UPDATE ON WHITIANGA WATER SUPPLY STRATEGY STUDY

TO:	Thames-Coromandel District Council
FROM:	Brett Houston/Shamal Ginigaddarage
REPORT DATE:	16 July 2024
MEETING DATE:	6 August 2024
RECOMMENDED ACTIONS:	Decision

1 PURPOSE | TE TAKE MŌ TE PŪRONGO

The purpose of this report is to seek endorsement from Council for the proposed water supply strategy which includes short- and long-term options.

2 EXECUTIVE SUMMARY | WHAKARĀPOPOTOTANGA

In April 2022 Water Services staff commissioned Lutra Consultants Limited to undertake a long-term water supply strategy study for future-proofing the public water supply in Whitianga.

The study is being undertaken in two stages:

- Stage 1 comprises the identification of preferred water supply management options and a strategic approach. Stage 1 is now complete.
- Stage 2 comprises the finalization of a water supply strategy report, which will include short and long-term options and their programming from investigations through to implementation. This work is yet to commence.

On 5 July 2023, staff workshopped the proposed strategic approach and water supply options with the Mercury Bay Community Board and Thames-Coromandel District Council. The proposed approach was endorsed by both the Council and Community Board, and preferred options were identified.

A governance level update was done to the Mercury Bay Community Board regarding the Stage 1 outcomes, outlined the next steps and key risks though an information report during the discussion at Mercury Bay Community Board meeting held on 28th February 2024. Through that, Council seek support for the continuation of Stage 2 of the Whitianga Water Supply Strategy in the 2024/25 financial year.

Continuation of the stage 2 of this programme requires Council funding approval as part of the 2024-34 LTP process.

3 RECOMMENDATIONS | TE WHAIKUPU

That the Thames Coromandel District Council:

1. Receives the "Update on the Whitianga Water Supply Strategy Study" Report dated 16 July 2024
2. Decide on the proposed strategic approach and preferred option.
3. Decide the continuation of Stage 2 of the Whitianga Water Supply Strategy in the 2024/25 financial year.

4 BACKGROUND | TUARONGO

The need for a water supply strategy

Following the 2019/20 drought event, Council requested Water Services staff to undertake investigations to find an additional water source to secure the public water supply in Whitianga. The initial investigation determined that there was a need to develop a long-term public water supply strategy which would future proof the water supply for Whitianga by reducing household and consumer demand, improving supply network performance, and increasing available water supply. The design horizon for the strategy study is 50 years, with Infometrics 2021/22 data used to inform growth projections over this timeframe.

Developing the strategy

Lutra carried out an initial options identification and assessment, investigating 30 potential water supply options. During this stage, Water Services Staff and Lutra conducted a meeting with key community and iwi stakeholders so their views could be incorporated into the technical analysis. This work showed that drought and natural disaster are stronger drivers for improvements in the short to medium term than predicted population growth.

This analysis was then shared at a workshop with the Mercury Bay Community Board and Thames-Coromandel District Council held on 5 July 2023. At this workshop preferred options for the strategy were identified, along with risks and issues needing to be addressed. The strategic approach and preferred options in are discussed in detail in Section 5.

The proposed strategic approach was presented in Mercury Bay Community Board meeting held on 28th February 2024 to get their support for the programme.

Strategy Objectives

The water supply strategy for Whitianga has the following objectives:

1. Provide a secure and resilient long-term water supply for Whitianga, for the next 50 years and beyond.
2. Provide solutions appropriate to the local conditions.
3. provide solutions that are feasible and achievable within the bounds of current day legislation.

5 OPTIONS AND ASSESSMENT | KŌWHIRINGA ME NGĀ

Strategic Approach

The Whitianga water supply strategy contains three areas of focus:

1. **Reducing the household and consumer water demand** as far as practicable.
2. **Improving the water supply efficiency of the network** to reduce non-revenue water over time.
3. **Increasing capacity of water supply** to ensure resilience in the face of peak population periods, drought, climate change and natural disasters.

Figure 1 The Whitianga water supply strategy

Strategic areas 1 and 2 (reduce and improve) build on existing work programmes with some new options that can be implemented or started in the short to medium term (within 5 years) to reduce water demand and improve resilience. Areas 1 and 2 represent programmes that will be continued over time as part of the Water Services Team 'business as usual'.

Strategic area 3 (increase) represents a new, larger project to provide significant additional water to Whitianga. Strategic area 3 has a longer-term focus for implementation but is potentially required within next 10-15 years to meet peak water demand and growth, but will need to be confirmed post implementation of other work being undertaken under the Strategic areas 1 and 2 (reduce and improve) to confirm timing for this project. Based on timing it may require detailed technical and planning investigations to be commenced in the medium term.

The following Tables 1 and 2 have been developed to show scenarios of potential reductions in

water Source and Water Treatment Plant (WTP)P Production from the implementation of Strategic areas 1 and 2 (reduce and improve). These have been estimated as potentially achieving between 10 and 20 % savings based on what has been achieved recently by Tauranga City Council.

Table 1 – Water Abstraction forecast over next 10 years (Based on 2023/24 data)

Scenario	Population Growth	Population Growth %		Annual Avg. Daily Demand (m3/d)		Peak Season Avg. Daily Demand (m3/d)		Peak Season Maximum Daily Demand (m3/d)		Resource Consent Maximum (m^3/d)
		Permanent population	Peak season population	2023	2033	2023	2033	2023	2033	
1 No reduction in water consumption and no reduction in NRW	Low Growth	18%	25%	3,307	3,902	4,444	5,555	5,701	7,126	8000
	Medium Growth	22%	29%		4,034		5,733		7,354	
	High Growth	26%	34%		4,167		5,955		7,639	
2 Reduction in water demand by 10% and no reduction in NRW	Low Growth	18%	25%	3,307	3,512	4,444	5,000	5,701	6,414	8000
	Medium Growth	22%	29%		3,631		5,159		6,619	
	High Growth	26%	34%		3,750		5,359		6,875	
3 Reduction in water demand by 15% and no reduction in NRW	Low Growth	18%	25%	3,307	3,317	4,444	4,722	5,701	6,057	8000
	Medium Growth	22%	29%		3,429		4,873		6,251	
	High Growth	26%	34%		3,542		5,062		6,493	
4 Reduction in water demand by 20% and no reduction in NRW	Low Growth	18%	25%	3,307	3,122	4,444	4,444	5,701	5,701	8000
	Medium Growth	22%	29%		3,228		4,586		5,883	
	High Growth	26%	34%		3,333		4,764		6,111	

Table 2 – WTP Production forecast over next 10 years (Based on 2023/24 data)

Scenario	Population Growth	Population Growth %		Annual Avg. Daily Demand (m3/d)		Peak Season Avg. Daily Demand (m3/d)		Peak Season Maximum Daily Demand (m3/d)		Plant Maximum Capacity (m^3/d)
		Permanent population	Peak season population	2023	2033	2023	2033	2023	2033	
1 No reduction in water consumption and no reduction in NRW	Low Growth	18%	25%	3,081	3,636	4,159	5,199	5,117	6,396	8000
	Medium Growth	22%	29%		3,759		5,366		6,601	
	High Growth	26%	34%		3,883		5,574		6,857	
2 Reduction in water demand by 10% and no reduction in NRW	Low Growth	18%	25%	3,081	3,272	4,159	4,679	5,117	5,757	8000
	Medium Growth	22%	29%		3,383		4,829		5,941	
	High Growth	26%	34%		3,494		5,016		6,171	
3 Reduction in water demand by 15% and no reduction in NRW	Low Growth	18%	25%	3,081	3,091	4,159	4,419	5,117	5,437	8000
	Medium Growth	22%	29%		3,195		4,561		5,611	
	High Growth	26%	34%		3,300		4,738		5,828	
4 Reduction in water demand by 20% and no reduction in NRW	Low Growth	18%	25%	3,081	2,909	4,159	4,159	5,117	5,117	8000
	Medium Growth	22%	29%		3,007		4,293		5,281	
	High Growth	26%	34%		3,106		4,459		5,485	

Summary of Preferred Option

Table 3 - Whitianga Water Supply Strategy Areas

Strategic Area	Implementation Timing	Outline
1. Reducing the household and consumer water demand		
Water metering & billing	Current & ongoing	Continue existing work programme; implementation volumetric charging for water, subject to Council approval; investigate volumetric charging for wastewater (can only occur if volumetric charging for water is implemented).
Consumer education	Current & ongoing	Continue existing demand management initiatives per Demand Management Plan
Water restrictions	Current & ongoing	Maintain and revise settings as needed
Urban development	Short – medium	Review planning provisions for urban development and carry out household technology trials
2. Improving the water supply efficiency of the network		
Network maintenance and renewals	Current - ongoing	Continue network maintenance work programme.
3. Increasing capacity of water supply		
Raw water reservoir /community facility	Longer term but potentially within 10-15 years	Preferred option to provide additional water, protect environmental health and provide a new community asset. Significant investigations, consenting and civil assessments needed in the short term to medium term enable 10–15-year implementation.
Desalination	not applicable at this stage	'Plan B' if a raw water reservoir cannot be implemented – also of interest in terms of disaster resilience and will be investigated through this lens in stage 2

Other options that were considered for Increase water supply that were considered but rejected at this time were:

- Increasing stream water take – unlikely to be feasible under current regulatory resource consents.
- Water recycling – reuse wastewater or grey water – high costs and likely resistance from community.
- Take groundwater – local groundwaters face saline intrusion.

Taken together, the three options outlined in the table above will provide the Whitianga community with a resilient and sustainable water supply that meets strategic objectives. The strategy has been designed to be feasible, achievable within current legislative and regulatory settings and ensure that TCDC continues to comply with its obligations. Preferred options all involve approaches that have been used elsewhere in New Zealand and reflect the preferences of stakeholders.

Option 1 – Implement the Whitianga Water Supply Strategy Areas	
Summary of option:	
1. **Reducing the household and consumer water demand** as far as practical to differ the capital expenditure requirements for new infrastructure.	
Advantages:	**Disadvantages:**
• Implementation cost for the proposed initiatives under this option will be lower comparing option 2 and 3. • Improving consumer awareness and support through education programmes.	• Level of water demand reduction is not predictable. • Impact to the residents will be higher i.e., volumetric billing.
2. **Improving the water supply efficiency of the network** by reducing water losses.	
Advantages:	**Disadvantages:**
• Improved consumer satisfaction • Reduction in expenditure on treated water production • Reduce wastages of treated water	• Asset renewal program could require considerable investments. • After a certain limit investing further to reduce water losses will not be economical.
3. **Increasing capacity of water supply** by expanding the infrastructure.	
Advantages:	**Disadvantages:**
• Additional storage will result in lesser water restrictions in peak summer period. • Additional water supply is guaranteed and accurately quantifiable.	• Higher capital expenditure • Initial assessments/investigations will be required.

Option 2 – Do nothing – Maintain the status quo	
This option is to Do nothing (or) Maintain the status quo.	
Advantages:	**Disadvantages:**
• No funding required	• Potential for Whitianga to run out of water in the long term • Frequent water restrictions • Limitation of new subdivision and growth

Discussion of Preferred Strategic Areas

Reducing household and consumer demand

- Thames-Coromandel District Council has an existing programme of work to install water meters and will continue volumetric charging when authorised by Council. Volumetric charging has been reported to reduce household demand between 10 and 20% based on experience elsewhere in New Zealand. TCDC already implements volumetric charging for water supplies in other parts of the district. In the longer term, TCDC will investigate the possibility of introducing volumetric wastewater charging to manage water demand.
- TCDC has an existing Water Demand Management Strategy that includes ongoing consumer education. This work is supported and will continue.
- Low flows in the Whangamaroro Stream generally coincide with summer peak populations. Until a long-term supply augmentation is implemented, summer water restrictions are necessary. Restriction settings can be revised as necessary.

- One of the most significant ways to reduce consumer demand is through the water sensitive design of households and neighbourhoods, for example:
    - At household level, in addition to low-flow fixtures and fittings, technological improvements such as the 'Hydraloop' device are enabling household-level greywater recycling to significantly reduce household water use, reducing pressure on public water supply and wastewater networks. This technology is just starting to be used in New Zealand and could be useful in all water stressed communities. To give confidence to consumers, developers and TCDC, it is proposed to either review the existing pilot study in Auckland or conduct a pilot study in the district.
    - At neighbourhood level, measures such as appropriate drought resistant planting, artificial sports surfaces and green space design can reduce the need for irrigation.
- Rain tanks were discussed at the Mercury Bay Community Board workshop. The key feature of rain tanks is that they are not useful in a drought. However, they can improve household resilience over short peak periods and provide an emergency source of water in the event of a natural disaster. Rainwater tanks for households come in many sizes and types and the individual householder or developer can select a tank that is appropriate for their situation. Currently, there are no impediments to properties electing to use a rainwater tank.
- A key part of the next phase of work will be to review the existing Thames-Coromandel District Council Code of Practice for Subdivisions and Development to look at establishing water supply guidelines that will encourage household demand reduction and improve community water resilience. It is recommended this is done in collaboration with the development sector so that 'win-win' outcomes can be developed. The outcomes of this review are likely to be applicable across the district.

Improving water supply network performance

- TCDC has an existing water supply network strategy and renewal programme.
    - Current real network losses are estimated at approximately 20% with well-managed networks have losses under 15%, with 5% being the realistic lowest potential target (as advised by Lutra).
    - The network improvement and renewals programme are strongly supported and will continue.
    - Scheduled network improvements such as the recently installed new treated water reservoir and bulk supply point will continue to be implemented.
    - It should be noted that after water meters are installed the ability to identify water leaks at metered properties will be greatly enhanced and should result in a reduction in network losses.

Increasing capacity of water supply

- The community preference for an additional water source at Whitianga to mitigate peak water demand is a key driver of this work.
- Construction of a raw water storage reservoir will enable water from the Whangamaroro Stream (or other surface water bodies) to be captured during high flow periods and stored for use during peak periods or extended droughts. This would help protect the ecology of the stream in drought conditions.

- This option will be complex to consent and construct; the size of the raw water storage reservoir is likely to be somewhat dictated by site availability. This needs to be evaluated in detail the next phase of work so that the costs are properly understood.
- If the Whangamaroro or other local stream can be used as the source water, then the existing water treatment plant will need to be upgraded while the new reservoir is being built.
- Construction of the reservoir requires very significant civil works, and it will be necessary to evaluate proposed sites in terms of their potential to be impacted by natural disasters.
- Desalination was preferred as a 'Plan B' option and potentially as a separate initiative to provide additional resilience to water supplies. Desalination technologies can be provided at many scales, from large, fixed treatment plants to household sized units such as those commonly used on boats. In New Zealand, there is currently no regulatory framework for community-scale desalination plants. In stage 2, an investigation into how desalination could be cost-effectively utilised in Whitianga to increase overall resilience will be carried out. The findings from this are likely to be applicable across the district.

Risks and issues

Water Reform: funding, delivery capacity and timing

Central government's water reform process has been paused. Staff will advise Council when direction from central government becomes available.

Irrespective of whether TCDC retains ownership and control of its water assets, the strategy and its component parts are needed by the Whitianga community, and the work will remain relevant.

It is recommended to progress with Stage 2 of the strategy, which does not require significant capex investment. Implementation timelines and the scale and scope of work programmes can be re-evaluated once the scope of the water reform process has been confirmed.

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6 FINANCIAL CONSIDERATIONS | HE PŪTEA WHAIWHAKĀRO

There are no applicable financial considerations as the work is proposed to be funded from 2024/25 Water Services Opex Budget, subject to Council approval of the 2024-34 Long Term Plan.

7 SIGNIFICANCE AND ENGAGEMENT | TRANSLATION

In making any decision, Council is obliged to consider the significance of that decision. The decision being considered has been assessed against the Council's Significance and Engagement Policy. A summary of the assessment is as follows:

Criteria	Assessment of degree of importance

Whether there is a legal requirement to engage with the community.	Community engagement has already occurred at an early stage of the project. When the Stage 2 work is completed and presented to Council then further Community engagement will be required for the next stage of the project.
What the level of financial consequences of the proposal or decision.	No financial consequences at this stage of the project
Number of people affected and/or with an interest in the decision being made. Will the proposal or decision affect a large portion of the community?	The proposal will affect the whole of the Whitianga community, in a beneficial way
Level of impact on those people affected by the decision.	High
Level of community interest apparent for the issue, proposal or decision; or the potential to generate community interest.	High
Level of impact on Māori, Māori culture and traditions	High
Likely impact and consequences (both positive and negative) on the current and future social, economic, environmental, or cultural well-being of the district or region	Consequences of not accepting the proposed approach in this report would be exposing the Whitianga Community to potential water shortages in 10+ years' time. 10+ years is an estimate only and exact timing will be confirmed as described in the body of this report.
Does the proposal affect the level of service of a significant activity.	Yes
Are the likely consequences controversial.	Potentially depending on the final recommendation
The form of engagement used in the past for similar proposals and decisions	Direct engagement with Community.
Level of impact on the capacity of the Council to carry out its role and functions	Significant
Whether the impact of a decision can be easily reversed.	No
Whether the ownership or function of a strategic asset(s) is affected	No

8 CONSISTENCY WITH EXISTING POLICIES AND PLANS | TE ŌRITENGA KI NGĀ KAUPAPA HERE ME NGAA WHAKARITERITENGA

This decision is not significantly inconsistent with any policy adopted by the Council, or any plan the Council is required to have under the Local Government Act 2002 or any other enactment.

9 PREFERRED OPTION | TE KŌWHIRINGA MATUA

Option 1 - Accept the proposed strategic approach and support the continuation of Stage 2 of the Whitianga Water Supply Strategy in the 2024/25 financial year.

Next Steps

The next phase of work will formalise the strategy, provide guidance on progressing short-term options and confirm the feasibility, costs, and timeline for implementing a raw water reservoir

The next steps for Stage 2 of this project are as follows:

- FY24/25 - Finalise the Whitianga water supply strategic plan for Council approval.
- FY24/25 – Implement Strategic Areas 1 and 2. Water meters have already been installed. Meter reading to commence from FY24/25. Network maintenance and renewals is already occurring under the district wide water asset renewals.
- FY24/25 – Continue with water loss management programme (leak detection and repair).
- FY24/25 - Review of subdivision code water supply guidelines.
- FY26/27 - Assess the impact of implementing works under Strategic Areas 1 and 2 and assessing their effects and the effects of water metering (on water demand) in Whitianga.
- Scope and carry out a detailed technical and planning assessment to determine options, timeline, costs, and risks for the establishment of a raw water storage reservoir to confirm. Estimated timing of this work will be determined after completing the above assessments.

ATTACHMENTS

Treated and Raw Water Storage Assessment dated 16 July 2024