Cr Rachel Smith	Finance has been asked to prepare a report on the economic benefits of the boat ramps etc to be presented to the full Council to provide additional information to support decision making on the Strategic land financial provision. It will be part of the process for the 2023/24 Annual Plan and involve input from finance, Blair H and possibly Darren James. New target date 30 June 2023
Meeting	Title	Resolution	Notes
Strategy and Policy Committee 14/06/2022	Nothing But Net Programme Update	 RESOLUTION 2022/41 Moved: Cr Felicity Foy Seconded: Cr Kelly Stratford That the Strategy and Policy Committee receive the report "Nothing But Net Programme Update"; a) and that a paper be provided by the "Nothing But Net" team to the Infrastructure Committee on the options and costs for technology for data input in regard to rubbish bins, public toilet usage/frequency of use and cleaning, 	Report to be provided to the 7 September 2022 Infrastructure Committee meeting

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		OUTSTANDING ACTIONS REPORT		Printed: Tuesda	ıy, 12 July 2022 9:42:36 am
	Di Co Of	vision: mmittee: Infrastructure Committee ficer:		Date From: Date To:	1/01/2020 12/07/2022
Meeting	Title	Resolution	Notes		
		and the frequency of mowing of each reserve, and that recommendations be provided for the use of such technology as part of the New Reserve and Public Amenities Services contract that is coming up for review. CARRIED			

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7 TE WĀHANGA TŪMATAITI / PUBLIC EXCLUDED

RESOLUTION TO EXCLUDE THE PUBLIC

RECOMMENDATION

That the public be excluded from the following parts of the proceedings of this meeting.

The general subject matter of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under section 48 of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution are as follows:

General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Ground(s) under section 48 for the passing of this resolution
7.1 - Confirmation of Previous Minutes - Public Excluded	s7(2)(h) - the withholding of the information is necessary to enable Council to carry out, without prejudice or disadvantage, commercial activities	s48(1)(a)(i) - the public conduct of the relevant part of the proceedings of the meeting would be likely to result in the disclosure of information for which good reason for withholding would exist under section 6 or section 7

8 KARAKIA WHAKAMUTUNGA – CLOSING PRAYER

6 TE KAPINGA HUI / MEETING CLOSE