Far North District Council

Te Kaunihera o Tai Tokerau ki te Raki

AGENDA

Strategy and Policy Committee Meeting

Tuesday, 9 February 2021

Time: **9.30 am**

Location: **Council Chamber**
Memorial Avenue
Kaikohe

Membership:

Cr Rachel Smith - Chairperson
Cr David Clendon
Mayor John Carter
Deputy Mayor Ann Court
Cr Dave Collard
Cr Felicity Foy
Cr Kelly Stratford
Cr Moko Tepania
Cr John Vujcich
Bay of Islands-Whangaroa Community Board Belinda Ward

Far North District Council Te Kaunihera o Tai Tokerau ki te Raki	**Authorising Body**	Mayor/Council
	Status	Standing Committee
COUNCIL COMMITTEE	**Title**	Strategy and Policy Committee Terms of Reference
	Approval Date	19 December 2019
	Responsible Officer	Chief Executive

Purpose

The purpose of the Strategy and Policy Committee (the Committee) is to set direction for the district, determine specific outcomes that need to be met to deliver on that vision, and set in place the strategies, policies and work programmes to achieve those goals.

In determining and shaping the strategies, policies and work programme of the Council, the Committee takes a holistic approach to ensure there is strong alignment between the objectives and work programmes of the strategic outcomes of Council, being:

- Better data and information
- Affordable core infrastructure
- Improved Council capabilities and performance
- Address affordability
- Civic leadership and advocacy
- Empowering communities

The Committee will review the effectiveness of the following aspects:

- Trust and confidence in decision-making by keeping our communities informed and involved in decision-making;
- Operational performance including strategy and policy development, monitoring and reporting on significant projects, including, but not limited to:
    - FN2100
    - District wide strategies (Infrastructure/ Reserves/Climate Change/Transport)
    - District Plan
    - Significant projects (not infrastructure)
    - Financial Strategy
    - Data Governance
    - Affordability
- Consultation and engagement including submissions to external bodies / organisations

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, and of the Council's business, operations and risks.

Power to Delegate

The Strategy and Policy Committee may not delegate any of its responsibilities, duties or powers.

Membership

The Council will determine the membership of the Strategy and Policy Committee.

The Strategy and Policy Committee will comprise of at least seven elected members (one of which will be the chairperson).

Mayor Carter
Rachel Smith – Chairperson
David Clendon – Deputy Chairperson
Moko Tepania
Ann Court
Felicity Foy
Dave Collard
John Vujcich
Belinda Ward – Bay of Islands-Whangaroa Community Board

Non-appointed councillors may attend meetings with speaking rights, but not voting rights.

Quorum
The quorum at a meeting of the Strategy and Policy Committee is 5 members.

Frequency of Meetings
The Strategy and Policy Committee shall meet every 6 weeks, but may be cancelled if there is no business.

Committees Responsibilities
The Committees responsibilities are described below:

Strategy and Policy Development
- Oversee the Strategic Planning and Policy work programme
- Develop and agree strategy and policy for consultation / engagement;
- Recommend to Council strategy and policy for adoption;
- Monitor and review strategy and policy.

Service levels (non regulatory)
- Recommend service level changes and new initiatives to the Long Term and Annual Plan processes.

Policies and Bylaws
- Leading the development and review of Council's policies and district bylaws when and as directed by Council
- Recommend to Council new or amended bylaws for adoption

Consultation and Engagement
- Conduct any consultation processes required on issues before the Committee;
- Act as a community interface (with, as required, the relevant Community Board(s)) for consultation on policies and as a forum for engaging effectively;
- Receive reports from Council's Portfolio and Working Parties and monitor engagement;
- Review as necessary and agree the model for Portfolios and Working Parties.

Strategic Relationships
- Oversee Council's strategic relationships, including with Māori, the Crown and foreign investors, particularly China
- Oversee, develop and approve engagement opportunities triggered by the provisions of Mana Whakahono-ā-Rohe under the Resource Management Act 1991
- Recommend to Council the adoption of new Memoranda of Understanding (MOU)
- Meet annually with local MOU partners
- Quarterly reviewing operation of all Memoranda of Understanding
- Quarterly reviewing Council's relationships with iwi, hapū, and post-settlement governance entities in the Far North District
- Monitor Sister City relationships
- Special projects (such as Te Pū o Te Wheke or water storage projects)

Submissions and Remits

- Approve submissions to, and endorse remits for, external bodies / organisations and on legislation and regulatory proposals, provided that:
    - If there is insufficient time for the matter to be determined by the Committee before the submission "close date" the submission can be agreed by the relevant Portfolio Leaders, Chair of the Strategy and Policy Committee, Mayor and Chief Executive (all Councillors must be advised of the submission and provided copies if requested).
    - If the submission is of a technical and operational nature, the submission can be approved by the Chief Executive (in consultation with the relevant Portfolio Leader prior to lodging the submission).
- Oversee, develop and approve any relevant remits triggered by governance or management commencing in January of each calendar year.
- Recommend to Council those remits that meet Council's legislative, strategic and operational objectives to enable voting at the LGNZ AGM. All endorsements will take into account the views of our communities (where possible) and consider the unique attributes of the district.

Fees

- Set fees in accordance with legislative requirements unless the fees are set under a bylaw (in which case the decision is retained by Council and the committee has the power of recommendation) or set as part of the Long Term Plan or Annual Plan (in which case the decision will be considered by the Long Term Plan and Annual Plan and approved by Council).

District Plan

- Review and approve for notification a proposed District Plan, a proposed change to the District Plan, or a variation to a proposed plan or proposed plan change (excluding any plan change notified under clause 25(2)(a), First Schedule of the Resource Management Act 1991);
- Withdraw a proposed plan or plan change under clause 8D, First Schedule of the Resource Management Act 1991;
- Make the following decisions to facilitate the administration of proposed plan, plan changes, variations, designation and heritage order processes:
    - To authorise the resolution of appeals on a proposed plan, plan change or variation unless the issue is minor and approved by the Portfolio Leader District Plan and the Chair of the Regulatory committee.
    - To decide whether a decision of a Requiring Authority or Heritage Protection Authority will be appealed to the Environment Court by council and authorise the resolution of any such appeal.
    - To consider and approve council submissions on a proposed plan, plan changes, and variations.
    - To manage the private plan change process.
    - To accept, adopt or reject private plan change applications under clause 25 First Schedule Resource Management Act (RMA).

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.

STRATEGY AND POLICY COMMITTEE - MEMBERS REGISTER OF INTERESTS

Name	Responsibility (i.e. Chairperson etc)	Declaration of Interests	Nature of Potential Interest	Member's Proposed Management Plan
Hon John Carter QSO	Board Member of the Local Government Protection Programme	Board Member of the Local Government Protection Program		
	Carter Family Trust			
Rachel Smith (Chair)	Friends of Rolands Wood Charitable Trust	Trustee		
	Mid North Family Support	Trustee		
	Property Owner	Kerikeri		
	Friends who work at Far North District Council			
	Kerikeri Cruising Club	Subscription Member and Treasurer		
Rachel Smith (Partner)	Property Owner	Kerikeri		
	Friends who work at Far North District Council			
	Kerikeri Cruising Club	Subscription Member		
David Clendon (Deputy Chair)	Chairperson – He Waka Eke Noa Charitable Trust	None		Declare if any issue arises
	Member of Vision Kerikeri	None		Declare if any issue arises
	Joint owner of family home in Kerikeri	Hall Road, Kerikeri		
David Clendon – Partner	Resident Shareholder on Kerikeri Irrigation			
David Collard	Snapper Bonanza 2011 Limited	45% Shareholder and Director		
	Trustee of Te Ahu Charitable Trust	Council delegate to this board		
Deputy Mayor Ann Court	Waipapa Business Association	Member		Case by case
	Warren Pattinson Limited	Shareholder	Building company. FNDC is a regulator and enforcer	Case by case
	Kerikeri Irrigation	Supplies my water		No
	Top Energy	Supplies my power		No other interest greater than the publics
	District Licensing	N/A	N/A	N/A
	Top Energy Consumer Trust	Trustee	Crossover in regulatory functions, consenting economic development and contracts such as street lighting.	Declare interest and abstain from voting.

Name	Responsibility (i.e. Chairperson etc)	Declaration of Interests	Nature of Potential Interest	Member's Proposed Management Plan
	Ann Court Trust	Private	Private	N/A
	Waipapa Rotary	Honorary member	Potential community funding submitter	Declare interest and abstain from voting.
	Properties on Onekura Road, Waipapa	Owner Shareholder	Any proposed FNDC Capital works or policy change which may have a direct impact (positive/adverse)	Declare interest and abstain from voting.
	Property on Daroux Dr, Waipapa	Financial interest	Any proposed FNDC Capital works or policy change which may have a direct impact (positive/adverse)	Declare interest and abstain from voting.
	Flowers and gifts	Ratepayer 'Thankyou'	Bias/ Pre-determination?	Declare to Governance
	Coffee and food	Ratepayers sometimes 'shout' food and beverage	Bias or pre-determination	Case by case
	Staff	N/A	Suggestion of not being impartial or pre-determined!	Be professional, due diligence, weigh the evidence. Be thorough, thoughtful, considered impartial and balanced. Be fair.
	Warren Pattinson	My husband is a builder and may do work for Council staff		Case by case
Ann Court - Partner	Warren Pattinson Limited	Director	Building Company. FNDC is a regulator	Remain at arm's length
	Air NZ	Shareholder	None	None
	Warren Pattinson Limited	Builder	FNDC is the consent authority, regulator and enforcer.	Apply arm's length rules
	Property on Onekura Road, Waipapa	Owner	Any proposed FNDC capital work in the vicinity or rural plan change. Maybe a link to policy development.	Would not submit. Rest on a case by case basis.
Felicity Foy	Shareholder - Northland Planning & Development 2020	A planning and development consultancy that is based in the Far North and have two employees. Property owner of Commerce Street, Kaitaia.		I will abstain from any debate and voting on proposed plan change items for the Far North District Plan. I will declare a conflict of interest

Name	Responsibility (i.e. Chairperson etc)	Declaration of Interests	Nature of Potential Interest	Member's Proposed Management Plan
				with any planning matters that relate to resource consent processing, and the management of the resource consents planning team.
				I will not enter into any contracts with Council for over $25,000 per year. I have previously contracted to Council to process resource consents as consultant planner.
	Flick Trustee Ltd	I am the director of this company that is the company trustee of Flick Family Trust that owns properties Seaview Road – Cable Bay, and Allen Bell Drive - Kaitaia.		
	Elbury Holdings Limited	This company is directed by my parents Fiona and Kevin King.	This company owns several dairy and beef farms, and also dwellings on these farms. The Farms and dwellings are located in the Far North at Kaimaumau, Bird Road/Sandhills Rd, Wireless Road/ Puckey Road/Bell Road, the Awanui Straight and Allen Bell Drive.	
	Foy Farms Partnership	Owner and partner in Foy Farms - a farm on Church Road, Kaingaroa		
	Foy Farms Rentals	Owner and rental manager of Foy Farms Rentals for 7 dwellings on Church Road, Kaingaroa and 2 dwellings on Allen Bell Drive, Kaitaia, and 1 property on North Road, Kaitaia, one title contains a cell phone tower.		

Name	Responsibility (i.e. Chairperson etc)	Declaration of Interests	Nature of Potential Interest	Member's Proposed Management Plan
	King Family Trust	This trust owns several titles/properties at Cable Bay, Seaview Rd/State Highway 10 and Ahipara - Panorama Lane.	These trusts own properties in the Far North.	
	Previous employment at FNDC 2007-16	I consider the staff members at FNDC to be my friends		
	Shareholder of Coastline Plumbing NZ Limited			
Felicity Foy - Partner	Director of Coastline Plumbing NZ Limited			
	Friends with some FNDC employees			
Moko Tepania	Teacher	Te Kura Kaupapa Māori o Kaikohe.	Potential Council funding that will benefit my place of employment.	Declare a perceived conflict
	Chairperson	Te Reo o Te Tai Tokerau Trust.	Potential Council funding for events that this trust runs.	Declare a perceived conflict
	Tribal Member	Te Rūnanga o Te Rarawa	As a descendent of Te Rarawa I could have a perceived conflict of interest in Te Rarawa Council relations.	Declare a perceived conflict
	Tribal Member	Te Rūnanga o Whaingaroa	As a descendent of Te Rūnanga o Whaingaroa I could have a perceived conflict of interest in Te Rūnanga o Whaingaroa Council relations.	Declare a perceived conflict
	Tribal Member	Kahukuraariki Trust Board	As a descendent of Kahukuraariki Trust Board I could have a perceived conflict of interest in Kahukuraariki Trust Board Council relations.	Declare a perceived conflict
	Tribal Member	Te Rūnanga ā-Iwi o Ngāpuhi	As a descendent of Te Rūnanga ā-Iwi o Ngāpuhi I could have a perceived conflict of interest in Te Rūnanga ā-Iwi o Ngāpuhi Council relations.	Declare a perceived conflict
John Vujcich	Board Member	Pioneer Village	Matters relating to funding and assets	Declare interest and abstain

Name	Responsibility (i.e. Chairperson etc)	Declaration of Interests	Nature of Potential Interest	Member's Proposed Management Plan
	Director	Waitukupata Forest Ltd	Potential for council activity to directly affect its assets	Declare interest and abstain
	Director	Rural Service Solutions Ltd	Matters where council regulatory function impact of company services	Declare interest and abstain
	Director	Kaikohe (Rau Marama) Community Trust	Potential funder	Declare interest and abstain
	Partner	MJ & EMJ Vujcich	Matters where council regulatory function impacts on partnership owned assets	Declare interest and abstain
	Member	Kaikohe Rotary Club	Potential funder, or impact on Rotary projects	Declare interest and abstain
	Member	New Zealand Institute of Directors	Potential provider of training to Council	Declare a Conflict of Interest
	Member	Institute of IT Professionals	Unlikely, but possible provider of services to Council	Declare a Conflict of Interest
	Member	Kaikohe Business Association	Possible funding provider	Declare a Conflict of Interest
Belinda Ward	Ward Jarvis Family Trust	Trustee		
	Kenneth Jarvis Family Trust	Trustee		
	Residence in Watea			
Belinda Ward (Partner)	Ward Jarvis Family Trust	Trustee and beneficiary		
	Kenneth Jarvis Family Trust	Trustee and beneficiary		
	Residence in Watea	Trustee		

Far North District Council
Strategy and Policy Committee Meeting
will be held in the Council Chamber, Memorial Avenue, Kaikohe on:
Tuesday 9 February 2021 at 9.30 am

Order Of Business

1 KARAKIA TIMATANGA – OPENING PRAYER

2 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 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: **A3052670**

Author: **Kim Hammond, Meetings Administrator**

Authoriser: **Aisha Huriwai, Team Leader Democracy Services**

PURPOSE OF THE REPORT

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

RECOMMENDATION

That the Strategy and Policy Committee agrees that the minutes of the meeting held 1 December 2020 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.

ATTACHMENTS

1. 2020-12-01 Strategy and Policy Committee Unconfirmed Minutes - A3018162

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 Council's Significance and Engagement Policy	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.	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.

**MINUTES OF FAR NORTH DISTRICT COUNCIL
STRATEGY AND POLICY COMMITTEE MEETING
HELD AT THE COUNCIL CHAMBER, MEMORIAL AVENUE, KAIKOHE
ON TUESDAY, 1 DECEMBER 2020 AT 9.39 AM**

PRESENT: Cr Rachel Smith (via TEAMS), Cr David Clendon, Deputy Mayor Ann Court, Cr Dave Collard, Cr Felicity Foy (via TEAMS), Cr Moko Tepania, Cr John Vujcich, Cr Kelly Stratford, Bay of Islands-Whangaroa Community Board Belinda Ward (via TEAMS)

IN ATTENDANCE:

STAFF PRESENT: Shaun Clarke (Chief Executive Officer), Andy Finch (General Manager Infrastructure and Asset Management), Dean Myburgh (General Manager District Services), William J Taylor, MBE (General Manager Corporate Services), Sheryl Gavin (General Manager Strategic Planning and Policy - Acting)

1 KARAKIA TIMATANGA – OPENING PRAYER

Councillor Smith opened the meeting with a Karakia.

The meeting was adjourned from 9.40 am to 9.52 am due to technical issues.

MOTION

COMMITTEE RESOLUTION 2020/21

Moved: Cr Rachel Smith
Seconded: Cr Kelly Stratford

That the Strategy and Policy Committee agree that Deputy Chair Clendon chair the meeting due the physical absence of Councillor Smith.

CARRIED

2 APOLOGIES AND DECLARATIONS OF INTEREST

COMMITTEE RESOLUTION 2020/22

Moved: Cr David Clendon
Seconded: Cr Dave Collard

That apologies from Mayor John Carter be received and accepted.

CARRIED

3 DEPUTATION

Nil

4 CONFIRMATION OF PREVIOUS MINUTES

4.1 CONFIRMATION OF PREVIOUS MINUTES

Agenda item 4.1 document number A3001273, pages 14 - 19 refers.

COMMITTEE RESOLUTION 2020/23

Moved: Cr David Clendon
Seconded: Cr John Vujcich

That the Strategy and Policy Committee agrees that the minutes of the meeting held 20 October 2020 be confirmed as a true and correct record.

CARRIED

5 REPORTS

5.1 DRAFT SIGNIFICANCE AND ENGAGEMENT POLICY 2020

Agenda item 5.1 document number A2995853, pages 20 - 35 refers.

COMMITTEE RESOLUTION 2020/24

Moved: Cr David Clendon
Seconded: Cr Dave Collard

That the Strategy and Policy Committee:

a) **approve the draft Significance and Engagement Policy 2020 for audit**

b) **delegate authority to the General Manager Strategy and Policy to make non-material edits to the Policy as required, with the agreement of the Committee Chair prior to the beginning of the Audit process.**

CARRIED

5.2 JOINT LOCAL AUTHORITY CLIMATE CHANGE COMMITTEE - AGREEMENT AND APPOINTMENT OF MEMBERS

Agenda item 5.2 document number A2992651, pages 36 - 50 refers.

COMMITTEE RESOLUTION 2020/25

Moved: Cr David Clendon
Seconded: Cr Moko Tepania

The Strategy and Policy Committee

a) **revokes the decision made at the Committee meeting on 30 July 2020 (resolution 2020/2)**

4.1 JOINT CLIMATE CHANGE ADAPTATION GOVERNANCE COMMITTEE

Agenda item 4.1 document number A2905655, pages 14 - 22 refers.

COMMITTEE RESOLUTION 2020/1

Moved: Cr Rachel Smith
Seconded: Cr John Vujcich

That the Strategy and Policy Committee:

a) approve the forming of a Joint Climate Change Adaptation Governance Committee with one tangata whenua representative from each of the four Councils that are contained in the Northland Region, these being Northland Regional Council, Whangarei District Council, Kaipara District Council and Far North District Council and that; and

b) approve that Councillor Clendon as the climate change portfolio holder, Councillor Stratford as an alternative, to be appointed as the Far North District Council elected member representative on the proposed Joint Climate Change Adaptation Governance Committee and that;

c) approve that Te Kahu O Taonui be asked to nominate a representative and an alternate as tangata whenua representation on the proposed Joint Climate Change Adaptation Governance Committee and that;

d) approve the development of a policy for the remuneration of non-elected members to committees of Council.

CARRIED

The Strategy and Policy Committee recommends Council

b) agrees, under clause 30A(1) of Schedule 7 of the Local Government Act 2002, with the Northland Regional Council, Whangārei District Council and Kaipara District Council to appoint a joint committee called the Joint Climate Change Adaptation Committee as specified in the Terms of Reference (A2994705), subject to the Terms of Reference being amended by:

- **replacing, in the Membership section, the words "nominated", "nomination" and "nominate" with the words "appointed", "appointment" and "appoint" respectively**
- **replacing, in the Committee Chair and Deputy Chair section, the words "elected from" with the words "appointed by"**
- **replacing, in the Remuneration section, the words "non-elected members remuneration policy of that Council" with "the Northland Regional Council Appointed Members' Allowances Policy".**

c) appoints Councillor Clendon as the Far North District Council elected member on the Joint Climate Change Adaptation Committee.

d) appoints Councillor Stratford as the Far North District Council alternative elected member on the Joint Climate Change Adaptation Committee.

e) request His Worship the Mayor and Cr Clendon to invite Te Kahu o Taonui to nominate two people with skills, attributes, or knowledge that will assist the work of the Joint Climate Change Adaptation Committee to be the Far North District Council iwi/hapū member and alternative iwi/hapū member of the Committee.

CARRIED

RESOLUTION 2020/26

Moved: Deputy Mayor Ann Court
Seconded: Cr John Vujcich

That the Strategy and Policy Committee

a) recommend to Council that a policy for the rummuneration of non-elected members for committees of Council be developed.

b) **request that the policy is not inconsistent with other Northland Councils remuneration policies for Joint Regional committees.**

CARRIED

5.3 CONSULTATION ON DRAFT DISTRICT PLAN

Agenda item 5.3 document number A3000902, pages 51 - 55 refers.

COMMITTEE RESOLUTION 2020/27

Moved: Cr David Clendon
Seconded: Cr John Vujcich

That the Strategy and Policy Committee

a) **endorse the approach to include "Significant Natural Areas" in the consultation process on the draft District Plan and FN2100.**

b) **request a workshop be scheduled early in the new year to provide Elected Members insight into the detail of the documents prior to consultation.**

CARRIED

At 11:14 am, Bay of Islands-Whangaroa Community Board Belinda Ward left the meeting.

6 KARAKIA WHAKAMUTUNGA – CLOSING PRAYER

Councillor Tepania closed the meeting with a Karakia

7 MEETING CLOSE

The meeting closed at 11.28 am.

The minutes of this meeting will be confirmed at the Strategy and Policy Committee Meeting to be held on 09 February 2021.

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CHAIRPERSON

5 REPORTS

5.1 OPTIONS REPORT TREATED WATER SUPPLY REGULATION

File Number: **A3042053**

Author: **Donald Sheppard, Strategic Planner**

Authoriser: **Sheryl Gavin, Manager - Corporate Planning & Community Development**

PURPOSE OF THE REPORT

To provide options and a recommendation to Council for the regulation of treated water supply in the Far North District.

EXECUTIVE SUMMARY

- This report identifies seven problems relating to the treated water supply network in the Far North:
  1. being able to preventatively apply water restrictions, for example due to an emerging drought
  2. having the ability to still charge customers if water supply is interrupted, shut off, quality is poor or if water use is restricted
  3. being able to manage the amount of water supplied to customers
  4. being able to estimate water use if a meter is faulty or being repaired
  5. avoiding potential contamination of the water supply by members of the public
  6. avoiding damage to council's assets by the public (particularly damage to water mains)
  7. preventing misuse of the water supply, for example by people wasting water.
- The report assesses three options to address the problem:
  1. do nothing – allow the current bylaw to revoke
  2. develop a new supply contract
  3. make a new bylaw.
- The report recommends that the governing body approves option 3 - make a new bylaw to regulate water supply.

RECOMMENDATION

That the Strategy and Policy Committee recommend to Council, under section 155 of the Local Government Act 2002:

a) agrees that making a new Treated Water Supply Bylaw is the most appropriate way to regulate reticulated water supply in the Far North District;

b) requests that staff prepare a statement of proposal to make a new Treated Water Supply Bylaw.

1) BACKGROUND

From Far North District Council's (FNDC's) 2018/19 Annual Report, around one-third of properties in the Far North (10,133 properties) are connected to water services and all these properties have water meters. In the 2019 financial year, $10.1 million in water rates was collected from these properties.

These water services are now regulated by FNDC's Water Supply Bylaw 2009, which was due for review on 16 October 2019. As this review did not occur, the Bylaw will revoke on 16 October 2021.

To avoid not having a bylaw to regulate water supply, a new bylaw needs to be made before 16 October 2021.

Water supply reforms were announced by Central Government in July 2020. These reforms make it likely that the Council will lose its water management role to a super-regional entity with shared ownership by local authorities including FNDC. When this occurs, the proposed regulation could be superseded by shared rules established by this entity and agreed by FNDC. However, the new entity will not commence operation until after July 2022. Therefore, FNDC needs to proceed with its own water supply regulation in the interim period.

2) DISCUSSION AND OPTIONS

Proposed course of action

Make a new bylaw to regulate treated water supply in the Far North District.

Issue and problem definition

From analysing logged interactions with the public regarding the supply of treated water, key problems include:

1. being able to preventatively apply water restrictions, for example due to an emerging drought
2. having the ability to still charge customers if water supply is interrupted, shut off, quality is poor or if water use is restricted, for example, due to a drought
3. being able to manage the amount of water supplied by determining the level of water supplied to a property
4. being able to estimate water use If a meter is faulty or being repaired
5. avoiding potential contamination of the water supply by members of the public, which could make it unsafe to drink or use
6. avoiding damage to council's assets by the public (particularly damage to water mains)
7. preventing misuse of the water supply, for example by people wasting water.

Scope

The regulation of water supply applies to all eight water supply schemes owned by council. It applies to all users of water supplied by these schemes including property owners/occupiers and operators of bulk water supply businesses.

It does not extend to private water schemes, which are regulated by national legislation.

Affected and interested parties

These parties include:

- All those supplied with reticulated water from Far North District Council's water schemes
- Commercial suppliers of bulk water
- Relevant tradespeople such as plumbers and drainlayers
- Property developers and building companies
- Community groups concerned about the supply of water to their community
- Northern Regional Council
- The District Health Board
- Far North Water – our partner in the delivery of treated water.

If elected members decide that a new bylaw will be made, these parties will be defined in greater detail in a communication and engagement plan.

Māori

Wai, or water, is regarded as a taonga of significant importance to Māori. Therefore, effective management of wai is considered essential by Māori. Consultation on new regulation in this area, if any, will require input from Iwi.

Objectives

1) To fairly and efficiently manage water supply in the district
2) To ensure public health and safety
3) To protect Council's assets
4) To protect the public from nuisance
5) To protect the water supply from misuse.

Relevant bylaw-making powers of the Council

To address the objectives, a new treated water supply bylaw could be made under:

- section 145 of the Local Government Act 2002 (general bylaw-making powers) to protect, promote and maintain public health and safety and/or to protect the public from nuisance
- section 146 of the Local Government Act 2002 (specific bylaw-making powers), to manage, regulate against, or protect from, damage, misuse, or loss, or to prevent the use of, the land, structures, or infrastructure associated with water supply.

Under section 155 of the Local Government Act 2002, before making a bylaw the Council must first determine that a bylaw is the most appropriate way of addressing the perceived problem.

Relevant water supply legislation

Given the national importance of a safe and reliable water supply, there are at least fourteen Acts of Parliament as well as eight national standards, guidance documents and codes which govern the supply of treated water.

a) **Legislation Regulating the Council**

Much of this legislation includes mandatory obligations for territorial authorities such as Far North District Council. These obligations are set out in:

- the Local Government Act 2002
- the Local Government Rating Act 2020
- the New Zealand Building Code
- the Fire and Emergency Act 2017
- the Health Act 1956
- the Resource Management Act 1991.

Some of these obligations do not directly apply to the public but set out what the Council must do. For example, under the Health Act 1956, FNDC must prepare a water safety plan for each water scheme and review it at least every five years, ensure that drinking water complies with drinking water standards and test back-flow protection devices annually.

Other Council obligations are broader and more directly affect the public. For example, under the Health Act 1956, FNDC has a duty to protect and promote public health and must take reasonable steps to protect water supply from contamination or pollution. As public activity may contaminate or pollute the water supply, the Council must ensure that this does not occur.

b) **Legislation Directly Regulating Public Activity**

National legislation also directly regulates public activity in several areas, for example:

- Wasting water is an offence under sections 192 and 224 of the Local Government Act 2002
- The Building Act 2004 and the associated Building Code sets standards for plumbing within buildings including connections to the water supply. Section 152 of the Local Government Act 2002 says that no bylaw can be made that covers matters regulated under the Building Act

- The ability to restrict water for non-payment of water bills is covered in section 69S of the Health Act 1956
- Section 69ZZZ of the Health Act 1956 covers the installation of backflow devices
- Protection of catchment areas is covered by Sections 224 and 228 of the Local Government Act 2002, section 69ZZO of the Health Act 1956, and section 15 of the Resource Management Act 1991
- Section 228 of the Local Government Act 2002 makes it an offence to take water without a proper permit
- Section 19 of the Local Government (Ratings) Act 2002 allows the council to charge for water at a targeted rate
- It is an offence to tamper with water meters under section 224 of the Local Government (Ratings) Act 2002
- Enforcing water restrictions is covered under section 193 of the Local Government Act 2002, sections 69S and 69T of the Health Act 1956, sections 329 and 330(1) of the Resource Management Act 1991 and section 25 of the Civil Defence Emergency Management Act 2002.

Local regulation is not necessary in the above areas as these areas are covered by this national legislation.

Gaps in the legislation where local regulation is appropriate

While national legislation covers many aspects of water supply, there are some areas not covered by this legislation where local regulation is appropriate, including:

- terms and conditions of supply, for example, covering:
    - ordinary and extraordinary supply
    - the size of service delivered to properties
    - applications for supply, disconnection and change of use
    - connections to the system
    - permits for supply
    - the use of fire hydrants and standpipes
    - placement of connections, meters and stop taps
    - meters
    - fees and charges.
- restrictions on supply for example, when a drought scenario appears likely
- ensuring public health and safety e.g.
    - prevention of contamination
    - fittings and connections to be in good repair
    - inspection of connections and meters.

Options

1. Do nothing – allow the current bylaw to revoke

This option relies on public goodwill in that most people will want to do the right thing. However, without rules spelling out what the right approach involves, this is likely to result in an ambiguous situation for both the public and for staff, where sorting out any issues relating to the supply of water to properties from the Council's water supply network may become difficult.

While existing national legislation does cover a range of areas relating to water supply, there are significant gaps in this legislation (described above) where local regulation would be appropriate.

Allowing the current Bylaw to revoke would mean that the Council would have no powers of enforcement, which may compromise its ability to address health and supply risks in a timely and cost-effective manner.

For the reasons above, this option is not recommended.

2. Develop a supply contract
An alternative to a bylaw is a supply contract with customers for the supply of water from the Council's network. A local government example of this is the customer contract used by Watercare in Auckland.

A contract of this nature would have some advantages:

- it would be legally binding
- enforcement of a contract can be simpler than enforcing a bylaw as it would involve a one-on-one agreement between the Council and the customer, rather than district-wide rules that are set out in a bylaw.

However, there are several disadvantages with this option:

- not all problems and objectives associated with the supply of water identified in this report can be covered in the terms and conditions of a supply agreement or contract with each customer and therefore a bylaw will still be necessary. For instance, provisions regarding not digging or excavating near water mains would not be included in a contract. Note that the supply of water in Auckland is regulated by a bylaw made by Auckland Council and administered via a contract from Watercare with each customer
- changing to a contract would pose logistical issues such as getting around 10,000 existing customers to sign the contract
- this new approach is likely to be time-consuming to introduce, meaning that the existing bylaw is likely to revoke before a contract regime is put in place.

This option is not recommended as staff consider the disadvantages identified above outweigh the advantages of introducing individual supply agreements or contracts with customers for the supply of water.

3. Make a new bylaw
With this option, Council would make a new bylaw to regulate water supply. Benefits of making a bylaw include:

- it would back up other options such as public education
- it would be legally binding
- it would include enforcement provisions to ensure compliance
- it would set District-wide rules which would be applicable to all users
- it is the status quo approach which would not pose logistical challenges to introduce and would not require a communication and compliance campaign to move around 10,000 properties to individual contracts.

For these reasons, a new bylaw is recommended as the most appropriate approach to water supply regulation.

Summary of the three options

	1. Do nothing – allow the current bylaw to revoke	**2. Make a new supply contract**	**3. Make a new bylaw**
Advantages	Public education is appropriate for the majority who want to do the right thing Existing national legislation covers	Legally binding Will clearly spell out the terms and conditions of treated water supply	Legally binding Would back up public education and existing national legislation Can include provisions beyond the

	many areas relating to water supply	In some cases, could be simpler to apply than a bylaw as it involves a one-on-one contract with the customer	terms and conditions of supply in Option Two Will include enforcement provisions It is the status quo approach with no need to sign up existing customers (as in Option Two) Alignment with the approach of other local councils in the super-regional area under the proposed water reforms
Disadvantages	No powers of enforcement There are gaps in the national legislation where local rules are needed	Logistical issues to sign up existing customers Limited to terms and conditions of supply applying to individual customers Likely to be time consuming to introduce	Inability to have individual contracts as in Option Two

3) FINANCIAL IMPLICATIONS AND BUDGETARY PROVISION

The cost of preparing a proposal to make a new treated water supply bylaw and then consulting on that bylaw will be met from existing operational budgets.

ATTACHMENTS

Nil

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 Council's Significance and Engagement Policy	As there is a high degree of public interest across the entire district regarding the supply of water from the Council's reticulated network the recommendation contained in this paper meets the Council's significance threshold.
State the relevant Council policies (external or internal), legislation, and/or community outcomes (as stated in the LTP) that relate to this decision.	The recommendation in this report directly applies to section 145 and 146 of the Local Government Act 2020 and references sections 152, 192, 193, 224, 228 of the same Act. As part of the legal review of relevant legislation that is applicable to supply of water the following legislation has also been referenced; • The Building Act 2004 • The Health Act 1956 • The Resource Management Act 1991 • Sections 19 and 224 of the Local Government (Ratings) Act 2002 • The Civil Defence Emergency Management Act 2002.
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.	As there is reticulated water supply in all of wards of the District the recommendation in this paper has District wide relevance.
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.	The recommendation in this report will be of importance to Māori, considering water's status as taonga. Seeking the views and input of Iwi in the development of a new bylaw (if recommendation is endorsed) is integral. Discussion between Council and Iwi is yet to commence.
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	Affected and interested parties are described in the body of this report.

– youth, the aged and those with disabilities).	
State the financial implications and where budgetary provisions have been made to support this decision.	The cost of preparing a proposal to make a new water supply bylaw and then consulting on that bylaw will be met from existing operational budgets.
Chief Financial Officer review.	The Chief Financial Officer has reviewed this report.

6 INFORMATION REPORTS

6.1 BRIEFING PAPER ON-SITE WATER STORAGE FEBRUARY 2021

File Number: **A3038395**

Author: **Donald Sheppard, Strategic Planner**

Authoriser: **Sheryl Gavin, Manager - Corporate Planning & Community Development**

PURPOSE OF THE REPORT

To update the elected members on the work being done to assess the potential for on-site water storage, such as rainwater tanks, as a solution to improving the resilience of public water supply schemes. This report covers previous and current Far North District Council (FNDC) projects and the current stance of other local authorities.

EXECUTIVE SUMMARY

- Elected members and members of the public have suggested that on-site water storage could be a solution to improving the resilience of the district's water supply schemes that supplies both residential and commercial properties. This largely refers to harvesting of rainwater in water tanks but could include on-site storage of treated water
- This report provides a summary of an initial review of what other Councils are doing in regards to the onsite collection and storage of water, what the Far North District has done in recent years in response to previous requests to investigate on-site water storage across the District and then provides an update on how staff are responding to and progressing with a request for an in-depth, definitive report on this topic that is due in the third quarter of 2021.

RECOMMENDATION

That the Strategy and Policy Committee receive the report Briefing Paper On-Site Water Storage February 2021.

BACKGROUND

The local problem

At least nine severe droughts have occurred in Northland from 1900 to 2020, increasing in frequency after 1994. Since 2010, according to the New Zealand Drought Monitor, extremely dry periods or droughts occurred in the Far North in 2010, 2011, 2013, 2017 and 2020.

The risk of insufficient drinking water supplies was determined at the 5 July 2020 Council meeting as one of the current top organisational risks that Council currently has. The risk is described as follows:

Because of	There is a chance that…	leading to…
Lack of freshwater resilience - long-term trends in rain fall coupled with changing and increasing consumer demands	Current freshwater supply systems will continue to not meet demand both now and into the future	Critical impact on our communities i.e. lengthy water restrictions; no/interrupted supply; costly economic consequences (affordability); extensive Health & Safety impacts across the district; economic and reputational risk from a failure to supply adequate potable and fresh water; negative environmental impacts.

Unless effective mitigations are put in place, it is likely that current water supply issues will become worse, as the frequency, intensity, and duration of droughts in Northland are forecast to increase in the coming years.

The national problem

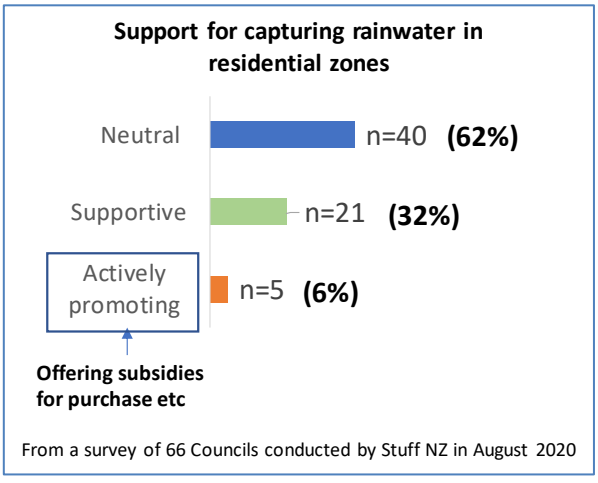
Water supply is also a national issue and the national climate change risk assessment (August 2020) gave the risk to potable water supplies the highest consequence and urgency rating. According to the Ministry for the Environment, risk to potable water supply is one of ten climate change risks that "require urgent action in the next six years to reduce their impacts". Nationally, urgent action is required to mitigate what is predicted to be a major risk by 2050 and an extreme risk by 2100. Therefore, ensuring reliable water supply is likely to be a key focus area in the national climate change adaptation plan (due 2022) where the government is expected to make recommendations for improvement.

DISCUSSION AND NEXT STEPS

What are other councils doing in this area?

Stuff NZ published an article in August 2020 on local councils' attitudes to rainwater storage tanks connected to private homes/buildings to supplement the supply of treated water. Stuff conducted a survey of 66 local councils and identified only five were actively promoting rainwater capture in residential zones where reticulated water is provided. Another 21 councils (32%) were supportive, while 62% were neutral.

The actions of councils that are supportive or actively promoting on-site rainwater storage are described below.



Types of on-site storage promoted by other local councils

A small number of councils (e.g. Kāpiti District Council, Gore District Council and Auckland Council) financially support rainwater collection for non-potable use only (e.g. outdoor use and toilet flushing) by providing loans for residents to install tanks.

At least eight councils in the lower North Island are actively promoting rainwater collection for emergency use. This involves partnering with a New Zealand water tank manufacturer, The Tank Guy, to make a 200-litre water tank and kit available for $105 (RRP $265). These tanks can either

collect rainwater or store treated water for an emergency and are offered at this cost price by Wellington City Council, Hutt City Council, Porirua City Council, Kapiti Coast District Council, Carterton District Council, Palmerston North City Council, South Wairarapa District Council and Horowhenua District Council.

Reasons why other councils are for or against on-site water storage

The Stuff NZ article identified several reasons for the attitudes of the local authorities:

Reasons for being negative	Reasons for being positive
• Rainwater can contaminate treated water. This means that potable treated water and non-potable water should be separated or the rainwater should be filtered and treated on-site • It is difficult to ensure that untreated rainwater is not used as a potable source • Looking at the total cost (borne by local council and/or property owners, storage of rainwater is not a cost-effective solution compared with developing existing water supply systems • Water tanks run dry in drought periods • The cost involved in running a pump from a rainwater storage tank • The carbon footprint of rainwater systems is higher than treated water • Council metered water rates will increase if demand for reticulated water supply reduces due to onsite rainwater collection, as the fixed costs must continue to be covered for the network.	• Rainwater used for outdoor purposes (washing cars or boats and watering the garden or lawn) can potentially relieve pressure on reticulated water supply • Rainwater can be stored for an emergency • There may be environmental issues with developing water infrastructure. For example, in West Auckland, plans to build a new water treatment plant met opposition because it required clearing native bush.

Whangarei District Council Briefing Paper

A briefing paper was submitted to Whangarei District Council (WDC) on 12 November 2020 to examine the case for rainwater tanks supplementing the water supply. The conclusions of that paper are summarised below.

For Whangarei, using 5m3 rainwater tanks for non-potable uses to supplement the town supply would be of limited benefit for the following reasons:

- Rainwater tanks installed at 13,000 properties would provide only a very small additional storage capacity equating to less than three days summer usage by Whangarei. Because of this small additional storage, their use will not avert the need for investment in raw supply and water treatment to meet the demands of population growth
- Even if on-site rainwater storage increases, it will not reduce the cost of infrastructure required by WDC in the future. These findings are supported by a GNS report for the Wellington Region which concluded that… “installation of rainwater tanks for non-potable uses (toilet flushing and outdoor usage) would be unlikely to make a significant contribution to reducing demand in Wellington City during dry summers; and furthermore would be difficult

to justify on economic grounds as installation costs greatly outweigh savings in water charges"

- The development costs of tapping new water sources and extending the capacity of the current treatment plant to meet Whangārei's future needs ($30 million) would be far less than on-site rainwater storage ($90 million)
- Over the lifetime of a water tank, the cost of water per cubic metre is estimated to be 4 times more expensive than that provided via the water network
- Similarly, the cost of power to run a water tank pump is 4 times more expensive than the cost of pumping reticulated water
- Rainwater collection has a negative environmental impact. An Environmental Agency UK report found that on average rainwater systems had a carbon footprint 1.4 times greater than mains water supply.

Current Initiatives to Address Water Resilience in the Far North
Several initiatives are already underway or planned to address the district-wide problem of water supply resilience during drought. For example:

- Increasing raw water capture e.g. from a second bore at Monument Hill to supply the Kaikohe scheme and from a bore at Sweetwater to supply the Kaitaia scheme
- Increasing water storage for the Kaikohe scheme via a 750,000 cubic-metre water reservoir to be built with Provincial Growth Funding primarily to support horticulture, but also to act as a back-up water source for Kaikohe
- Building a new water treatment plant and storage tanks at Omanaia
- Detecting and repairing leaks, with the Kaitaia and Paihia water schemes identified as the worst for water loss. The priority is the Kaitaia scheme.

Past Initiatives to Investigate On-Site Water Storage in the Far North

Over the last decade the use of on-site water storage to provide greater water supply resilience has been investigated. However, no resolution has been made to support this approach across the district. Examples of previous initiatives are summarised as follows.

1. 2014 Engagement with hapū in the South Hokianga

In 2014 a series of hui regarding water supply were held with hapū in the South Hokianga. A common theme raised by hapū is that they have a very strong mana whenua relationship with their rivers. The hapū were concerned that water is needlessly wasted through leaks and poor management processes. They stated that people are now relying on rivers without first utilising the resource they already receive by harvesting rainwater and on-site storage. See the attached report to the Infrastructure Committee on 25 February 2015.

2. 2015 South Hokianga Water Tanks Options Assessment

In 2014, FNDC considered initiatives relating to improving water security and supply for the communities of Opononi, Omapere, and Rawene. Alongside investigating a new groundwater source (the Smoothy Road bore), options were investigated to use on-site water tanks to supplement water supply during periods of low stream flow. A report by Morphum Environmental Ltd on this topic was provided to FNDC in May 2015 (attached).

Rather than recommending the use of on-site water storage, elected members adopted a recommendation at its 8 October 2015 meeting to undertake exploratory drilling at Smoothy Road to investigate the presence of ground water in this area. This bore was successful, and the Smoothy Road bore is now in the final stages of completion. Given the success of this bore, the role of water tanks in the South Hokianga is not currently being developed or promoted.

3. 2015 Resolution for Administration to Develop Strategies to Better Manage Water Shortages

At the October 2015 meeting, Council also adopted a recommendation that administration should work on developing water supply and water management strategies to better manage water shortages. Staff advised at the time that initiatives were being developed involving water conservation, education and the role of water tanks.

4. 2015 Investment Logic Mapping Workshop – Decision Making for Water

Alongside the South Hokianga water tanks investigation, an Investment Logic Mapping (ILM) workshop was held in late 2015 attended by FNDC staff and elected members. The purpose of the workshop was to gain a full understanding of the benefits and issues of on-site water storage. In preparing for this workshop a wider scope was developed, to attempt to define the problem(s) regarding water supply.

The ILM process defined and weighted the benefits of addressing identified problems, as follows:

- More cost-effective and efficient sources (40%)
- Improved Maori, stakeholder confidence and satisfaction (40%)
- Improved source reliability, quality, availability (20%)

A copy of the ILM workshop summary document is attached.

5. 2016 Te Kao Water Supply (Tanks) Assessment

Water tanks were identified as a preferred solution for a failing community water supply scheme at Te Kao.

In 2016 FNDC staff helped the community of Te Kao investigate options to improve the safety of water being supplied to the community by a private water supplier. Through a working group, FNDC staff helped community members come to a decision (by way of community ballot), that on-site water tanks were the preferred option.

The on-site storage option was included in the 2018-28 LTP consultation process. This consultation focused on identifying preferred, affordable funding options for the Te Kao community. In the final 2018-28 LTP, FNDC confirmed its decision to support Te Kao's community preference for rainwater harvesting, with the cost of implementation to be borne by residents. Council agreed that staff would consult with affected residents on providing interest free loans to those who wished to take up the offer. To date, this option has not been implemented in the community because of the costs involved.

Ongoing Water Conservation Education Initiatives

The Communications Team has actively communicated with the public about water issues including creating posters and media releases. Since May 2019 there have been 41 media releases concerning water.

The Communications Plan – Water includes communication strategies about water shortages, water supply and water projects to improve the water resilience of Far North towns and surrounding areas. This Plan incorporates a number of initiatives for the district (both new and ongoing) regarding water conservation education**;** for example issuing Save Water This Summer posters, and Save Water Now signs; and installing existing Save Water Now billboards to inform affected communities about relevant water restrictions. These billboards refer to the bewaterwise.org.nz website, where a range of water conservation measures are recommended.

Follow-Up In-Depth Report with Recommendations

The in-depth report, that will be provided in Quarter Three of 2021, will analyse the problem of water supply resilience in more depth and provide a recommended course of action. The report will:

- Outline the requirement for council to provide water from a wellbeing perspective
- Discuss alternative levels of service delivery, including a recommended minimum level
- Analyse the current and future ability of our eight water supply schemes to supply treated water in periods of drought at the recommended minimum level of service. This will be informed by a demand forecasting study to be conducted by Staff, assisted by Morphum Environmental NZ

- Describe the advantages and disadvantages of possible supply solutions, such as sourcing raw water, building reservoirs and dams, increasing leak detection and repair work, water conservation measures and demand management approaches (e.g. imposing water restrictions and/or increasing the price of treated water) alongside on-site water storage
- Make recommendations regarding the preferred solution/s for each water scheme
- Provide indicative costs for these solutions and discuss how the Council could encourage more on-site water storage if this is a preferred solution**.**

FINANCIAL IMPLICATIONS AND BUDGETARY PROVISION

To be assessed in the following in-depth report.

ATTACHMENTS

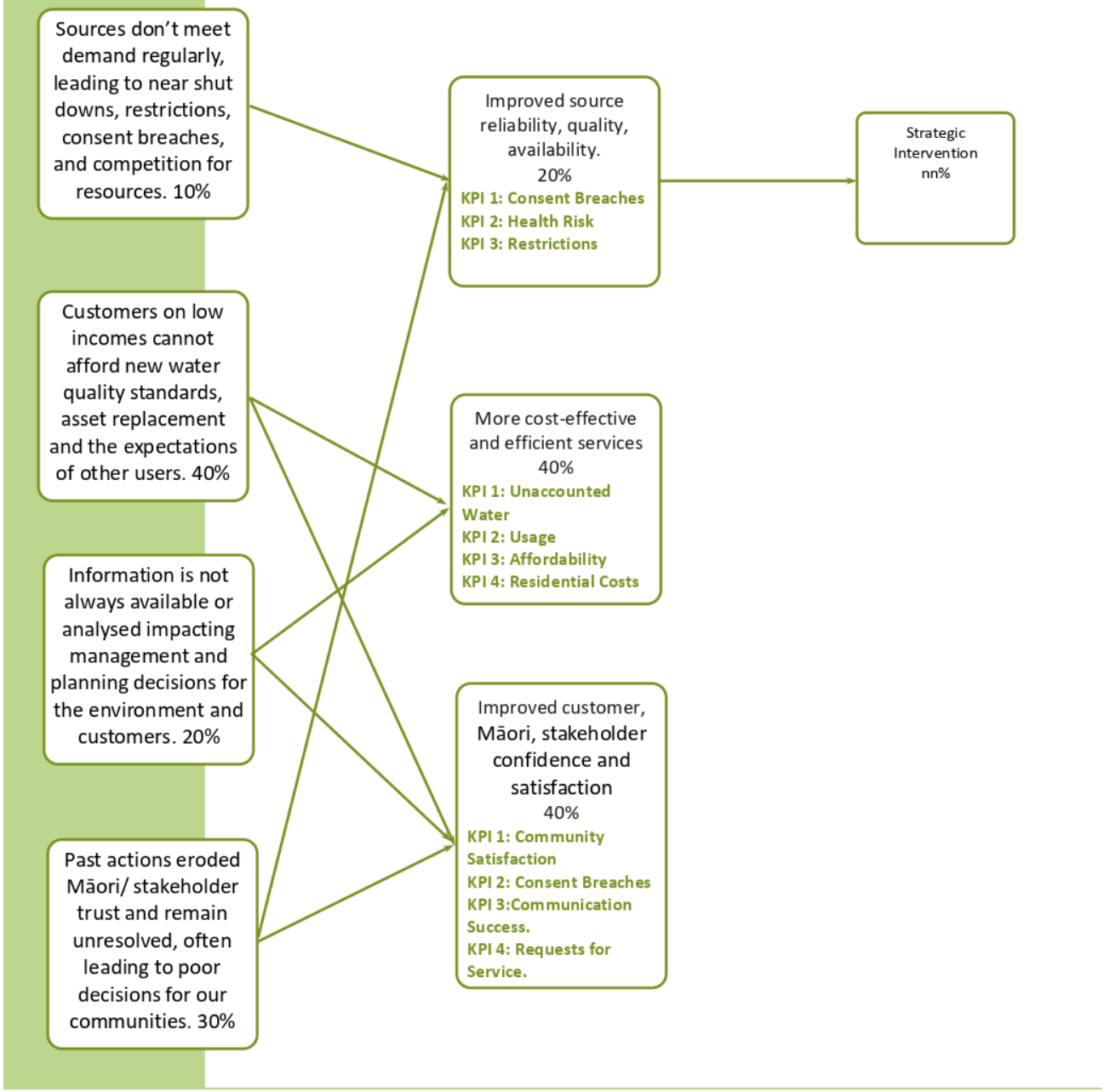
1. **Investment Logic Map - FNDC Water Supplies v2.0a 2015 - A3041995**
2. **Morphum South Hokianga Water Tanks Options Assessment 2015 - A3041996**
3. **NIWA NZ Drought Index results Dec 2020 - A3041997**
4. **Northland Drought Assessment - NRC 2017 - A3041998**
5. **South Hokianga Water Supplies Infrastructure Committee report 250215 - A3041999**
6. **Stuff.co.nz Sky harvest - turning the tide on rainwater tanks - A3042002**
7. **Summary National Climate Change Risk Assessment 2020 - A3042003**
8. **Whangarei District Council Briefing Paper 12 October 2020 Rainwater Tanks to supplement Town supply - A3042004**

FAR NORTH DISTRICT COUNCIL

Water Supplies in the Far North

Improving Customer Outcomes

INVESTMENT LOGIC MAP
Program



Investor:	Far North District Council	Version No:	2.0
Facilitator:	Edward Guy	Initial workshop:	04/09/2015
Accredited Facilitator:	No	Last modified by:	Edward Guy 14/10/2015
		Template version:	5.0

MORPHUM ENVIRONMENTAL LTD
Engineers & Consultants

Southern Hokianga Water Storage Assessment

Water Tank Options Assessment

Final v2

Prepared for Far North District Council by Morphum Environmental Ltd
May 2015

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MORPHUM ENVIRONMENTAL LTD

Engineers & Consultants

Document Control

Client Name: Far North District Council

Project Name: Southern Hokianga Water Storage Assessment

Project Number: P00437

Document: Water Tank Options Assessment

Revision History

Status	Date Issued	Author	Reviewed By	Released By
Final	22/05/2015	Emily Afoa Kolt Johnson	Bridget Fitzgerald	Dean Watts
Final v2	25/05/2015	Emily Afoa Kolt Johnson	Bridget Fitzgerald	Dean Watts

Reviewed by:

Reviewer: Bridget Fitzgerald **Signature:**

Released by:

Reviewer: Dean Watts **Signature:**

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Contents

1.0 Introduction

Morphum Environmental Ltd (Morphum) have been engaged by the Far North District Council (FNDC) to report on options for using on-site water tanks as a solution to supplement water supply during periods of low stream flow. Increasing drought frequency and changing consent conditions are resulting in the current raw water sources being unable to provide sufficient water to the South Hokianga communities of Omapere, Opononi, and Rawene during periods of low flow.

While on-site water storage for drought resilience is the focus of this report, there are multiple issues operating in regards to water supply concerns. Water tanks are only one component of a system of measures being considered to provide water security for the Southern Hokianga area. Examples of the issues and concerns with regards to water supply include:

- Drought resilience
  - Ability to supply reticulated water demand during periods of low annual mean flow when surface flows are below the minimum required residual stream flows.
- Supply variability
  - River and stream flow is highly variable throughout the year. Current water demand in Opononi, Omapere, and Rawene exceeds the availability of raw water sources due to low flow restrictions on the surface water takes during late summer and autumn (typically Feb–May).
- Water quality
  - The provision of a safe water supply is required to safeguard people from illness caused by contaminated water.
- Conservation
  - Water wasted through leakage, unnecessary uses, or overuse can impact on water availability during dry periods. Furthermore, water availability is expected to decrease in the future due to climatic drivers, thus the importance of water conservation will encompass environmental, social, and cultural factors in addition to economics.
- Future infrastructure
  - Opononi, Omapere, and Rawene exhibit a stable to declining permanent population with a growth in seasonal residents. A range of methods are being assessed to support infrastructure development projects and ongoing costs of existing infrastructure. Private storage has been identified as one possibility to maintain a continuous water supply.

1.1 Options

This investigation has identified three options for implementing water tanks, each discussed further in subsequent sections:

- Option 1: Reticulation storage for potable and non-potable use
- Option 2: Rainwater for non-potable use only
- Option 3: Combined reticulation and rainwater storage for potable and non-potable use

2.0 Option 1: Reticulation Storage Only

For Option 1 the water tank is connected directly to the reticulated supply (Figure 1). The tank acts as storage of potable (drinkable) water only and has the benefit of not requiring retrofit of spouting or installation of specialised rain collection devices at the existing property. Tanks are filled from the reticulated town supply during the off peak period and used for all domestic needs. It is likely that additional water treatment is not required. Option 1 provides the most straightforward installation requirements. Table 1 provides a comparison of the strengths and weaknesses for Option 1.

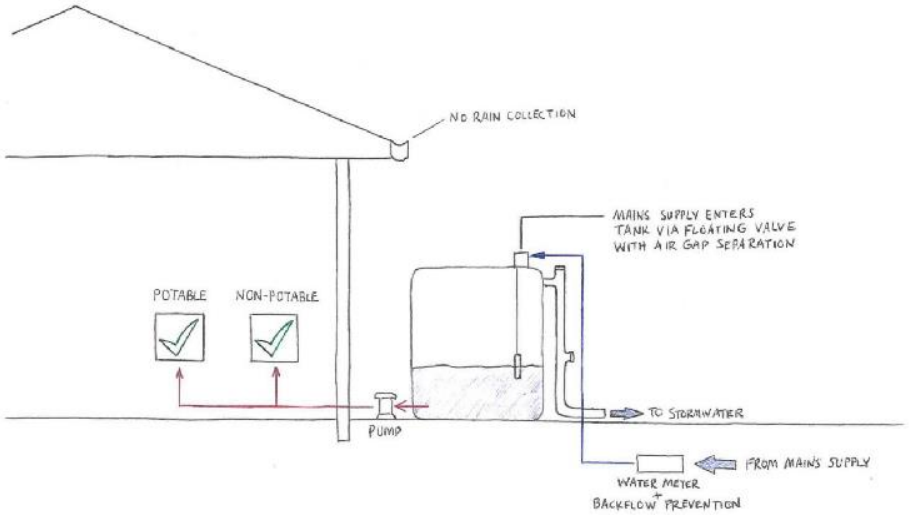

Figure 1: Schematic for reticulated water storage option.

Table 1: Strengths and weaknesses of Option 1; Reticulation storage only

Strength	Weakness
Suitable regardless of roof type, no upgrade/retrofit of roof required	No rain storage, so number of days with backup water availability is directly related to size of tank
No upgrade/retrofit of spouting required	Maximum tank size is likely to be required
No additional house plumbing required	Demand on the existing mains water supply will remain the same – no reduction in total use
Cheapest to maintain	Risk of homeowner connecting roof spouting to tank for potable use without appropriate treatment
No filtration/disinfection required	Relies on the home owner to turn off the mains supply during periods of water restrictions to use stored tank supply only
	Some work may be required to redirect existing downpipes from roof collection elsewhere

3.0 Option 2: Rain Storage for Non-Potable Use Only

For Option 2 the tank is installed to collect water from roof runoff for non-potable use only, that is toilet flushing, laundry, gardening, boat washing etc. Essential components in a properly operating rain collection system include; roofing in good condition, properly installed gutters/spouting, leaf diverters, and first flush diverters. These components reduce contaminants entering the tank, and extend the time intervals between tank cleaning. Ongoing maintenance is required to ensure appropriate operation of the rain collection system. Additional treatment is not required for non-potable use. To keep the rainwater separate from potable reticulated supply, additional plumbing work will be required to isolate the two sources within the home. Table 2 provides a comparison of the strength and weakness for Option 2.

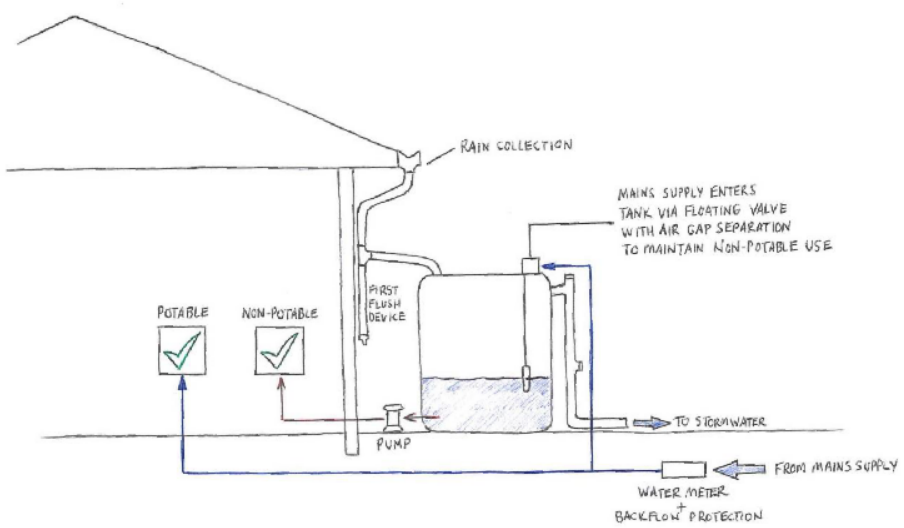

Figure 2: Schematic for rain storage option.

Table 2: Strengths and weaknesses of Option 2; Rain storage for non-potable use only

Strength	Weakness
Installation is easy for new homes	Installation may be difficult for existing homes, depending on home construction & existing piping
Reduces overall demand on mains water supplies	Potential requirement for upgrades to existing roofing, spouting, & downpipes (i.e. lead paint, poor condition)
No cross-contamination issues between potable & non-potable sources	Roof size may not supply sufficient water relative to the number of occupants
Can be a smaller sized tank than that required to meet all domestic needs (potable & non-potable)	Does not supplement potable supply during water shortages
No filtration/disinfection required	Ongoing maintenance required – tank cleaning

4.0 Option 3: Combined Storage for Potable Use

For Option 3, the tank is installed to fill via rain collection and reticulated town supply for all domestic use (potable and non-potable). As with Option 2, essential to the operation of this system is the requirement for roofing in good condition, properly installed gutters/spouting, leaf diverters, and first flush diverters. These components reduce contaminants entering the tank, and extend the time intervals between tank cleaning. Ongoing maintenance is required to ensure proper functioning of the rain collection system. Additional filtration and disinfection systems are required to treat water to drinking standards. Ongoing maintenance is required to ensure appropriate operation of the rain collection and treatment system. Table 3 provides a comparison of the strengths and weaknesses for Option 3.

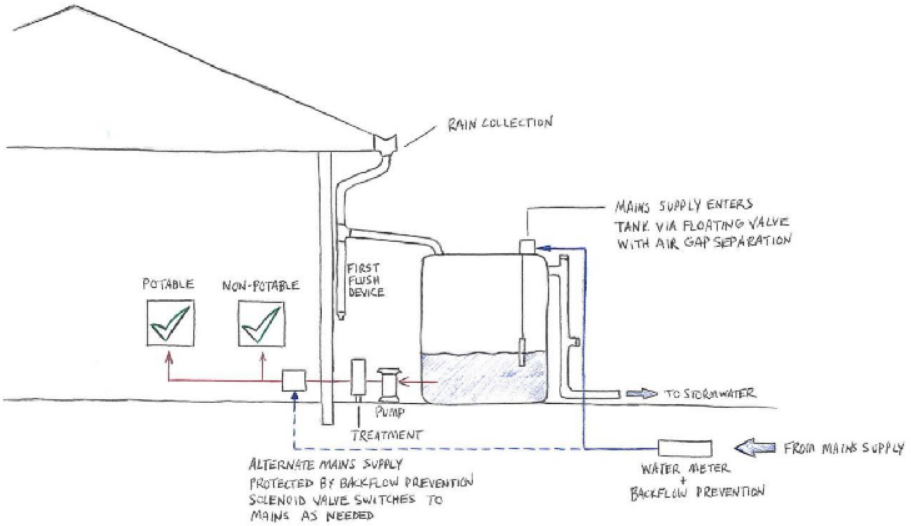

Figure 3: Schematic for combined storage option.

Table 3: Strengths and weaknesses of Option 3; Combined storage

Strength	Weakness
Can connect to existing household plumbing	Potential requirement for upgrades to existing roofing, spouting, and downpipes
Reduces overall demand on mains water supplies	Requires re-treatment of potable water once mixed with roof water by way of filtration and disinfection
Supplements potable supply during water shortages	If the water supply is alternated between the mains and tank, additional backflow prevention is required
	Ongoing maintenance required – tank cleaning & upkeep of treatment system

5.0 Costs

The components required to install each water tank option and the costs associated have been compiled in Table 4 and Table 5 and presented in Figure 4. All costs are exclusive of GST.

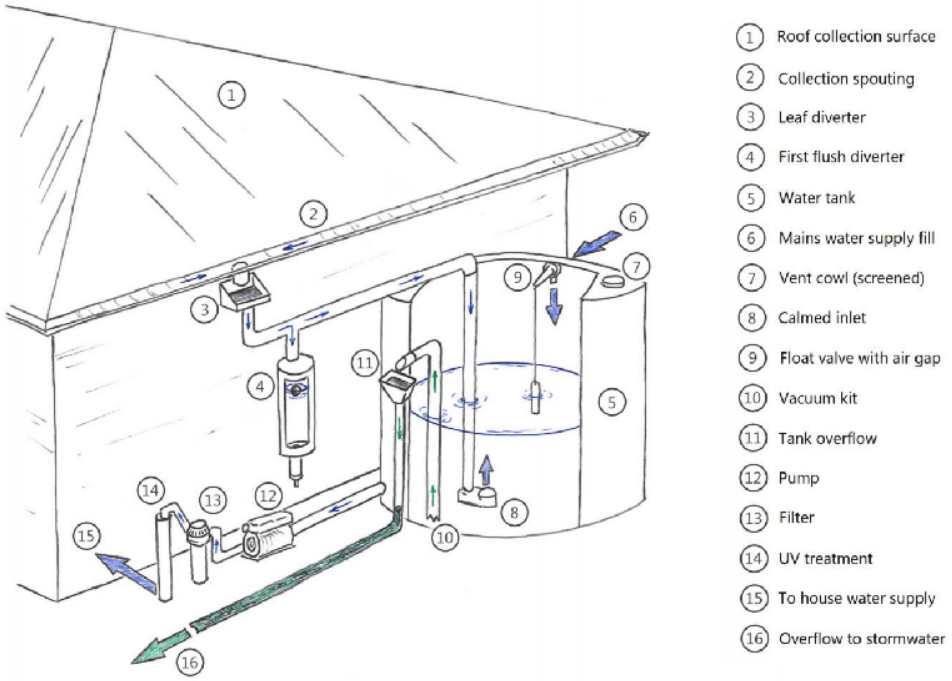

Figure 4: Components included in all three water tank installation options.

The cost of installing a water tank at a private residence can vary considerably. Costs for each water tank component are presented as a range in Table 5. The low cost value represents the simplest solution where installation does not present any difficulties (i.e. little additional pipe work) and low cost components are used. The high cost value represents additional installation needs (i.e. greater plumbing requirements) and higher cost componentry.

The primary factor in the overall cost is the complexity of the installation. Water tanks are easiest to install with a new build, where the installation is completed in conjunction with the construction of the new house. Buildings which require upgrades to spouting, roofing, and internal piping present the greatest installation challenge and consequently, the greatest expense. This report presents estimates for a range of installations; however, some variables at individual homes may lead to cost estimates outside the range presented.

Other factors that affect cost are variations in brand, type, and pricing of components from various sources, however these are considered minor in relation to the complexity of the install.

Table 4: Components required for each of the options presented

Component	Option 1 (reticulation storage for potable use)	Option 2 (rain storage for non-potable use)	Option 3 (combined storage for potable use)
Tank	✓	✓	✓
Levelling & sand for tank placement	✓	✓	✓
Tank transport	✓	✓	✓
Dual plumbing		✓	
Domestic Pump	✓	✓	✓
Spouting and downpipes		✓	✓
Leaf diverters		✓	✓
First flush diverter		✓	✓
Vent cowl (screened)	✓	✓	✓
Flap outlet and tank overflow	✓	✓	✓
Calmed inlet		✓	✓
Backflow prevention*	✓	✓	✓
Vacuum kit		✓	✓
Tank gauge	✓	✓	✓
Filtration/Disinfection**			✓
Housing for pump and/or treatment	✓	✓	✓
Total Cost* **	**$4,200–$7,800**	**$4,900–$10,000**	**$5,500–$11,800**

Notes
**Rate limitation is recommended for all tank fill applications, and can be accomplished with a float valve for mains top up*
***Anticipated to be two stage cartridge filtration and a UV unit suitable for domestic use.*
****Total cost reported as simple install. See Table 5 for simple vs. complex installations.*

Table 5: Cost range for components of a home water storage system. Prices exclude GST.

Components	Low cost	High cost
Tank (25,000–30,000 L)	2,600	3,600
Levelling and sand for tank placement	250	500
Tank transport[1]	Free	1,000
Dual plumbing (new install)[2]	450	1350
Pump (installed, including labour)	640	1050
Leaf diverters	35	125
First flush diverter	60	320
Vent cowl (screened)	10	25
Flap outlet and tank overflow	10	25
Calmed inlet (for rain collection)	75	110
Float valve or backflow valve (for mains top up)[3]	150	420
Vacuum kit	55	330
Tank gauge	55	130
Filtration/Disinfection[4]	1020	3200
Pump and treatment housing	500	1000
Additional costs associated with complex installations		
Excavation and retaining	0	3,500[5]
Spouting and downpipes[6]	1080	2160
Re-roofing (excluding spouting and downpipes)[7]	10,200	20,300

Notes
25,000 L tank typically 3.5 m diameter and 3.0 m high.
30,000 L tank typically 3.8 m diameter and 3.1 m high.
[1]Transport cost for 25,000 L concrete tanks (each), plastic tanks delivered free of charge
[2]Installed rate $45/m, low cost assumes 10 m of additional piping. high cost assumes 30 m of additional piping
[3]Low cost assumes only plumbing required for an air gap, high cost assumes testable double check valve
[4]Assumes whole house 'point of entry' treatment, not 'point of use' (i.e. under kitchen sink)
[5]Assumes excavation and retaining structure for 30,000 L tank, not exceeding 1 m height
[6]Installed rate $70/m^2, low cost assumes 10 m x 10 m roof area + 1 downpipe, high cost assumes 10 m x 20 m roof area + 1 downpipe
[7]Re-roofing assumes 100 m^2 for low cost and 200 m^2 for high cost

5.1 Cost Implications of Tanks and Reticulated Supply

The cost implications of installing water tanks are important to understand. The fixed costs for providing water to South Hokianga are approximately 96% (*personal communication FNDC* 2015). Fixed costs include infrastructure maintenance, operator salaries, vehicles, and depreciation of assets. These fixed costs must be recovered regardless of the amount of water used. Consequently, the unit price of water will increase if overall water usage decreases.

While a reduction in demand may lead to rises in per unit water costs to cover fixed costs of water supply, this increase may potentially be offset by the water saving measures taken on board with education about water use. Furthermore, water conservation measures increase the security of supply when the water source has a finite availability. Table 6 presents likely results of installing water tanks in the case of South Hokianga.

Table 6: Cost Implications of Tank Installation

Option	Cost Implication
Option 1	Annual total water use is unlikely to change, therefore costs of public water supply will remain the same. Instances of over-abstraction from the water source may be reduced but will still occur on occasion. Tank storage will maintain security of supply during low flow abstraction.
Option 2 & Option 3	The use of rain water will decrease overall demand on the public water supply. This will decrease abstraction from the source(s) and increase both water supply in the home and at the source, but will also affect an increase in the unit price of water to compensate for the fixed costs of maintaining a public water supply. Private fixed costs for tank, pipe maintenance, and treatment of rain water will also be required.
Future infrastructure development	Tanks lead to reduced production costs (reduced demand), therefore unit cost per cubic metre increases to meet fixed costs, however there is also no need to build new plant to cater for added capacity or demand.

6.0 Regulation

The installation of water tanks at existing households requires a number of activities which can be subject to consent requirements. Consultation demonstrated that the community perceive water tanks to be difficult to install due to planning and consenting restrictions. This section addresses the planning and consent enablers and inhibitors with regards to water storage tank installation:

- Resource Consent Requirements (Table 7)
  - Consultation with the FNDC District Plan Team has provided a broad assessment of the RMA planning constraints associated with installing on-site water storage. The District Plan does not generally restrict the installation of water storage tanks. In most situations, water storage tanks would be able to be installed without the need for a resource consent. However, an earthworks permit may be required in some situations and the placement of new tanks in any Coastal Hazard areas would likely require resource consent.
- Building Consent Requirements (Table 8)
  - While installation of tanks no larger than 35,000 L will not require Building Consent, any modifications to plumbing will likely require Building Consent.
- Far North District Council Draft Bylaw for the Control and Storage of Rainwater from Household Units (Table 9)
  - This draft bylaw requires the installation of tanks for all new homes, with sizing specified based on whether the property is connected to the mains supply or not. Allowance is made for potable water use after treatment and outdoor use only if not treated.
- Other Constraints (Table 10)
  - Additional regulations are presented which apply to water supply concerns in general, without direct reference to water storage tanks

Table 7: Resource Consent Requirements

Assessed Category	Explanation
Impermeable Surfaces	Rules relating to maximum area of impermeable surfaces at a property.
	Definition of impermeable surface excludes water storage tanks occupying up to a maximum cumulative area of 20 m³.
	These standard tanks can be installed without breaching impermeable surfaces rules: • 1 × plastic 30,000 L tank (11.3 m²) • 1 × concrete 25,000 L tank (10.8 m²) • 2 × plastic 25,000 L tanks (9.6 m² each)
Coastal Hazard Maps	Installation in Coastal Hazard Areas 1 or 2 will require resource consent (roughly properties on the seaward side of the State Highway).
Setbacks	If building consent is required, installation of a tank will be subject to setback rules.
	If installed 3 m from the road boundary and 1.2 m from all other boundaries, installation would meet the permitted setback (including sunlight) requirements in most urban and coastal residential settings.
Subdivision	Required to provide the ability to connect to a safe potable water supply with adequate capacity for respective potential land uses (established reticulation system or individual water supply).
	Considerations include adequacy of the supply, need for filtration equipment, access for firefighting purposes, standard of the water supply infrastructure installed within subdivisions, and adequacy of the existing supply systems outside the subdivision.
	Some reliance placed on NZ Drinking Water Standards and Council's Engineering Standards and Guidelines when assessing suitability.
Earthworks Bylaw	Earthworks permit required for any excavation or filling within 3 m of a property boundary or exceeding 0.5 m in depth over a significant area which is less than 100m² (assessed on a case by case basis).

Table 8: Building Consent Requirements

Document	Explanation
Building Act 2004 Schedule 1	Building consent is not required for the construction of any tank and its structural support provided the tank size does not exceed 35,000 L and is supported by ground.
	Building consent is required for any complete or substantial replacement of plumbing and drainage or a change in water supply system.
NZ Building Code Clause G12 Water Supplies	Suitable backflow protection must be installed[1]. Untreated water storage tanks constitute a medium hazard, with air gap, double check valve, or reduced pressure zone (RPZ) device providing suitable protection. All backflow prevention devices must be testable.
	Covers shall be provided to prevent contamination and the entry of vermin.
	Overflow to be no smaller than the inlet and shall not permit entry of birds or vermin.

Notes
1. Backflow occurs when a drop in pressure in the public supply causes water to flow from private plumbing back into the distribution system, posing a public health risk. Options 2 and 3 propose backup water supply is provided by direct refilling of the rainwater tank from the mains, with an air gap between the maximum water level and the backup water supply inlet provided for backflow prevention. An alternate solution is to install a solenoid valve to alternate the source of water between the tank and the mains. The valve switches between the two sources depending on water availability in the tank. In this case, an air gap is not applicable and either a testable double check valve or RPZ backflow prevention device will meet requirements for the medium risk situation. These backflow prevention devices require regular testing and must conform to the backflow prevention device requirements of the public water supply operator and New Zealand Building Code requirements.

Table 9: FNDC Draft Rain Tank Bylaw

Document	Explanation
Installation	All new homes to install rainwater storage tanks.
	Rainwater to be used in households must be treated (filtration and disinfection).
	Rainwater to be used in mains water supplied households must be treated and include backflow protection.
	Untreated rainwater cannot be used for potable supply or connected to reticulation.
Consents	Plumbing and backflow prevention (if required) to be approved under a Building Consent issued by Council.
Ownership	Owner/occupier required to maintain systems.
Costs	Failure to maintain systems is a breach of bylaw. All costs for repair and maintenance to be at the owner's expense.

Table 10: Other Constraints

Issue	Explanation
Health Act 1957 Part 2A Drinking Water	Intended to protect the health and safety of people and communities by promoting adequate supplies of safe drinking water from all drinking-water supplies.
	Water suppliers can restrict a water supply under certain conditions, but cannot stop water supply except for planned maintenance activities and emergency repairs.
Fire Service Act 1975 Section 26 Fire Districts	In 2006 the Northland Fire District designated the urban areas of Rawene and Omapere in the south Hokianga as urban fire districts. These two towns therefore need to comply with the New Zealand Fire Fighting Water Supplies Code of Practice.
NZ Fire Service Fire Fighting Water Supplies CoP	For any fire district under Section 26 of the Fire Service Act 1975, where a water supply is provided the council must provide fire hydrants for extinguishing fires.
	Except in case of exceptional services (i.e. unusual drought, repairs, state of emergency) the Council must at all times keep the pipes charged with water.
FNDC General Bylaws Chpt 7 Water Supply	Specific reference to continuity of supply, connections, and water quality control.
	No connections may be made to the waterworks system unless a permit has been issued. Connections, alterations to connections or repairs, to connections shall only be made by Council or its agents. (Refer Clause 716).

7.0 Usage

The three South Hokianga towns of Opononi, Omapere, and Rawene show differences in their resident population and types of homes (Figure 5):

- Opononi and Omapere show a declining permanent population and declining number of occupied homes, but total number of dwellings and number of unoccupied homes is increasing due to growth in the number of holiday homes
- Rawene shows relative stability across both total population and number of dwellings, reflective of fewer holiday homes

This variance in population make up is reflected in the annual water usage data for metered properties (Figure 6):

- 50% of Opononi properties use <68 m³/yr
- 50% of Rawene properties use <125 m³/yr
- A higher proportion of Opononi properties use 10–100 m³/yr than Rawene due to a higher proportion of holiday users than residents

Of particular significance is the fact that a large portion of the total water use is by a relatively small number of metered properties:

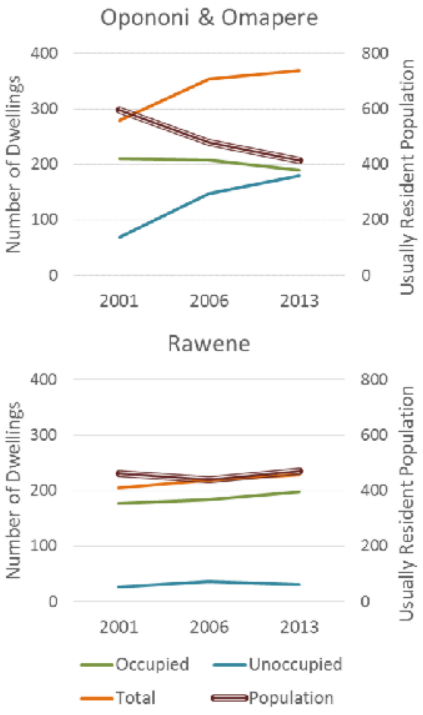

Figure 5: Statistics New Zealand Census Data

- 17% of metered properties in Opononi use 65% of the total annual water used, with highest single user using 17% (~8,800 m³) of the entire Opononi township water use
- 25% of metered properties in Rawene use 63% of the total annual water used, with the top three users using 16% (~2,500 m³ each) of the entire Rawene township water use

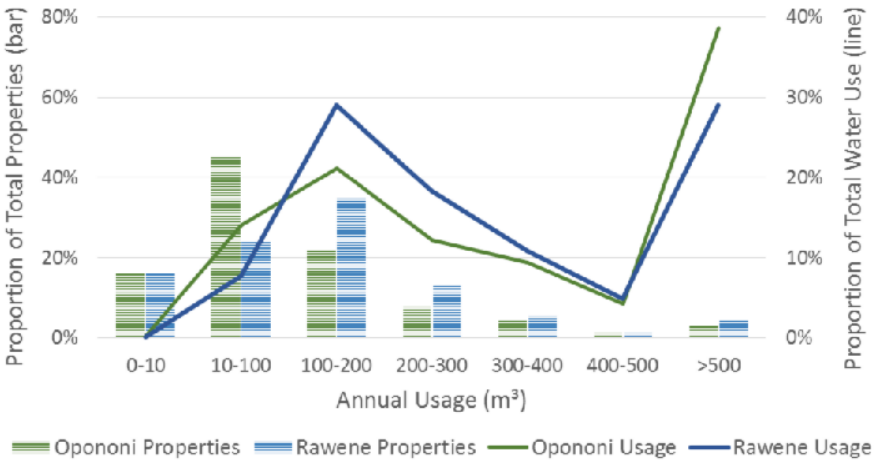

Figure 6: Uneven Distribution of Water Use

Figure 6 does not reflect the seasonal distribution of water use. Holiday users in Omapere and Opononi may use the majority of their annual water usage volume within a short seasonal holiday window, typically December–February. Although total annual usage is low, daily usage per person during holiday periods is likely to be high.

It will be beneficial to determine what efficiencies can be gained for the highest water users. These relatively few users place the heaviest demand on water supplies annually.

Table 11 provides a comparison of the implications of installing tanks across the variable range of users.

Table 11: Tanks in Relation to Variable Usage

Annual Use	Typical User Types	Implementation of Water Storage Tanks
Low <100 m³	Seasonal residents (and small permanent households)	A 3 month water shortage requires up to 25 m³ storage, on average, equivalent to one large tank
		Stored water well suited to meet the needs of small permanent households during supply shortages (typically between February–May)
		Stored water may not be fully utilised during shortages by seasonal residents as many are typically gone
		Tank installation may reduce demand when reticulated water is available, possibly driving up unit cost of water to cover fixed costs within reticulated supply.
Medium 100–400 m³	Permanent residents	A 3 month water shortage requires, on average, 25–100 m³ storage, equivalent to one to four large tanks
		Tank installation suited for use to meet demand of medium users and supplement mains supply
		Tank installation will reduce demand annually but also provide sufficient storage capacity to supplement the mains supply during supply shortages
High >400 m³	Non-residential uses (schools, hospitals, accommodation etc.)	A 3 month water shortage requires over 100 m³ storage, equivalent to more than four large tanks
		Tank installation suited to supplement mains supply
		Tank installation to meet high user demand for the full drought period may be cost or space prohibitive
		Recommended for use in conjunction with additional water conservation measures

8.0 Ownership and Payment

Two options exist for the ownership of water storage tanks:

- Private ownership
  - The tank and all associated maintenance costs are the responsibility of the home owner
  - Council ownership of water supply infrastructure stops at the boundary
- Public ownership
  - The tank and all associated maintenance costs are the responsibility of the Council
  - Easements are required to allow Council access to the tank for maintenance

– Potential risk if Council are refused access by owners or occupiers

Private ownership is the simplest solution for water storage tanks located on private property. Investment in a water supply tank to meet water demand is significant, particularly for medium to high users during periods of water shortage. Table 12 provides examples of methods implemented by other Councils to enable and encourage the use of water tanks. Water conservation education is excluded from the list, but has been widely utilised nationally to reduce demand on municipal water supplies.

Table 12: Options to Enable Tank Installation

Council	Enabler
Auckland Council 'Retrofit your home' program	Ability to apply for up to $5,000 financial assistance for water tanks installation (in addition other improvements)
	Home required to be connected to the urban water supply to apply
	Assistance repaid over nine years through a targeted rate included on the rates bill.
	Interest charged at the same rate Auckland Council pay for their own cost of borrowing (typically around 7%)
	Ability to make extra repayments
	On sale of the property, the financial assistance owing passes to the new homeowner
Waitakere City Council (legacy Council)	Minor plumbing and drainage consent required for all sanitary plumbing Subsidised Building Consent available to anyone installing a tank
	$500 rebate available for tanks larger than 4,500 L with smaller rebates for smaller sizes (tank is required to be connected for toilet and laundry use)
	Maximum number of rebates per year capped at 100
Ohura Water Supply options (Ruapehu District)	Owner can purchase tanks at their own expense
	Opportunity to purchase tanks through Ruapehu District Council with the first three years interest free then 5% interest on the balance, total cost added to rates as a loan
Additional options proposed	Rates rebates for existing properties who retrofit water storage
	District Plan or a Bylaw change to require installation for new houses
	Consider larger subsidies to high water users Some manufacturers offer discounted rates to schools and kindergartens

9.0 Further Options

Initial consultation regarding the use of water tanks as a means to supplement water supply during periods of low stream flow has been undertaken with FNDC Planners, Building Inspectors, Asset Managers, Operations Managers and Contractors, Consenting Officers, Ministry of Health (MoH) representatives, Local Councillors, and members of the community.

This initial consultation intended to present the issues, and listen to community concerns and feedback regarding what needed to be contained herein. Should FNDC proceed further with the development of the option to utilise water storage tanks in Opononi, Omapere, and Rawene, then further consultation with local community and iwi should be undertaken.

While response has been generally positive towards the implementation of water storage tanks, a clear theme has been the recognition that the ultimate solution may follow a combined approach to

drought resilience management through the implementation of multiple measures. Table 13 provides measures that may be implemented in conjunction with water tanks to manage water.

Table 13: Combined Approach to Water Supply Management

Method	Description
Education	Domestic water use is highly variable and significant reductions in overall use are often possible simply through raised awareness.
	Engage schools and community groups to share knowledge
Conservation	Water saving devices and equipment include front loading washing machines, low flow shower heads, dual flush toilets etc.
	Minimise leakage & wastage

Discussion herein has focused on individual on-site tanks with three specific configurations highlighted. One additional solution worth consideration, but outside the scope herein, spans the middle ground between public water storage reservoir and individual on-site water storage tanks—the use of communal rainwater tanks, where multiple households using the same rainwater tank or cluster of tanks.

Additional options identified in the 'Hokianga Collective Water Supplies Upgrade: Options Report' (CH2M Beca 2014) with potential to supplement water supply in the South Hokianga communities of Opononi, Omapere, and Rawene include:

- Surface water resources, including desalination
- Groundwater resources
- Public water storage (i.e. covered dam or bladder tank)

The above options are outside the scope of this report.

10.0 Summary

Options for using water storage tanks to supplement water supply during periods of low stream flow in the South Hokianga communities of Omapere, Opononi, and Rawene have been assessed. Three particular options were addressed:

- Option 1: Reticulation storage for potable and non-potable use
- Option 2: Rainwater for potable use only
- Option 3: Combined reticulation and rainwater storage for potable and non-potable use

Each option provides different strengths and weaknesses, but in summary:

- Cost of installing a water tank at a private residence can vary considerably
  - New build is easiest and the most cost effective time to introduce tanks
  - Systems requiring upgrades to spouting, roofing, and internal piping present the greatest installation challenge and expense
- The fixed costs associated with the municipal supply comprise 96% of the total cost
  - The unit price of water may increase if overall water usage decreases
  - Unit cost increase may be offset by water saving measures with net bill remaining similar

  - Water conservation measures increase the security of supply when the water source has a finite availability

- Relatively few planning and consenting restrictions exist around the installation of storage tanks
- Variable usage is a particular challenge preventing a 'one size fits all' solution
  - Demand of smaller users over the water shortage period can be met by a single tank, but larger users will require multiple tanks.
  - Installation of more than two 25,000 L tanks may require Resource Consent as tank surface area may breach impermeable surfaces rules
  - Recommended to promote education around water use and water conservation measures
- Private ownership is the simplest solution for water storage tanks located on private property
- Investment in tanks is considerable, so options to incentivise and enable tank installation are proposed

11.0 References

CH2M Beca (2014) Hokianga Collective Water Supplies Upgrade: Options Report. Prepared for Far North District Council on behalf of the Hokianga Collective by CH2M Beca Ltd.

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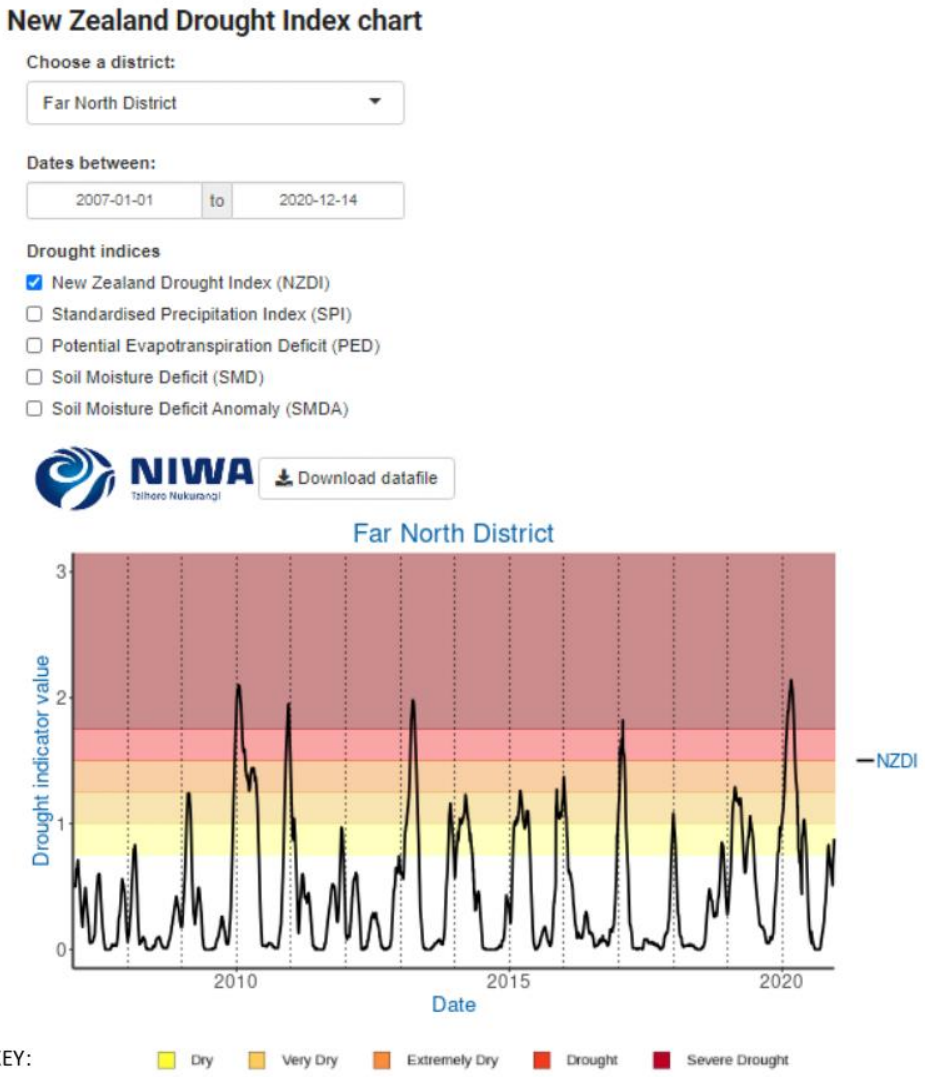
Water NZ (2013) Boundary Backflow Prevention for Drinking Water Supplies Code of Practice

NIWA NZ Drought Index results – December 2020

Link: https://niwa.co.nz/climate/information-and-resources/drought-monitor



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Northland drought assessment using Standard Precipitation Index

AUTHORS: **Hoa X. Pham** and **Jason Donaghy,** Northland Regional Council

The Standard Precipitation Index (SPI) is a powerful, flexible index which is commonly used to assess meteorological drought caused by rainfall deficit. New Zealand SPI maps provide a good indication of droughts at national level. However, this information is relatively coarse for Northland where drought severity can be strongly localised. The following article presents some insights from the application of the SPI method to historical drought events in Northland.

Introduction

Drought has a significant impact on Northland farming. It tends to starts slowly, often without warning, and can last for significant periods of time and cover large spatial areas. Drought in Northland has become more frequent and impacts more severe during summer months as a result of increasing temperature and decreasing rain totals.

At least eight severe droughts were recorded in Northland since 1900 (Keyte, 1993 and NIWA, 2010 & 2013). The Northland Avocate (Feb, 2017) reported five droughts have occurred in the past eight years and been of a highly localised nature. The frequency and severity of drought in Northland is projected to continue to increase in the future under a changing climate (NIWA, 2013 & 2016). The research presented in this article represents the first steps of an attempt to develop a regional drought warning system. It involves identifying climatic zones, applying SPI and mapping SPI for severe 1914-15, 1945-46, 1982-83 and 2009-10 drought events.

Takou Bay area at the height of drought (left) and a few months later (right) .*Photo: Matt Johnson, NRC*

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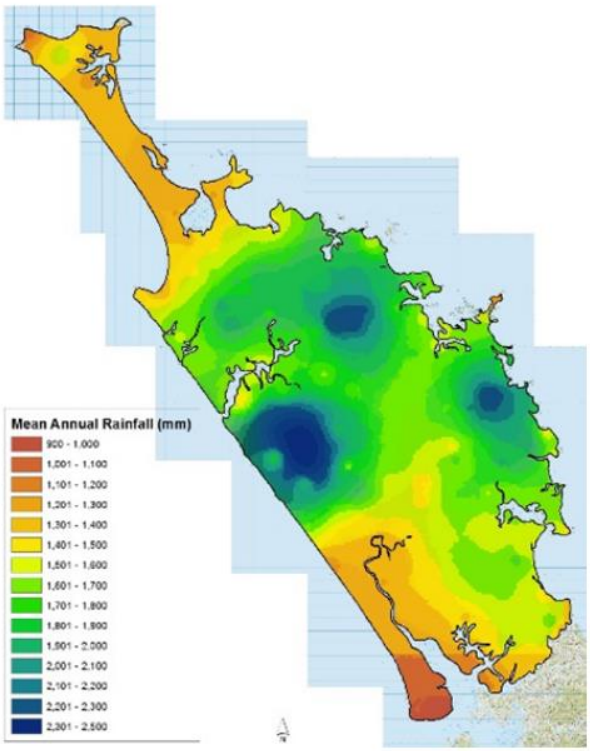
Input Data

This study used rainfall data from 140 stations owned by NIWA, MetService and NRC for grouping climate zones. Data at a maximum of 40 stations was used for historical drought assessment at regional scale. Daily rainfall data was synthesised in some cases in order to extend the time series beyond gauge operating periods.

Methods and Results

Rainfall in Northland is highly variable leading to the development of localised drought in the region. Hence, the first step was to sub-divide the region into four climate zones based on long-term annual rainfall variability (see map to right). This was done with the aid of ArcGIS Geostatistics. A ratio of 70:70 stations was used for calibration and verification of spatial interpolation process. Rainfall stations could then be selected for further analysis in this study based on achieving representation across the four climate zones.



The SPI was introduced by McKee et al. (1993) as a method of measuring drought severity for a particular rain station. The SPI is based on the probability of precipitation for any time scale. The probability of observed precipitation is then transformed into an index. The table below shows how SPI values correspond to categories of drought severity.

The main advantage of the SPI is that it allows for areas with different rainfall regimes to

[±] 2.00 and above/below	Exceptionally [wet, dry]
[±] 1.60 ÷ 1.99	Extremely [wet, dry]
[±] 1.30 to 1.59	Severely [wet, dry]
[±] 0.80 to 1.29	Moderately [wet, dry]
[±] 0.51 to 0.79	Abnormally [wet, dry]
[±] 0.50	Near normal

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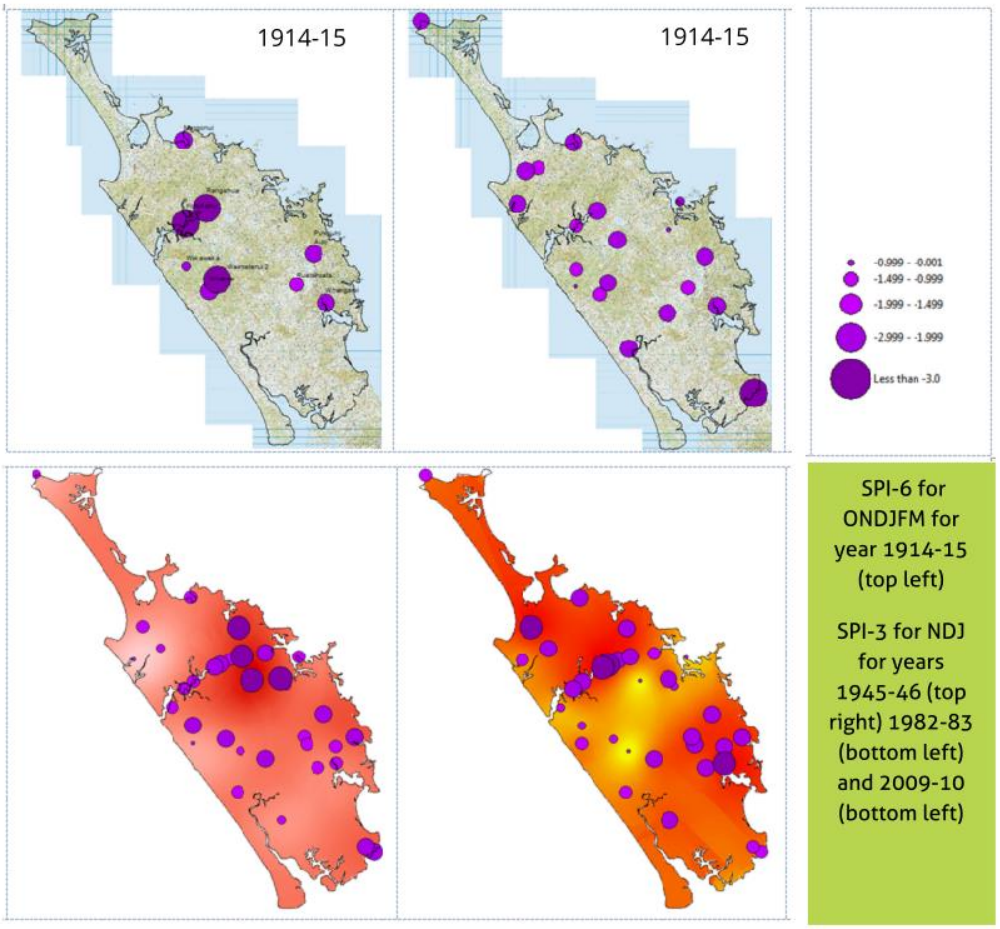
be compared. In addition, the SPI provides a method for comparing an area against its own history and giving a normalized value to describe the current rainfall conditions. Through this normalization, rainfall values at different locations can be compared (WMO, 2009). The latest SPI program (SPI_SL_6.exe) developed by the Colorado State University, USA was used in this study. This program provides monthly-based SPI values.

Northland usually experiences 2-3 month droughts with the exception of a six-month drought in 1914-1915. Drought has occurred in spring and summer during El Niño and La Niña. In order to best describe the 1914-15 and 2009-10 drought events, SPI 3 and 6 were computed, respectively. SPI-6 was computed for six consecutive months (from October to February) while SPI-3 was computed for three consecutive months (November - January). Results of these computations were used to develop SPI maps for selected historical drought events shown in the maps below. These station-based SPI maps allow drought intensity at both temporal and spatial scales to be visualised.



SPI-6 for ONDJFM for year 1914-15 (top left)

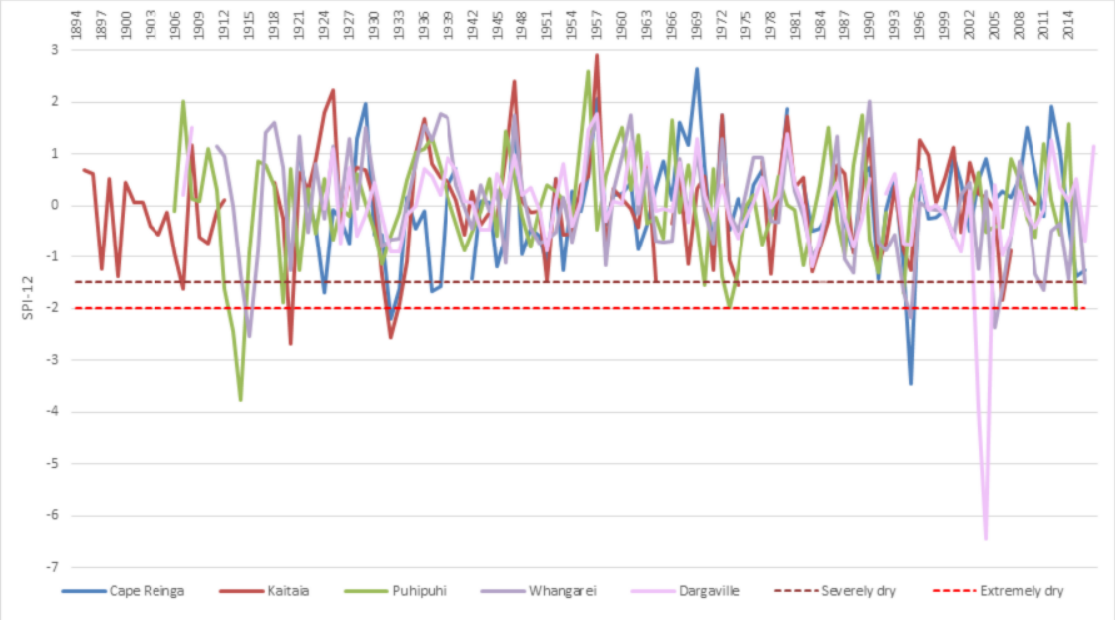
SPI-3 for NDJ for years 1945-46 (top right) 1982-83 (bottom left) and 2009-10 (bottom left)

ARTICLES

The images on the previous page display some of the general trends of dryness in the region and help to identify the most vulnerable areas to drought. There are a number of obvious features present across the landscape, but the visualization also revealed some apparent errors in the data.

- The most obvious feature in the spatial variability of dryness is a big shift from the west to east coast from early last century (1914-15) to present (2009-10). Also, more areas in the the east are identified as being extremely dry for year 2009-10 (Fig. 3).
- Another noticeable feature is that drought severity relies upon both the magnitude of rainfall deficits and its duration. For example, the 1914-15 drought was caused by both high magnitude rainfall deficits and long duration while the 1982-83 drought was induced by low magnitude rainfall deficits but long duration.

The graph below shows that majority of extreme drought events were prior to 1931 and post-1994 when SPI varies between -1.5 to -3.5 (except for Dargaville in 2004 with the SPI value of -6.44 as an error). At least five droughts have been declared by the Government since 1994, suggesting an increase in drought frequency over the past two decades.



SPI-12 computed for selected rainfall stations

At this time the research has not progressed to the point of ranking the droughts as well as prediction of drought return period. It is also expected that agricultural and hydrological droughts will be integrated in the system when automated network data are available.

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See page two for description of engagement with hāpu

MEETING:	**INFRASTRUCTURE COMMITTEE – 25 FEBRUARY 2015**
Name of item:	**SOUTH HOKIANGA WATER SUPPLIES**
Author:	Barry Somers – Asset Engineer
Date of report:	22 January 2015
Document number:	A1539987

Executive Summary

The purpose of the report is to seek confirmation of the water supply projects that are being forwarded for Ministry of Health (MoH) CAPS subsidy applications.

Recommendations

1, That application be made to the MoH for CAPS funding to supply potable water to Omanaia based on a new water treatment plant and storage located near the raw water intake.

2. That application be made to the MoH for CAPS funding to improve the raw water security for Rawene/Omanaia based on raw water storage tanks

3. That application be made to the MoH for CAPS funding to improve the raw water security for Opononi/Omapere, based on a bore option, and if the bore water is found unsuitable, piping water from the Waimamaku River.

4. That work progress towards developing a Co-Governance agreement with the Hapu of Waimamaku with respect to water extraction from the Waimamaku River

5. That the CAPS applications be lodged under an umbrella application of the Hokianga Water Supply Collective.

6. That strategies be developed around improving water conservation, on site storage and community education of water related topics.

1) Background

At the Council meeting of 7 August 2014, the following recommendations by the Infrastructure Committee were passed. *To develop secure and drought proof long term raw water resources for the Rawene and Opononi water supplies through working in partnership with the hapu and communities of the South Hokianga.*

This report was submitted to the 23 July 2014 Infrastructure Committee meeting and the Committee made a recommendation to Council.

Resolved *Court/Collard*

THAT the Far North District Council work in partnership with the hapu and communities of the South Hokianga to find long term solutions to the water shortages in the South Hokianga;

AND THAT Council representatives for this project are Councillor John Vujcich and Community Board Members John Schollum and Louis Toorenburg;

AND THAT the solution takes into account the possibility of obtaining Ministry of Health subsidy to assist in funding of the works;

AND THAT the proposed solution be reported back to the Infrastructure Committee for consideration and recommendation to Council before the subsidy application is lodged;

AND THAT Council writes to the Ministry of Health outlining the proposed South Hokianga water scheme and the intention to lodge a subsidy application.

Past Investigation by Council

Since the mid 1990,s there have been over 40 reports commissioned by Council around the water supply issues in the South Hokianga. In the mid 2000's Council successfully obtained MoH subsidy to supply treated water for Omanaia, the subsidy monies was ultimately surrendered back to the MoH without the works being undertaken. Despite the large number of previous investigations, the basic issues of raw water shortages and the supply of untreated water have remained unresolved.

Engagement undertaken

Over the last six months the nominated Elected Representatives and Council Staff have been working closely with the other water suppliers and Hapu of the South Hokianga. A group representing these parties was formed by Hokianga Health and is nominally as the Collective. Overall there have been a large number of hui to find resolutions to some complex issues that have arisen. This engagement has also required the strengthening the relationship between the Hapu and Council.

The existing water supplies in the South Hokianga have many factors in common. Working with the Collective has provided Council and Collective members with an overall understanding of the issues and options within the South Hokianga. To support the Collective, Council has provided engineering support to enable individual water suppliers to scope solutions specific to their needs and to support them with preparing CAPS applications.

The issues associated with the Council run water supplies have been ongoing for a long time, this combined with Council failure to deliver on past commitments made has created a environment where the affected people developed a significant distrust of Council.

South Hokianga Water Schemes Overview

Within the South Hokianga there are the following water supplies, or need for water supplies.

- Utukura/Horeke. Currently no water supply. The Hapu are progressing a CAPS application.
- Taheke. Currently no water supply. Currently limited local support for a community water supply.
- Waima Existing treated water supply. Has a shortage of raw water in drought conditions.
- Rawene/Omanaia Existing Council supply. Has a shortage of raw water. The Omanaia consumers receive untreated water.
- Whirinaki Existing treated water supply. Recently CAPS funding approved to improve raw water security and extend the reticulation.
- Pakanae Existing treated water supply. Only minor issues around treatment processes.
- Kokohuia Existing untreated supply. Have some operational issues around pressure management.
- Opononi/Omapere Existing Council treated water supply. Has a shortage of raw water in summer conditions
- Waimamaku Existing untreated water supply.

Sustainable Raw Water Options

Typically the existing schemes source their water from small bush streams which have insufficient flow during the drought periods.
With regards to sustainable raw water options, there are three rivers of sufficient flow that extraction from those rivers will not have a adverse environment effect. These are the; Waima, Whirinaki and Waimamaku rivers. Ground water outside the basalt dome is not viable. There are no bores within the volcanic dome to know whether it is a suitable source of raw water.

A constant theme from consultation was raw water storage was favoured to resolve Councils water shortage issues. Due to works needed to control algae growth, typically the cost of raw water storage is substantially more than extracting from a river.

Water Conservation and Education

There has been a common theme raised by the Hapu that they have a very strong relationship with their rivers and have manawhenua status over the rivers. As guardians of the rivers, they have concerns that the water is being needlessly wasted through leaks and poor management processes. Also that people are now relying on rivers without first utilising the resource the already receive, ie rain water harvesting and on site storage.

How the water resource is used and managed is of significant concern to Hapu and consequently there is reluctance to allow a new resource to be commissioned. The

Hapu want Council to have a holistic approach to water use and unless Council embraces water conservation and water use education, any new or additional extraction of water is likely to be opposed.

Legalities Regarding Supplying Untreated water

Through the engagement process there have been questions raised regarding the legality of supplying Omanaia consumers with untreated water which is unsuitable for drinking or food preparation. The following is a overview of this action with regards to the Health Act and Commerce Act.

- In terms of the Health Act.

Using the criteria detailed in the Health Act, Omanaia water does not met the criteria to be classified as a rural water supply and classified as a drink water supply. As a drinking water supply it needs to met the criteria for a drinking water supply, ie suitable for drinking and food preparation.

- In terms of the Commerce Act.

The Commerce Act is around the goods being what they are stated to be, and fair trade. Council advises the raw water consumers on the water meter invoices that it is untreated water. However Council charges the Omanaia consumers the same capital rate as other Rawene consumers which includes capital works associated with the water treatment plant, yet in terms of receiving potable water they get no benefit from the water treatment plant.

An initial assessment is in terms of both Acts Council is not in a strong position.

If requested a detailed legal assessment can be prepared for Councils consideration.

Draft Long Term Plan and Proposal Overviews

The following is a overview of the proposals which have been included in the Long Term Plan for public consultation.

A) Opononi / Omapere Water Supply

The raw water for the Opononi / Omapere water supply is currently sourced from two streams. Approximately 25% is sourced from the Waiarohia Stream and 75% from the Waiotemarama Stream. Virtually all available water is extracted from the Waiarohia Stream whereas, the resource consent to extract water from the Waiotemarama Stream limits extraction to maintain a residual flow to sustain the streams ecology and for use of down stream users.

Over recent droughts, the volume extracted from the Waiotemarama has resulted in less than consented residual flow remaining in the stream, and as from 2019 the level of residual flow will be increased exacerbating the situation. From 2019, in a normal summer there will result in insufficient water to maintain supply to the Opononi/ Omapere consumers for up to several months each year.

An initial assessment has been undertaken as to potential raw water sources. The key findings are;

- Raw water storage requires to be covered to prevent algae growth which peaks late summer and can make the water unsuitable for treating to a potable standard. Covering to prevent algae growth substantially increases the cost. The advantage of raw water storage is it doesn't require a new water source. The disadvantage is it is substantially more expensive than the other options.
- There are currently no ground water bores in the area that have sufficient yield. What is unknown is the potential yield in the higher basalt zone. Without drilling a test bore it is not possible to predict whether sufficient ground water is available. The advantage of ground water is it could be found close to the existing infrastructure, and will not affect stream flows. The disadvantage s the high level of risk associated with finding ground water of sufficient quality and quantity.
- There are only two rivers, the Waimamaku and the Whirinaki that have sufficient flow to enable extraction not having an adverse environmental impact. Of these two the Waimamaku is lower cost source to develop. The advantage of using the Waimamaku River is it is a known raw water source where the water extracted will have minimal environmental impacts. The disadvantages include it having poorer raw water quality, being warmer water and there are significant cultural issues through transferring water from one catchment to rohe.

Of the various alternative water sources evaluated, the following three are considered the most viable. Detailed operational costs assessments have not been undertaken.

Option	Description	Investigation	Capital estimate	Operational cost
1	Construct raw water storage. (Site not determined)	$200,000	$5,790,000	Additional $20,000 p.a.
2	Groundwater (Bore water availability unknown)	$80,000	$ 710,000	Additional $10,000 p.a.
3	Supplementary intake constructed on the Waimamaku River	$80,000	$1,280,000	Additional $10,000 p.a.

During initial consultation, the option of on-site storage at each household (ie water tanks) has been promoted as a possible solution. While on-site storage has a place with water conservation, there are significant weaknesses with the use of on-site water storage to resolve this water shortage issue. The weaknesses include;

- As the tanks are private assets, Council can't control or manage when consumers use their on-site storage so it is available during times of drought. As droughts happen late summer, it is likely some on- site storage will have run dry by the time it is needed.
- Except in emergencies, Council cannot turn off a water supply. Therefore can't stop consumers using the reticulated water. In addition to maintaining supply for use, Council has to keep the water mains charged for Fire Fighting purposes.
- As the tanks would be private assets, Council can't force the retrofitting of households with water tanks, duel plumbing, pumps, filtration, backflow prevention, etc.

- Many properties are not designed, or are unsuitable to accommodate on-site tanks

The Council's proposed direction included in the Ten Year Plan
It is proposed to install a test bore to see if there is ground water available. If ground water is found, this option will be developed further. If not the Waimamaku River option will be developed. Because of the risk of not finding ground water, funding is based on the Waimamaku option $1,280,000

Co-Governance of the intake and resource

The Waimamaku Hapu have expressed a desire that Council enter into Co-Governance with them to manage the water resource. Work is progressing on what a Co-Governance agreement would look like.

B) Rawene / Omanaia Water Supply, Potable Water

Between the raw water source and the water treatment plant in Rawene there are approximately 59 homes (approximately 125 people) and a marae that receive untreated water direct from the raw water main. The consumption of this raw water places those people at a high level of risk at contracting water borne diseases.

The consumers receiving this untreated water have for a long time requested Council rectify the situation by installing the necessary treatment and reticulation to provide them with potable water.

Currently Rawene has the equivalent of 1.8 days average daily flow of treated water storage, this is less than the desirable 2 day average daily flow treated water storage. There is no storage to maintain flows to the Omanaia area. Addition storage will reduce the vulnerable to water shortages through either mains breaks, plant failure or drought situation. Most options include additional 500 m3 treated water storage.

Various options for treatment have been evaluated of which the following four are considered the most viable. Detailed operational costs assessments have not been undertaken.

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Option	Description	Investigation	Capital estimate	Operational cost
1	Decommission the existing water treatment plant and build a new water treatment plant near the intake thereby using the existing raw water main to provide potable water. Includes 500 m3 reservoir	$200,000	$3,360,000	No change from existing
2	Pipe treated water to Omanaia from the existing water treatment plant with	$80,000	$2,670,000	Additional $4,000 p.a.

	500m3 reservoir			
3	Rawene raw water sourced from Whirinaki with a new water treatment plant near the existing raw water source for Omanaia. Includes 500m3 reservoir	$200,000	$3,580,000	Additional $20,000 p.a.
4	Supply Omanaia and Rawene with treated water from a new treatment plant that would be built next to the current intake at Petaka Stream. The existing Rawene Water Treatment Plant at De Thierry St would be decommissioned. A 500 cubic-metre raw water reservoir and a 300 cubic-metre treated water reservoir would also be built near the new plant to make the water supply more drought resilient.	$50,000	$1,850,000	Additional $15,000 p.a.

The option for Point of Use (PoU) treatment at each household at an estimated cost of $4,000 per household. When consulting with the raw water consumers regarding the option of PoU treatment, this option was strongly opposed on multiple grounds including; they are already paying the same capital rate as other Rawene consumers who are receiving potable water, therefore they should have the same level of service as those receiving treated water and, when the raw water source was first developed, the local Hapu gave their permission to allow this source to supply Rawene, yet they have been left disadvantaged in terms of receiving non-potable water. Because PoU treatment occurs on private property, Council can't force the property owner to either; allow the PoU treatment to be installed, or take ownership of, or maintain the assets making PoU treatment an unsustainable option for many properties.

With regards to the MoH CAPS application, it is to be based on option 4, a new water treatment plant and treated and raw water storage near the intake on Aytons Road.

C) Rawene / Omanaia Water Supply, Drought Resilience

Recent droughts have shown the Rawene supply will run short of water for any drought greater than a 1 in 5 year drought. Various options for drought resilience

have been evaluated of which the following four are considered the most viable. Detailed operational cost estimates have not been undertaken.

Option	Description	Investigation	Capital estimate	Operational estimate
1	Raw water storage dam near intake	$150,000	$2,890,000	Additional $10,000 p.a.
2	Raw water storage dam near Rawene Rd	$150,000	$2,300,000	Additional $10,000 p.a.
3	Pumped supply from Waima River including raw water storage tank to maximize the existing source	$60,000	$1,080,000	Additional $20,000 p.a.
4	Storage tank to maximize the existing source and enable trucking of water. This concept is viable up to around a 1:20 year drought.	$50,000	$ 370,000	Additional $5,000 p.a.

With regards to Option 3, due to Cultural considerations, this option is currently not viable. When the cost of investment for option 3 is divided by the volume of water expected to the pumped through this line, the cost of the raw water is estimated around $60 per cubic meter. The alternative of constructing raw water storage tanks (option 4) and trucking raw water during times of drought would be more economical.

With regards to Option 4, This is only needed if the treatment plant near the intake does not proceed.

With regards to the MoH CAPS application, it is proposed to include raw water storage tanks that will be included with the treatment option. .

LTP Implications

All options listed will have various degrees of impacts on increasing rates. If CAPs funding is successful, this will have some, but not significant effect in reducing that impact on rates increases.

Regardless of whether the CAPs applications are successful of not, whether the project proceed will still be depend on the outcomes of the LTP process.

2) Discussion and options

There are multiple option to progress these projects. Which option is ultimately chosen will depend on the LTP process and this answer will not be known until mid 2015.

The final round of MoH subsidy closes end of February 2015, after which the subsidy scheme will be discontinued. To enable a subsidy application to be made, it is

necessary for Council to choose a option before undertaking community consultation. This pre-empting a LTP decision may result in either altering the proposed projects, or withdrawing the application after it has been lodged.

Councils Options include;

- Status Quo, Do minimal
- Apply for CAPS funding based on the lowest cost option
- Defer a decision until conclusion of the LTP process.

The recommended actions are;

1, That application be made to the MoH for CAPS funding to supply potable water to Omanaia based on piping treated water back from Rawene.

2. That application be made to the MoH for CAPS funding to improve the raw water security for Rawene/Omanaia based on raw water storage tanks

3. That application be made to the MoH for CAPS funding to improve the raw water security for Opononi/Omapere, based on a bore option, and if the bore water is found unsuitable, piping water from the Waimamaku River.

4. That work progress towards developing a Co-Governance agreement with the Hapu of Waimamaku with respect to water extraction from the Waimamaku River

5. That the CAPS applications be lodged under a umbrella application by the Hokianga Water Supply Collective.

6. That strategies be developed around improving water conservation, on site storage and community education of water related topics.

3) Financial implications and budgetary provision

Due to the effect of depreciation funding, MoH CAPS subsidy does not substantially reduce the cost to the community. This is due to the same rate of depreciation funding is applied regardless as to whether the works are constructed with Council raised funds, or using CAPS subsidy funds. The only difference between Council funding and CAPS funding is the interest paid to repay a Council funded loan.

Financial implications and budgetary allocations are being considered through the LTP process. For both Rawene and Opononi, to fund the proposed works will result in a significant percentage increase in the water rates portion of the rates bill.

4) Reason for the recommendations

To provide formal Council endorsement for the MoH CAPS subsidy applications

To show Council support for a more holistic approach to managing water supplies.

Manager: Jacqui Robson - General Manager - Infrastructure and Asset Management

Compliance schedule:

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

The decision-making process has sought to —

a) identify all reasonably practicable options for the achievement of the objective of a decision; and
b) assess those options by considering—
    i) the benefits and costs of each option in terms of the present and future interests of the district or region; and
    ii) the extent to which community outcomes would be promoted or achieved in an integrated and efficient manner by each option; and
    iii) the impact of each option on the local authority's capacity to meet present and future needs in relation to any statutory responsibility of the local authority; and
    iv) any other matters that, in the opinion of the local authority, are relevant; 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.

Relationship with existing policies and Community outcomes.	These projects are listed in the LTP for community consultation
Possible implications for the relationship of Maori and their culture and traditions with their ancestral land, water, site, waahi tapu, valued flora and fauna, and other taonga.	+These projects have significant implication to the affected Hapu. Further engagement with the hapu is required.
Views or preferences of persons likely to be affected by, or to have an interest in the matter, including persons with disabilities, children and older persons.	The wider community will be consulted via the LTP process.
Does the issue, proposal, decision or other matter have a high degree of significance as determined under the Council's Policy #2116?	The decisions are not significant. The topics will be consulted via the LTP process.
If the matter has a Community rather than a District wide relevance has the Community Board's views been sought?	The view of the Community Board have not been sought
Financial Implications and Budgetary Provision. Financial Controller review.	To the considered as part of the LTP process.

Sky harvest – turning the tide on rainwater tanks

Link: https://www.stuff.co.nz/environment/climate-news/122375277/sky-harvest--turning-the-tide-on-rainwater-tanks?cid=app-android

Chris Marshall Aug 17 2020

Is the answer to some of our water woes above our heads, rather than under our feet?

As Auckland looks for a way out of its water crisis, towns and cities elsewhere are also wondering how to cope with a future involving more extreme weather.

Harvesting rainwater from the roof seems like an obvious answer to supply some of our growing water needs.

Yet when *Stuff* spoke to councils around the country, we found only a few actively encourage their residents to harvest rainwater.

Several weren't convinced it was a cost-effective way out of dry spells, and many said it was purely a choice for each household to make. On current progress, a rain tank revolution doesn't seem likely any time soon.

Yet, as New Zealand's rainfall gets more erratic, several commentators are calling for councils to be more proactive at prodding households to install alternative supplies.

VARIED ANSWERS

We asked 66 of the nation's 67 territorial authorities (excluding the Chatham Islands) about their policies. We found that, at least for urban households, 40 councils were neutral (61%) when it came to encouraging the use of rainwater, 21 could be classed as supportive (32%), and only a few (7%) offered assistance such as discounts on tanks.

The clear leaders when it came to encouraging residents to capture rainwater were Kāpiti and Gore. Gore now requires all new residential buildings to install a rainwater tank with a minimum capacity of 3,000 litres (tiny). Kāpiti has, since 2009, required households in residential zones to capture rainwater for toilet flushing and outdoor use, and offers homeowners a targeted rate to make the installation cheaper.

In most places around the country, it comes down to the individual household. Councils say a rain tank can boost resilience to a water shortage or natural disaster, but many spokespeople told Stuff tanks were not always a simple or appropriate alternative to boosting town supplies.

Taupō District Council, home of the county's largest lake, had a lukewarm response. It said it would look at the costs and benefits of all options around rainwater tanks as part of its current District Plan review and likely engage with the community on consultation late 2020, or early 2021.

In Auckland, Healthy Waters strategy manager Andrew Chin said public consultation was under way on encouraging rainwater use in the supercity, particularly for uses that don't require water to be of drinking quality, such as garden-watering and filling swimming pools.

A 5000 litre tank barely visible on a suburban property in Auckland's Mt Albert. The installation, tank, plumbing, and pump cost the owner around $5000. The retrofit tank collects water from only half of the roof.

The drought had made the question more urgent, he said.

The council was looking at removing barriers, such as the need for a resource consent, he said, and had already waived the application fee.

Homeowners who wanted to go a step further and plumb rainwater into the house could – provided they met Building Act requirements.

But Auckland had no plans to subsidise tanks, he said. “That’s a tall ask, post-Covid.”

Meanwhile, Chin said, the council-owned water company, Watercare, was working to alter its charging system to make it cheaper for those who reduced demand on the city’s supply by harvesting rainwater.

But, Chin said, the 45,000 to 50,000 Auckland houses that already relied solely on rainwater had their own issue: overstretched private water carriers. “Our biggest concern for the next summer is to encourage those not on reticulated supply to ensure they have enough storage capacity.”

Water carriers in some areas were overstretched in the summer providing top ups to those relying solely on rainwater. The Auckland Council is encouraging such properties in the supercity to increase their capacity.

DRY TIMES COMING

While many of us treat tap water as if it was endless, council reserves are not inexhaustible, nor cheap to provide.

The 2019/20 summer saw drought declared across the entire North Island, parts of the South Island and the Chatham Islands in mid-March.

Before the government declaration, there were a series of district-wide water restrictions – towns or areas self-regulating by banning car-washing and garden-watering, or, in extreme cases, all

outdoor water use. (Outdoor use can account for 20 per cent of a household's consumption, but councils aren't legally required to supply it.)

During the summer, many of us were urged to save water by councils, as reservoirs in areas such as Dannevirke got to as low as 5 per cent of capacity. Auckland's end-of-autumn storage lake level was 43 per cent, giving former Waitakere City Mayor Sir Bob Harvey flashbacks to the summer of 1993/94, when Auckland's dams were at just 32 per cent.

Rainwater collection on a rural property, augmented by council supply.

Dry spells should no longer come as a surprise to councils.

The effects of anthropogenic climate change on a range of weather variables for New Zealand are widely accepted and relatively well-known; an increase in hot days and the frequency and severity of droughts, coupled with a probable rainfall increase in the west and south but a decrease in the north and east.

Niwa's projections show people should expect more extreme daily downpours, especially in the west.

Whatever humanity's efforts at clawing back the greenhouse gas emissions fuelling these changes, Niwa's best case scenarios involve more dry weather and more damaging rain events, sometimes in the same region.

'NOT COST-EFFECTIVE'

Many people living in rural New Zealand are familiar with using rainwater tanks, fed off the house or other buildings to augment a district council supply, or, in some cases, as the sole source of water.

So, in regions where rainfall is predicted to be less or, at best, unpredictable, should more urban properties be collecting and using rainwater?

Unfortunately, the answer is not simple.

“If landowners have both town supply and rainwater tanks, then in an extended dry spell it is likely the tanks will run dry anyway,” said Whāngārei District Council Water services manager Andrew Venmore. “Councils need to be able to supply this extra water, so the engineering solution required is the same size regardless of whether tanks are in place or not.”

“Rainwater tanks usually require pumps. The power used by the thousands of pumps is greater than that required by a well-engineered water supply,” he said.

“So, environmentally, rainwater tanks are not a good idea, and that is before consideration is given to the power, materials and water used to make the plastic or concrete tanks initially.”

In 2011, Greater Wellington Regional Council commissioned research into whether installation of rainwater tanks for toilet flushing and outdoor water use would help defer building a new storage lake or dam.

The results showed tanks could provide for a high percentage of a household’s water needs for these uses. However, widespread installation would not be cost-effective as an alternative to developing the metropolitan Wellington water supply system.

However, the research noted, tanks would be good for households’ emergency resilience.

Whāngārei’s Venmore felt there was room for individuals to contribute to making their own supplies more secure.

Water harvesting on a large residential property.

"I believe that where people are motivated to do it themselves, it should be allowed, but as a solution to wider community issues it is rarely a sustainable solution."

He cited a discussion paper, which found an average house in the upper North Island could expect upfront costs of around $7,500 to install a 5000 litre tank – and that was for non-potable use (toilet flushing and outdoors).

Even after paying for a tank, the owner of a house with a 160 square metre roof might still run out of rainwater between 42 and 47 days a year, with the longest empty duration up to 19 days. (The rainfall figures came from Warkworth.)

The annualised cost over a period of 25 years, taking into account money saved on water charges and adding in tanker refills, was $324 a year – pushed up partly by councils, looking to recoup income lost from water charges by upping the water rate per cubic metre.

"If sufficient proportions of the area supplied by a water provider were to move to rainwater tanks the effective demand might be cut significantly (by up to 40 per cent)," the report said. "Given that 80 per cent of the water provider's costs are fixed (listed as salaries, overheads, depreciation, etc) and must be covered by the water charges, the only option is to increase costs to cover the fixed costs."

SHIFTING COSTS

Financially, buying a water tank would seem hard to justify for a homeowner if the goalposts keep shifting.

But from a council's perspective the price increase might be necessary – councils need to cover provision in dry weather, as well as things like wastewater infrastructure.

The report itself admits it is largely coming at the issue from a council's point of view "...if the cost per household for [a] new water source is less than the cost of retrofitting rainwater tanks to existing properties and installing rainwater tanks in all new properties, then the correct economic answer is to build the new water source. It is recognised in this that there may be additional environmental or social issues associated with a new dam or aquifer that may override the economic balance."

A familiar-sounding trade off: economics vs the environment.

The Department of Conservation offices in Taupō were designed with rainwater harvest in mind from the outset with water for gardens and car washing piped to a tank concealed under a deck.

Several proposed new dams and water plants have been controversial, because of their costs to nature.

In 2018, after years of debate, Hawke's Bay Regional Council finally gave up on the proposed $330 million Ruataniwha Dam after spending $20m pursuing it.

A contributing cause was Forest & Bird's successful challenge to the acquisition of land on the conservation estate. More water meant more intensive farming, and more pollution in rivers, said Forest & Bird's Lower North Island regional manager, Tom Kay, following the council's decision in 2019 to put $250,000 towards investigations into a scaled-down version of the dam.

Ruataniwha was touted originally as a solution to the depletion of the over-allocated Tukituki River, prey to algal blooms in summer due to low water flow, high water temperature and nutrient load.

In West Auckland, plans to build a new water treatment plant stoked fervent opposition because it required clearing native bush.

It makes sense for water used in the outdoors to be harvested on the property itself, says senior lecturer in Architecture and Planning at the University of Auckland Bill McKay. The Kāpiti Coast District Council agrees.

Meanwhile, councils are under pressure to ensure their residents have a reliable – and healthy – supply.

HEALTH RISK?

While it may not make much sense to insist on domestic water collection in dry areas such as Hawke's Bay or Central Otago, some councils are encouraging homeowners to harvest the rain.

Kāpiti Coast District Council offers targeted rates that provide an interest-free payback on up to $5000 worth of assistance on a retrofitted water tank.

The KCDC believes encouraging rainwater harvesting and the use of grey water for outdoor irrigation mean its current supplies will "meet the needs of our growing communities for years to come".

For more than 10 years, it has required new households in urban areas to capture rainwater for toilet flushing and outdoor use, as a minimum.

Water services co-ordinator Ben Thompson says some households that do not want town-supplied water have been permitted to remove their water supply connection to become completely reliant on rainwater. “If they do, we remind them that the water is variable in quality, and they will need to manage their own treatment.”

However, this raises potential health issues.

The Building Code requires drinking water supplies be adequate in quantity and potable, so collected rainwater needs to have some form of treatment.

But Venmore says the difficulty of ensuring compliance is another barrier to widespread rainwater tank use. Councils are keen to ensure untreated rainwater is not unwittingly, or deliberately, used as a potable source.

The rub is, in some rural communities, it already is.

The Building Code and Health Act says water collected from a roof must comply with drinking water standards and any dual system (where households get grey water off the roof and potable water from their council) must be designed to prevent mixing.

Untreated rainwater must not be able to backflow from a tank and potentially contaminate a council’s supply.

This is a real issue, says Water New Zealand’s technical manager Noel Roberts, but it can be guarded against.

But where houses rely on rainwater for domestic use, any ongoing maintenance to ensure the water is drinkable is left in the hands of the homeowner.

Many farming families will be able to relate stories of dad scooping a dead possum out of the tank after the water got smelly.

Although there is an increasing range of innovations, like first flush diverters, leaf and debris diverters and protozoa-rated filters, to ensure roof water is clean, there remains a risk.

Rainwater harvesting has been the norm in rural areas for years, why not urban?

The Ministry of Health does not have statistics on the number of people who get sick each year from using roof water, nor does it know what waterborne pathogen was to blame.

“Unfortunately, we don’t have data on that,” replied Emily Barrett, a senior media advisor at the ministry.

“Generally speaking, those types of conditions wouldn’t have any coded data that identified the mechanism by which they contracted the pathogen.”

WHO USED ALL THE WATER?

Data is a problem in other areas, too.

We know that the average consumption per person in New Zealand is around 200 litres per day – a nation profligate in personal water use. (Though Aucklanders, who pay by the litre, have got theirs down to 150 or so.)

Household water meters (increasingly, smart meters) are not required by many councils – yet they are instrumental in finding leaks, and every council is supposed to be acting to monitor or reduce water waste.

According to Justin Bell of Leak Detection Limited, of about 400 callouts in Auckland a month, 75 per cent show no sign above ground that water is being lost.

If they weren’t metered, with a leak appearing as a spike in the bill, he said, this water would likely continue to be wasted.

Water meters should be mandatory as an aid to finding leaks and enabling properties to monitor water use, says leak finder Justin Bell.

Going through one $45,000 post-Covid-19 bill for a business in Auckland revealed it was losing 56 litres a minute, and probably had been all lockdown.

“All councils should know what percentage of loss they have in their reticulation, because they should know what volumes are going out and that each property that’s running off that network has as an average take that’s acceptable,” said Bell.

Conversely, some argue that water meters do nothing to encourage water conservation, as some homeowners believe: “I’m paying, so I can use as much as I like.”

Education on saving water may not hit home for some until taps run dry -- and places like Taupō are bedevilled by the perception that, with a huge lake on the town’s front door, there is plenty of water to go around.

Chlorinated, fluoridated, evaporated. Water use in some districts is well above the average for the country and New Zealand is a country with high average water use per capita.

According to a submission by Lakes and Waterways Action Group Trust to the Taupō District Council Draft Water Supply Strategy in June 2019, locals have an unenviable record.

Quoting the council's own figures, the group noted: "Taupō District ... has a high use of water per capita, with approximate consumptive use of 400 litres per person per day. This is significantly higher than the national average and indicates inefficiencies in the supply chain and the community's current views on water conservation that may need to be better managed over time."

Of the medium-sized districts, Taupō's consumption was the highest (2016/17 NZ Water National Performance Review Data: Water Daily Use).

That prompted the group to call for the council to make water tanks mandatory for all new buildings in the District Plan, and consider subsidising water tanks.

CALLS TO ACT

It's a call several others have backed.

Bill McKay, senior lecturer in Architecture and Planning at the University of Auckland, believes central and local government should be offering incentives to make individual houses less reliant on council infrastructure.

Down pipes heading straight to stormwater drains or soakage could, in some urban properties, be hooked up to a tank.

In a Radio New Zealand interview in July, McKay said: “When you have got a house in town you’re not allowed to catch water off the roof and drink it or cook with it… but that use is minor, so why don’t we catch rainwater ourselves for the major uses: flushing toilets, washing, watering the garden…”

Environmental Defence Society chief executive Gary Taylor was of the same mind in January, in Coromandel. “The combination of an expanding population, plus climate change impacts means a lot of smaller centres will need to be reviewing their potable water schemes and building in more resilience.

“Demand management is fine as a tool but where I’m sitting right now in Whitianga, the grass is brown, fruit trees are dying and there’s a total outside use ban, not likely to end any time soon. Supplementary rain or wastewater tanks are useful when there’s space for them.

“So the question really is whether local government, especially smaller entities, are onto this or not.

Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

HE ARA TĀMATA
CREATING GREAT PLACES
Supporting our people

Summary of National Climate Change Risk Assessment August 2020

"All the ducks are beginning to be lined up for the implementation of coherent adaptation across New Zealand"

Dr Judy Lawrence, Climate Change Research Institute, Victoria University of Wellington

Introduction

On 3 August 2020 the government released the first National Climate Change Risk Assessment. This report will underpin the National Climate Change Adaptation Plan due in two years and will be updated every six years.

The findings were based on a "high-emissions, business-as-usual future, resulting in a projected 67 centimetre sea level rise and 3°C temperature increase by 2090".

Major Risks Identified

The report identified 43 risks that could have major or extreme consequences to New Zealand. These risks were ranked by urgency and severity in five domains:

- Natural environment
- Human
- Economy
- Built environment
- Governance

The main risks identified in terms of urgency were:

Domain	Risk	Urgency
Natural environment	Risks to **coastal ecosystems**	78
	Risks to **indigenous ecosystems and species**	73
	Risks to **riverine ecosystems**	68
	Risks to **wetland ecosystems and species**	68
	Risks to **migratory and/or coastal and river-bed nesting birds**	65
	Risks to **lake ecosystems**	65
Human	Risks to **social cohesion and community wellbeing** from displacement of individuals, families and communities	88
	Risks of **exacerbating existing inequities** and creating new and additional inequities	85
	Risks to **physical health** from exposure to storm events, heatwaves, vector-borne diseases etc	83
	Risks of **conflict, disruption and loss of trust in government**, from changing patterns in the value of assets and competition for access to scarce resources	83
	Risks to **Māori social, cultural, spiritual and economic wellbeing** from loss and degradation of lands and waters	80
	Risks to **Māori social, cultural, spiritual and economic wellbeing** from loss of species and biodiversity	80
Economy	Risks to government from **economic costs**	90
	Risks to the **financial system** from instability	83
	Risks to land-based **primary sector productivity and output**	81
	Risks to **tourism**	80
	Risks to **fisheries**	80
	Risks to the **insurability of assets**	75
Built environment	Risk to **potable water supplies** (availability and quality	93
	Risks to **buildings**	90
	Risks to **landfills and contaminated sites**	85
	Risk to **wastewater and stormwater systems**	85
	Risks to **ports** and associated infrastructure	70
Governance	Risk of **maladaptation** across all domains	83
	Risk that **climate change impacts will be exacerbated** because current institutional arrangements are not fit for climate change adaptation	80
	Risks from **climate change-related litigation**	78
	Risks of **delayed adaptation and maladaptation**	75

Impact on Māori

Māori will be disproportionately impacted, with the following main risks identified:

- risks to social, cultural, spiritual and economic wellbeing from loss and degradation of lands and waters, and from loss of species and biodiversity
- risks to social cohesion and community wellbeing from displacement of individuals, families and communities
- risk of exacerbating and creating inequities due to unequal impacts of climate change.

Opportunities

Some opportunities were also identified, but the report noted that research would need to be done to ensure responses to those opportunities didn't worsen climate change impacts unintentionally.

The opportunities are:

- higher productivity in some primary sectors due to warmer weather
- businesses being able to provide adaptation-related goods and services
- lower cold weather-related mortality
- and lower winter heating demand.

Local applicability

The risks and opportunities identified are for New Zealand as a whole. How they apply for the Northland Region could be assessed alongside the risk analysis being conducted by the regional group, Climate Adaptation TeTaitokerau (CATT). In turn, these risks could be assessed for the Far North District, following the methodology used for the National Climate Change Risk Assessment.

Rainwater Tanks to Supplement Town Supply

Council Briefing

12 November 2020

Whangarei District Council

Reasons to Consider Rainwater Tanks

- Next New Water Source
- Drought Resilience
- Reduced Cost
  - Council
  - Homeowners
- Environmentally Friendly
- Emergency Supplies

Whangarei District Council

New Water Source

- Study started in 2003
- A total of 21 potential sources considered
- These included Wilsonville Quarry, Kamo Mines, a number of rivers and also rainwater tanks for outdoor usage.
- All options were ranked and the top ranked options underwent more in depth analysis
- Rainwater tanks ranked 15th of the 21 options with the comment from the consultants being "The present investigation considers the installation of rainwater tanks to be a fatally flawed option, in that the capital cost to yield ratio is excessively high."

Whangarei District Council

New Water Source

- On completion of the in depth studies initially Ngunguru River was chosen.
- However, after a further review and with support from Northpower the Wairua River was ultimately selected.
- The Benefits of the Wairua Option are;
  - We have an existing take consent and can take water down to low flows
  - Cheapest option as only upgraded water treatment plant required.
  - It can provide approximately 10,000m3 of additional water per day
  - Allow for future expansion to Mangakahia River and possibly Maungatapere Forest Dam.

Whangarei District Council


Whangarei
District Council

Drought Resilience

- The 2020 Drought highlighted the need for improved Resilience
- However in the worst Drought on record Dams didn't drop below 40%
- The Hatea Line and the Whau Valley WTP upgrade will help
- The Poroti/Wairua Upgrade will add the equivalent of 2,000,000m3 of storage at a cost of up to $30 Million.
- Can Rainwater Tanks also play a part?

Whangarei District Council

Rainwater tank as supplementary water source

- Only considered for outdoor use. Most other water suppliers have looked into this at some point and decided against it.
- In order to assist Council the water needs to be guaranteed so infrastructure can be reduced
- Rainwater tanks can't store enough water
- If every domestic property in the City had a 5m3 tank full at the start of a drought it would provide an additional 105,000m3 of Storage
- This is approximately 6% of Whau Valley Storage.
- If only future properties had tanks – then approximately 65,000m3 could be created over next 50 years – 3.25% of Wairua Source and a cost of $90,000,000

Whangarei District Council

Potential Issues

- Tanks need to be full at start of drought
- Lack of ongoing maintenance and replacement (Sydney Study)
- Difficult to enforce
- Need to ensure tanks are not refilled with town supply
- Make enforcing restricts more difficult
- Requires community to adopt certain behaviors
- Only reducing demand that supplier can control with restrictions

Whangarei District Council

Potential Benefits to Households

- Rainwater tanks are often considered a cheaper, environmentally friendly water source
- Studies from around the world have queried this
- However, each supply is different.
- What is the local situation?
- Undertook a study of our water supply network and the local cost of rainwater systems
- Study made some assumptions about things like tank and pump size and water volumes but generally took a conservative position.

Whangarei District Council

Study Findings

	Rainwater Tanks (for Outdoor Use)	WDC Town Supply
Operational Energy Intensity	1.10 kWh/m^3	0.43 kWh/m^3
Lifecycle power cost per m3	45 cents	11 cents
Total whole of life cost per m3	$10.49	$2.52
	All costs excl GST	

Whangarei District Council

Carbon Footprint

- The total Carbon Footprint of Rainwater Tanks and WDC water supplies have not been calculated.
- The Environment Agency did this work for the UK and concluded rainwater harvesting had a 40% larger footprint than town supplies.
- We do know that for WDC the power usage of rainwater tanks is 2.5 times great than town supply per m3.

Whangarei District Council

Emergency Use

- Water Tanks can be useful when no town supply is available in an emergency.
- Tanks as small as 200 litres can be used to store water to supplement the 3 days supplies that all residents should keep.
- Tanks need to be kept full so as to be available when needed.
- The water is not potable and would need to be treated or boiled if it was to be drunk

Whangarei District Council

Conclusions

- Rainwater tanks provide very little benefit in a drought scenario
- Rainwater tanks will not reduce the amount of water infrastructure required
- Rainwater tanks use 2.5 times more power that town supply per m3
- Over the life of the tank it will cost users more to use tank water that to use town supply

Whangarei District Council

7 KARAKIA WHAKAMUTUNGA – CLOSING PRAYER

8 MEETING CLOSE